

DE-LUXE SCALE SERIES Cessna 180

21" SPAN RUBBER MODEL
CAT No 736 FK
DESIGNED & DRAWN BY

Bill Knox

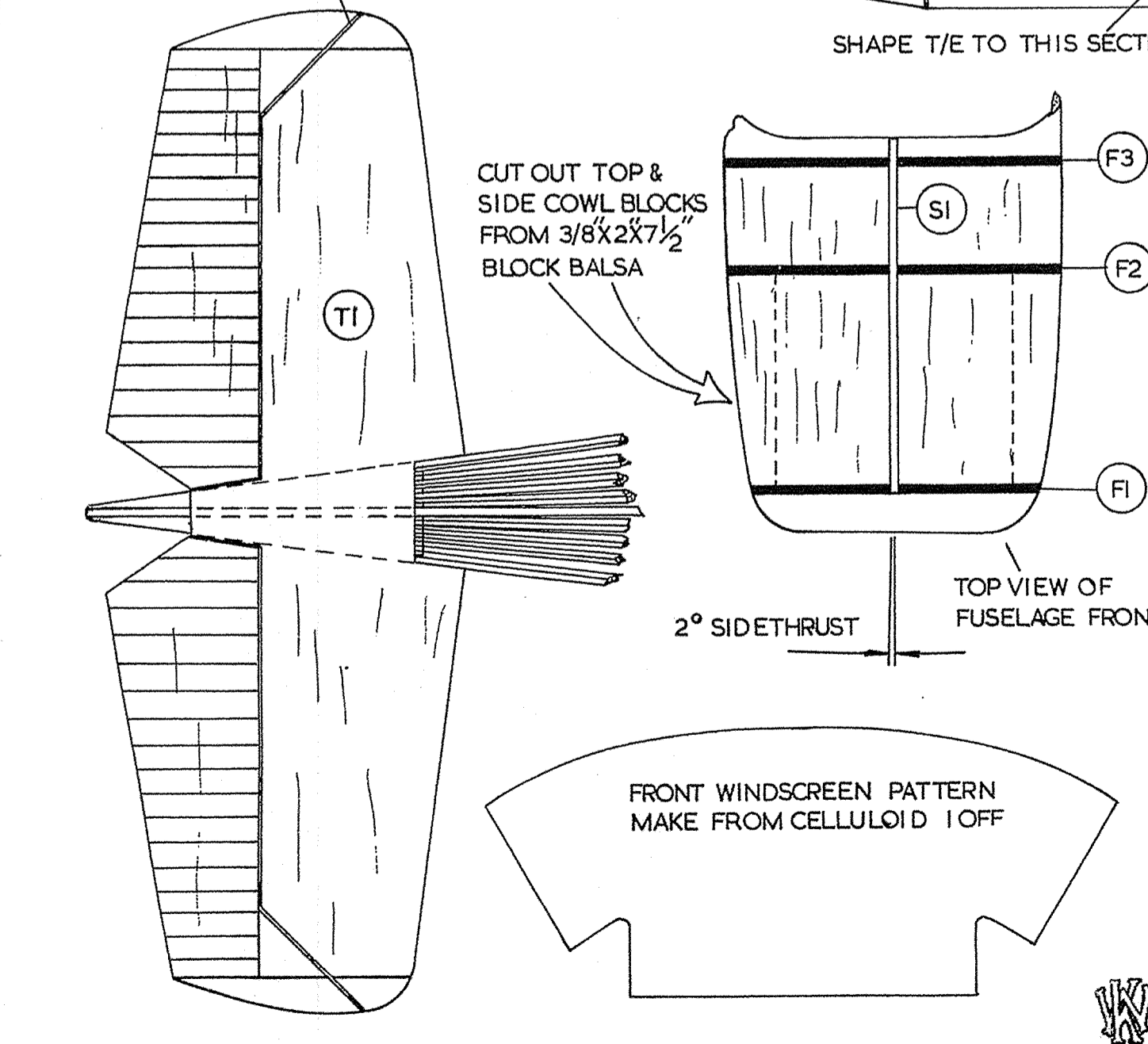
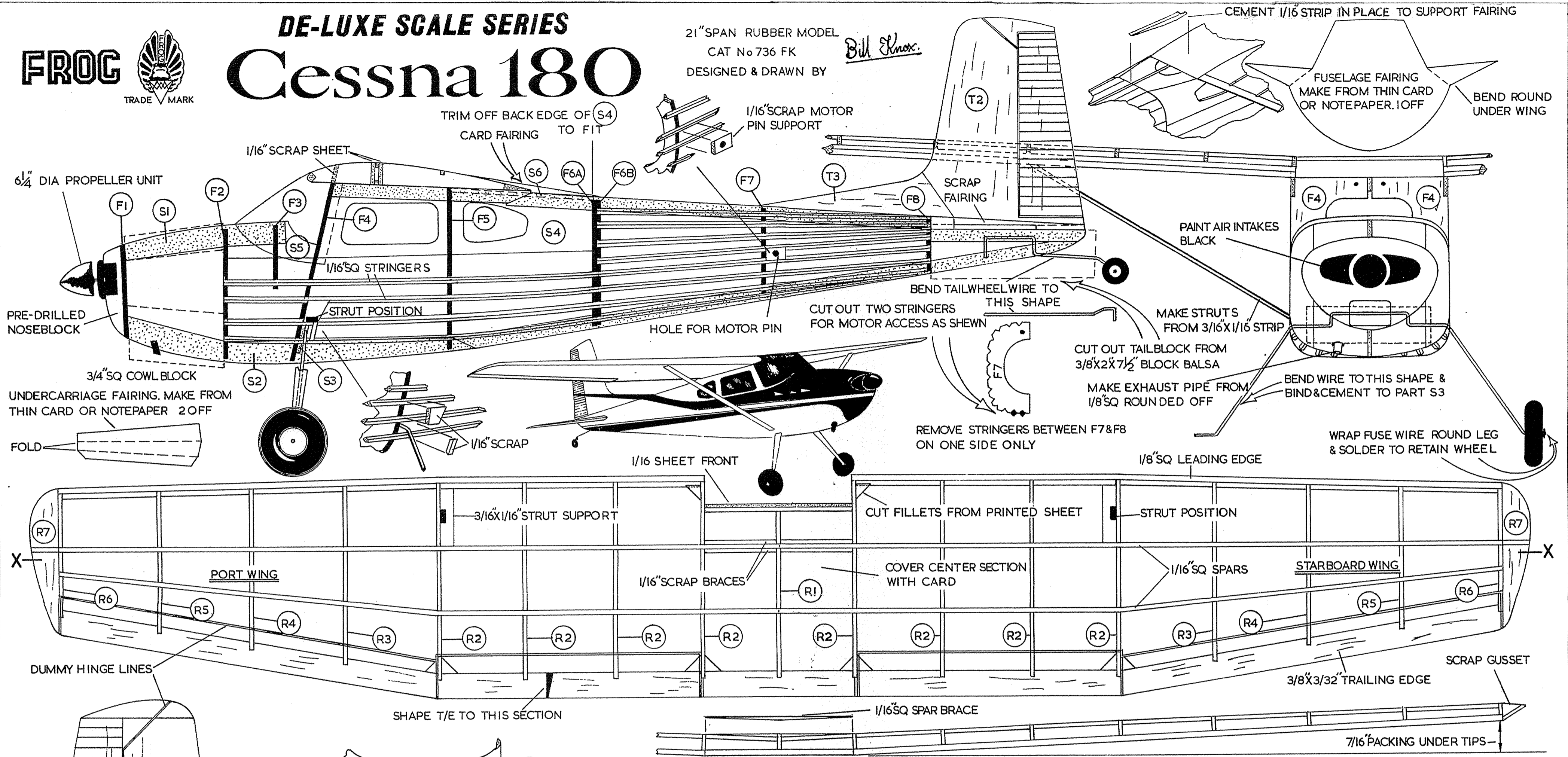


