

BY KEN HOLDEN

SHRIKE COMMANDER

An exciting twin-engine version of Bob Hoover's aerobatic exhibition airplane designed for two .049's and a three channel radio.

Bob Hoover's flight demonstrations in his Rockwell Shrike Commander are truly amazing and I have longed to build a small RC version of this airplane. A year ago I saw Dan McCann's fabulous model that subsequently won the Nationals Scale event at Lake Charles and knew that I had to give it a try. My son and I have been flying various .049 powered creations for the last couple of years, so two .049's and the Ace foam wing seemed the easiest way to go, not to mention the most economical. The overall covering is white Solarfilm with green and black MonoKote trim colors and numbers. The finished weight of the airplane is only 2½ pounds.

The Shrike is easy to build and just as easy to fly. The lack of throttle control is really no problem. The loss of either engine causes only a reduction of speed

with no loss of control or stability. Rudder trim quickly corrects the slight wing drop on the dead engine side. The Shrike will easily maintain altitude and even climb on only one engine. One engine always quits before the other so I have gained considerable experience with single engine flight. The Shrike will even loop and roll on one engine. I have deliberately forced spins with only one engine and had no problem recovering. What more can I say? Build it!

CONSTRUCTION

The wing is made from a pair of tapered Ace foam wing panels and two 6" sections of a constant chord Ace foam wing panel. I am sure Ace would ship this as a set as it is the same as their "2T" trainer wing set. Epoxy a 6" section of the constant chord wing to each of the tapered panels on a flat

surface with the panels upside down. The top surface will be straight. Then join the combined panels with epoxy, blocking one wing tip up 2" for dihedral. Add the 3/16" filler strip at the root and the 1/16" x 3/16" trailing edge strip. Make the aileron torque rods but do not make the 90° bend for the ailerons until after the engine nacelles are epoxied in place. Epoxy on the torque rods and the TE stock filler and nylon bolt reinforcements. Before adding the nacelles, apply the strapping tape to the underside of the wing from tip to tip. The engine nacelles are simply built up from 1/8" balsa with the plywood motor mount and landing gear mount acting as bulkheads. The 1/8" wire gear should be bound to the mount before installation. Leave off the top of the nacelles until after the fuel tanks are installed. Slide the nacelles on to the

wing and epoxy in place. Cut away part of the foam wing for the fuel tank, install the tanks, and finish sheeting the nacelles.

Lay out the two fuselage sides and glue down the 1/4" square framing and epoxy on the maple wing mount blocks and 1/8" balsa doublers. The two fuselage sides are joined by 1/4" square crosspieces starting with the cabin area. Glue on the noseblock and pull the tail together and glue. Add the remainder of the cross pieces. Epoxy in the 1/8" plywood for the wing hold-down dowel. Bend the 1/8" piano wire nose gear and bind and epoxy to the plywood gear mount and epoxy into the fuselage. Add all of the top and bottom sheeting and sand the fuselage to final shape.

Cut out the rudder and stabilizer from 3/16" sheet balsa and sand them to a smooth symmetrical airfoil shape. Cut

the stabilizer in half and re-join with epoxy after blocking up one tip 2½" for stabilizer dihedral. Epoxy the joined stabilizer to the fuselage and then epoxy the rudder in place.

Give the entire airplane a final sanding with very fine sandpaper and cover with Flite Kote, Solarfilm, or Top Cote. These are the only iron-on materials that can be safely used over the foam wings without melting them. Keep the radio installation well forward in order to obtain the correct CG. The radio installation shown is for the RS System which is a very light weight unit that adds to the lightness of the plane. The spinners used are from Cox UC Sport Trainers.

Even with two engines this airplane only uses two ounces of fuel per flight. That is saving energy. Think about it! □



RIGHT: Interior view of Shrike Commander fuselage showing rudder and elevator servos with pushrods attached. Note wing hold-down blocks.

SHRIKE COMMANDER

Designed By: Ken Holden

TYPE AIRCRAFT

Sport/Stand-Off Scale

WINGSPAN

49½ Inches

WING CHORD

6¾" Root — 4⅝" Tip

TOTAL WING AREA

275 Square Inches

WING LOCATION

High Wing

AIRFOIL

Semi-Symmetrical

WING PLANFORM

Double Taper

DIHEDRAL, EACH TIP

1 Inch

O.A. FUSELAGE LENGTH

36¾ Inches

RADIO COMPARTMENT AREA

(L) 9½" X (W) 2½" X (H) 3"

STABILIZER SPAN

16 Inches

STABILIZER CHORD (incl. elev.)

3½ Inches (Avg.)

STABILIZER AREA

55 Square Inches

STAB AIRFOIL SECTION

Flat

STABILIZER LOCATION

Top of Fuselage

STABILIZER DIHEDRAL

1/4" Each Tip

VERTICAL FIN HEIGHT

6¼ Inches

VERTICAL FIN WIDTH (incl. rudder)

3¾" (Avg.)

REC. ENGINE SIZE

(2) .049 — .051

FUEL TANK SIZE

(2) 1 Ounce

LANDING GEAR

Tricycle

REC. NO. OF CHANNELS

3

CONTROL FUNCTIONS

Rudder, Elevator & Ailerons

BASIC MATERIALS USED IN CONSTRUCTION

Fuselage Balsa and Ply

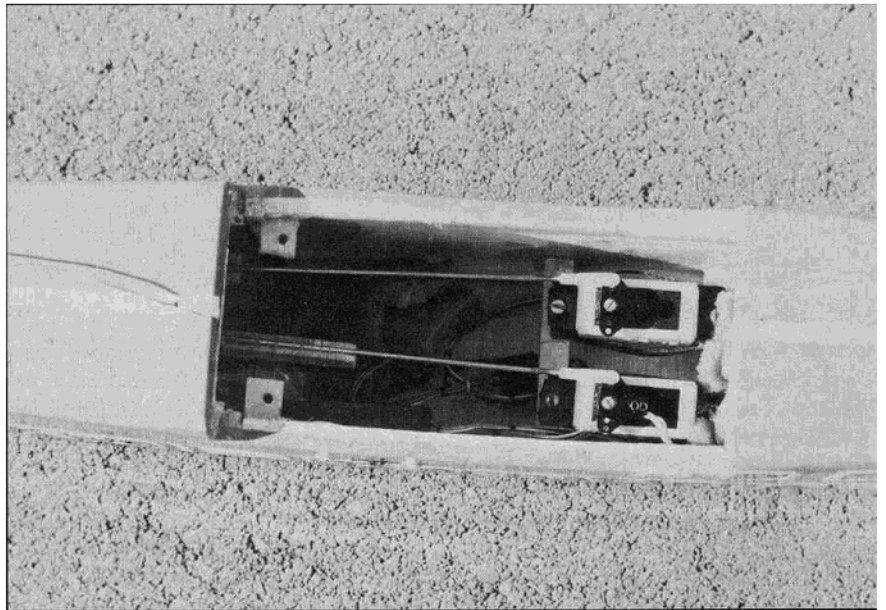
Wing Foam and Balsa

Empennage Balsa

Weight Ready-To-Fly 40 Oz.

Wing Loading 21 Oz/Sq. Ft.

ABOVE: The Ace foam wing removed, showing aileron servo installation. .049 engine nacelles, and landing gear. RIGHT: The completed Shrike Commander - - an easy introduction into twin engine aircraft.



From RCModeler May 1976