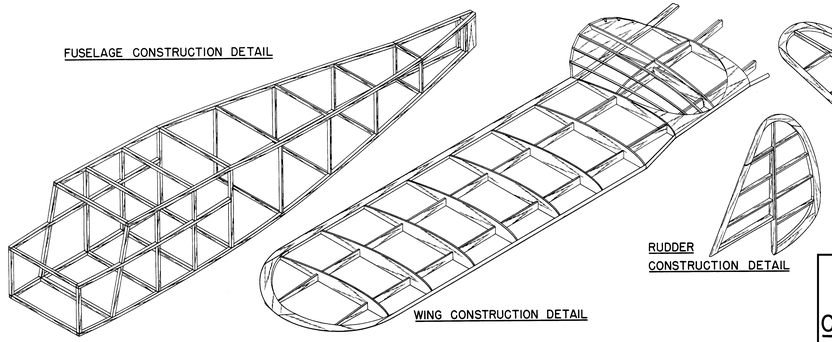
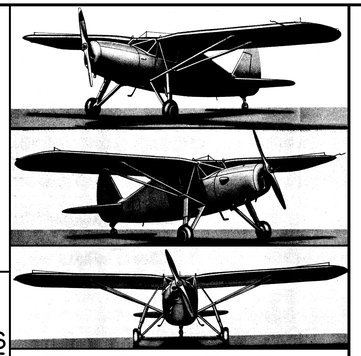
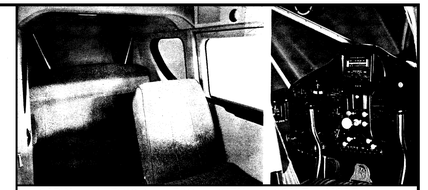
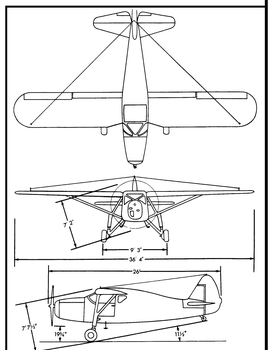
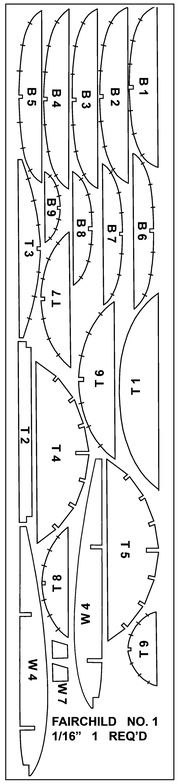