FIG 1 FUSELAGE CONSTRUCTION

PIN PARTS S1, S2, AND 3/16 X 1/16" STRIP IN POSITIONS SHEWN SHADED ON PLAN, THEN ADD ALL FORMERS AND PART S6 AS SHEWN IN SIDE VIEW OF FUSELAGE

FIG 2

DAMP PART S4 ON OUTSIDE & BEND ROUND, ALSO PART S5.

DOTS ON FORMERS GO TO TOP

CEMENT TAILWHEEL WIRE BETWEEN 3/16 X 1/16" STRIP AND TAILBLOCK.

2ND STRINGER FROM BOTTOM STOPS AT F6B

WHEN DRY CEMENT 1/16" SQ STRINGERS IN PLACE TOGETHER WITH PART S6 & CABIN SIDE S4.

MAKE BOTTOM COWL BLOCK FROM 3/4 X 3/4 X 3/4" BLOCK, AND TOP SIDE, AND TAILBLOCKS FROM 3/8 X 2 X 7 1/2" BLOCK SUPPLIED

FIG 3

CAREFULLY REMOVE FUSELAGE SIDE FROM PLAN & BIND CEMENT UNDERCARRIAGE TOP PART S3 AND CEMENT IN PLACE

THEN BUILD UP OTHER SIDE AS IN FIG 2. WHEN FUSELAGE IS DRY CEMENT NOSE BLOCK IN PLACE THEN CARVE & SANDPAPER ALL BLOCKS TO SHAPE. ALSO SANDPAPER REST OF FUSELAGE TO REMOVE PROTRUDING EDGES FROM FORMERS AND STRINGERS.