"PHANTOM" CONSTRUCTION DRAWINGS

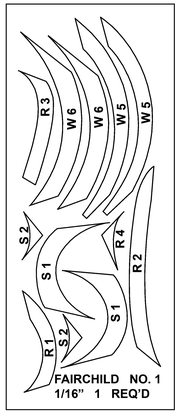

EXTERNAL DETAIL PHOTOGRAPHS


CABIN INTERIOR FOR DETAIL SCALE MODEL


OFFICIAL FACTORY 3-VIEW DRAWING



FAIRCHILD NO. 1
1/16" 1 REQ'D



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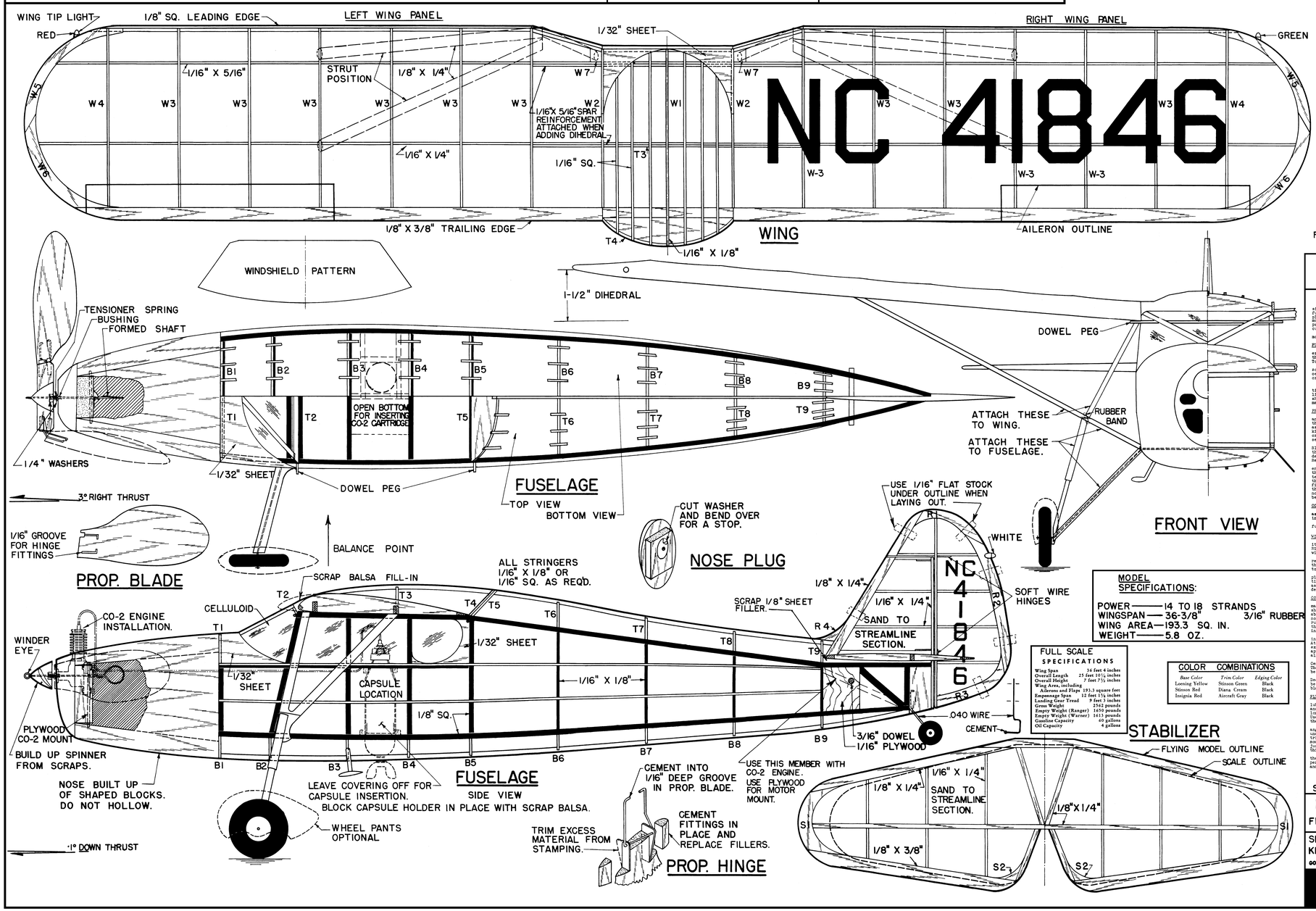

FOR BEST RESULTS USE BERKELEY CEMENT & DOPE.

INSTRUCTIONS
FOR BUILDING AND FLYING

National Championship Flying Scale Models are of advanced structure and design, but should offer no difficulties in construction once the plans are carefully studied and the sequence of the actual assembly of the model, look over the plans and pictures of the model you are building, and study the construction of the model as far as possible. Most of the difficulties will become apparent as work progresses, in all cases, take your time, making sure that all parts are correctly cut and assembled.

Select a flat workboard, or workbench for layout work. It is best to have a model knife, pliers, and sandpaper handy.

FUSELAGE:

Cover the fuselage side view plan with wax paper. Lay the 1/8" square longerons in place. Use pins for support and alignment of the longerons. [Do not stick the pins through the wood.] Insert the upright cross-pieces between the longerons. To build the second side exactly the same, build it directly over the first one. When the cement has dried, separate the two sides. Proceed to put the horizontal cross pieces in place. Insert the cross pieces at the cabin first. Then, bend the rear of the fuselage together at the rudder post. Cement the remaining cross members in place.

Cement the fuselage formers in place and insert the stringers in position. Glue up the nosing, using balsa blocks. Shape the block to approximate section with knife and rough sandpaper. Then cement it to the fuselage and blend the nose smoothly into the fuselage front. Cut the face of the nose plug to the shape shown on the plans. Drill a hole for the motor mount shaft, providing approximately 3 degrees downthrust and 3 degrees right thrust.

PROPELLER:

The special type folding propeller was designed to give maximum thrust and minimum vibration. In order that the blades will fit flush on sides of the nose piece, the hub has been designed to give a rolling motion to the blades as they fold back. Trace the blade outline shape on the shaped propeller in the kit. Cut the blades to the outline shape and sand the propeller to an airfoil cross-section, cupping the back of each blade to a depth of 1/8" at the widest section. Sand the propeller to a smooth finish.

After the propeller is completely finished, cut the blades away from the hub. Slide the stamped hinges over the formed wire fitting and cement the fitting in the grooves cut into the propeller blade. Cut the hub as shown in the prop flange detail drawing and anchor the hinge stampings into the hub with plenty of cement. Replace the hub and blades in the nose plug assembly.

Cut the large face bushing as shown in the nose plug sketch. Insert the eyelet and into B-1 but do not cement it at this time. Cement an eyelet on the front of the nose block. Push the shaft through the nose plug, slip a 1/8" washer, then a tensioner spring, then another 1/8" washer over the shaft. Push the shaft through the eyelet in the nose block and bend the end of the shaft into a hook. Hold firmly against the propeller, bend the nose plug into the fuselage and fold back the propeller blades. Determine the position where they best fit the sides of the nose and cement the stop bushing in place to guarantee this position when the rubber has unwound.

CO-2 ENGINE INSTALLATION:

A CO-2 engine as manufactured by Brewmaster Tool & Model Works may be installed as this model is the ideal size for this engine. To mount the engine, cut grooves in the balsa side blocks and slide a piece of 1/16" plywood into the grooves.

The capsule container is mounted at the position shown, on one side of the fuselage. A panel on the opposite side is left open to install capsules.

See standard propeller with the CO-2 engine.

WING AND TAIL SURFACES:

Sand the leading edge of the wing to a wedge shaped cross section and pin it in position on the plans. Pin spars in position. Cut out all the wing ribs. Set ribs W-3 in position. Pin the leading edge against them and cement. Attach the wing tips which are cut from the printed sheets.

Block up the wing tips to the required dihedral of 1 1/2" and cement the spar reinforcements in place. Cement the center section wing assembly by holding the parts securely while drying. Add the remaining ribs, breaking them as necessary to fit.

Cut out the stabilizer and rudder outline pieces and assemble them on the plans. Use 1/16" flat stock under outline pieces to properly center them in relation to the fin. Sand the leading edge as shown to blend and fit the ribs. When dry, remove the assembly from the plan and shape to a typical streamlined section. Hinge the rudder to the fin with soft wire.

COVERING AND ASSEMBLY:

Cement the completed wire framework thoroughly to remove the rough spots that may mar the smooth lines of the finished model. Cement the cabin windows and the windshield in position. Be careful when cementing the celluloid as celluloid is soluble in cement. Use only very small quantities of cement and be sure that it does not smear. Cement the dowel pegs into the fuselage where shown to hold the wing in position. Cement the wing and stabilizer assemblies in place to the fuselage. However, the rudder is covered and fitted to the stabilizer in order that it may be faired directly into the rear of the fuselage.