FIG 4 WING CONSTRUCTION

CUT NOTCHES IN TRAILING EDGES AND PIN IN PLACE OVER PLAN TOGETHER WITH 1/16" SQ SPAR. THEN CEMENT IN ALL RIBS THEN ADD THE TWO TOP SPARS LEAVING SLIGHT GAP AT CENTRE JOINT THEN ADD LEADING EDGE & TIPS R7

SCRAP GUSSET

WHEN DRY REMOVE FROM PLAN & CRACK TRAILING EDGE AT RIBS MARKED X. THEN PACK UP TIPS 7/16" ON BOTH SIDES. ADD TOP SPAR BRACES AND 1/16" SCRAP BRACES BOTH SIDES OF FRONT SPAR ALSO 1/16" SHEET FRONT PIECE. THEN ADD FILLETS AND FINALLY SAND DOWN WHOLE STRUCTURE.

FIG 5

FINALLY CEMENT TAILPLANE AND PIN IN PLACE AFTER COVERING AND FILL IN TAIL BLOCK WITH PIECES OF SCRAP. THEN SOLDER ON WHEELS & CEMENT UNDERCARRIAGE FAIRINGS IN PLACE.

COVER TOP OF CENTRE SECTION WITH THIN CARD OR NOTEPAPER AND COVER WING WITH TISSUE. THEN CEMENT SIDE WINDOWS IN PLACE AND COVER FUSELAGE WITH TISSUE. THEN CEMENT WING IN PLACE

FIG 6

BEND UNDER WING

SCRAP Balsa

MARK LINES WITH BALL PEN

REAR VIEW OF STARBOARD WING

INTRODUCTION

This Model is one of the FROG DE-LUXE SCALE SERIES which consists of a range of Models representing popular full-size aircraft. To ensure a satisfactory job carefully study the plan and check the parts with it before cementing them together. As with other Frog Models most of the parts are supplied ready cut to shape for easy assembly. Cement and dope are not included in this Kit but they can be bought at any Model Shop. Use quick-drying balsa cement such as FROG UNIVERSAL, you will also need a sharp balsa knife or single-edge razor blade and a few pins.

BUILDING

Build a sheet of grease-proof paper over the plan and bend all wire parts to shape before commencing construction. IT IS MOST IMPORTANT THAT ALL FORMERS IN THE FUSELAGE ARE CEMENTED IN AN UPRIGHT POSITION AS SHEWN IN FUSELAGE SIDE VIEW. Build up the fuselage and wings over the plan following the sequence of construction given in the sketches. Carefully sandpaper the balsa wood structure before covering with tissue.

Covering

Cover the Model with the tissue supplied using office paste or clear dope as an adhesive.

Wings. Cut the tissue to approximate shape leaving a 3/8" margin all round. Do not attempt to get it drumtight but aim at getting an even surface, with no deep wrinkles. When dry trim off excess and cover the top side.

Fuselage. Cover this with long strips covering one bay at a time and gradually working round until complete.

Then cover fin and tailplane applying adhesive to edges and pulling tissue over and trimming off excess. Before applying clear dope lightly spray or brush each item with water, pinning wing and tailplane down on a flat board to prevent warping. When thoroughly dry apply a thin coat of clear shrinking dope to each part, pinning wing, tailplane and fin down on to a flat board covered with greaseproof paper to prevent sticking. When dry give fuselage two more thin coats of dope and the wing one. (If Model is to be used for flying do not use colour dope unless sprayed on thinly.)

Soldering

Clean parts to be soldered with glasspaper, then apply flux to parts to be joined. Heat up soldering iron and clean tip with file; dip in small container of flux and apply solder on to end of iron, then apply iron to joint until solder flows round it. When set wipe off excess flux to prevent rusting.

Motor

This is composed of two 9" elastic bands which are supplied. Lubricate them with Frog Rubber Lubricant or Castor Oil, and insert them into the fuselage with the help of a length of wire or thread. Bend a hook at one end of the wire and insert it into the front end of the fuselage. (If a thread is being used, tie a weight to one end and drop it through.) Hook the bands on to it through the opening at the rear and insert the rear motor pin (cane) through the holes in the fuselage and through the loops of elastic. Pull the bands out through the front, and hook them on to the airscrew shaft (complete with Aircscrew). The model is now complete and ready for flying. A drop of thin oil on the airscrew shaft will improve the running.

Flying

This model is intended to be flown out of doors, but choose a very calm day for your first test.

The model should balance level when held on the fingertips at X-X positions on wing. Small pieces of plasticine should be added to nose or tail until balance is correct.

Test glide the model to check the balance. Hand launch it in a slight downward direction. If it dives add weight to the rear of fuselage; if it climbs sharply and drops back on tail (this is called stalling) add weight to the nose.

When the glide seems satisfactory put a few turns on the motor and launch the model into wind (if any). The turn can be adjusted by bending the fin. Increase the turns on the motor gradually, up to a maximum of approximately 300; if the motor is not lubricated, the turns must be limited to 150. An unlubricated motor will wear and break very quickly. Stretching the elastic while winding will enable more turns to be obtained.

If model stalls under power, cement a thin strip of balsa between top of nose plug and nose block.

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