The covering material included with this kit is "Silkspan" which is a water insulable paper and which may be applied to the framework either wet or dry. Cut the covering material to the outline shape as possible to avoid cutting or spoiling the finished job. If applied dry, spray the surfaces lightly with water and apply two coats of dope when thoroughly dry. Tail surfaces are covered on both sides. Cover all wood parts with tissue.

After the wing is covered, sand the wing struts to a streamline section. Cement the struts in place, reinforcing each end with a small piece of the paper covering. The struts are not attached to the fuselage at this stage in order that the wing may be shifted for adjustment and removed for storage.

Details such as vents, ribbed stabilizer, etc., may be made from scrap material. Decorative details such as license numbers are supplied in decal form and should be applied as directed on the paper backing. Control markings should be made with black india ink.

FLYING:

The model is powered by a 14-strand motor of 3/16" flat rubber 26" long and lubricated with regular rubber lubricant or green soap. By stretching the rubber and winding in slowly about 300 turns can be packed into this model, providing a flight of about 30 seconds. Before winding, fill the fuselage with grass to support the rear of the rubber bands to hold the wing in position. The model should balance at the indicated line. Add weight in the nose if necessary.

Glide the model over tall grass and adjust to give a smooth descent. If the angle is too steep, slip a wedge under the leading edge of the wing. Place a wedge under the trailing edge if the glide is too flat. Launch the model for the first few trial flight and hand launch. Correct the glide, adjusting the rudder to fly the model in flight circles of about 40 to 50 feet. Increase the number of winds, adjusting the wing for flight circles of smaller diameter under power by placing thin wedges behind the nose plug to tilt the thrust line in the desired direction.

Do not overwind the motor. Use a winder with a ratchet to prevent the rubber strands from losing their length and wind to capacity with a hand drill. The performance of the model will increase as you learn how to handle her. Good luck... and may your future models all be Berkeley Models.

MODEL SPECIFICATIONS:

POWER——14 TO 18 STRANDS
WINGSPAN——36-3/8" 3/16" RUBBER
WING AREA—193.3 SQ. IN.
WEIGHT——5.8 OZ.

FULL SCALE SPECIFICATIONS

Wing Span	36 feet 4 inches
Overall Length	25 feet 10½ inches
Overall Height	7 feet 7½ inches
Wing Area, including Ailerons and Flaps	193.3 square feet
Empennage Span	12 feet 1⅞ inches
Landing Gear Tread	9 feet 3 inches
Gross Weight	2562 pounds
Empty Weight (Ranger)	1650 pounds
Empty Weight (Warner)	1615 pounds
Gasoline Capacity	60 gallons
Oil Capacity	4 gallons

COLOR COMBINATIONS

Base Color	Trim Color	Edging Color
Loening Yellow	Stinson Green	Black
Stinson Red	Diana Cream	Black
Insignia Red	Aircraft Gray	Black

SEND 25 CENTS FOR COMPLETE CATALOG.

FAIRCHILD F-24 "RANCHER"

FLYING SCALE SCALE: 1"=1'

SPAN—36-3/8" WGT.—5.8 OZ.

KIT ENGINEERED BY BILL EFFINGER

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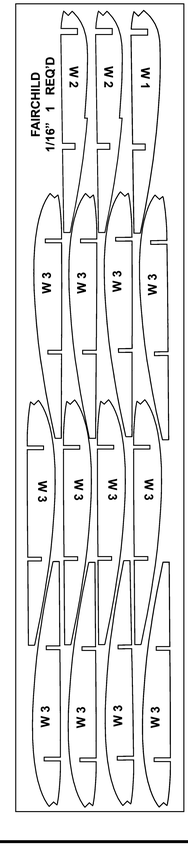
BERKELEY MODELS, Inc.
140 GREENPOINT AVE. • BROOKLYN 22, N. Y.



FAIRCHILD
1/16" 1 REQ'D