½A Cessna SKYLANE
SEMI-SCALE MODEL KIT G23, FOR .049 ENGINES
FOR SINGLE CHANNEL R/C— ESCAPEMENT, SERVO, OR PULSE also FREE FLIGHT
SPAN 42" LENGTH 35" AREA 244 sq. in. WEIGHT 22 oz.
Designed and drawn by: Carl Goldberg Ron Pawlowski F.C. McVickar
ORIGINAL MODEL BUILT AND FLOWN BY RON PAWLOWSKI
CARL GOLDBERG MODELS INC. CHICAGO, ILLINOIS
NO NOTCH AT CENTER
LEAVE 1/8" UNCUT
1/8" BALSA LEADING EDGE JOINERS
1/16" PLYWOOD STRUT SOCKET
3/16" BALSA TAPERED SPAR
CUTTING GUIDE LINES
1st CUT
2ND CUT
1/16" TRAILING EDGE JOINERS TOP AND BOTTOM
SHAPED LEADING EDGE
SHAPED TRAILING EDGE
1/8" GUSSET
TIP SECTION
SOFT BALSA TIP
LEAVE 1/8" OF LEADING EDGE UNCUT
WING ASSEMBLY
1 Pin trailing edge over plan as shown. Use 1/4" wood to shim up guide block so that block is parallel to table and make 2 cuts EXACTLY over cutting guide lines. Pre-cement joint, then apply second coat and pin outer section in final position over plan.
PLAN
GUIDE BLOCK
PINS
1/4" WOOD
REMOVE "V"
2 Using 1/8" scrap as depth gauge, cut leading edge part way through at notch where it bends. Cement ribs #3, #6, #8 and #11 to trailing edge. Place 1/20" shims as shown and cement leading edge to ribs.
1/8" SCRAP
LEAVE 1/8" UNCUT
1/20" SHIMS FROM 3/8" X 9" STRIP SUPPLIED
1/20" SHIMS
LINE-UP NOTCHES WITH PLAN
3 Position 1/16" plywood strut socket. Add lower leading and trailing edge joiners, rib #7, then upper leading and trailing edge joiners.
1/8" LEADING EDGE JOINERS
RIB #7
SCRAP FILLER (SEE STEP 4)
1/16" PLYWOOD STRUT SOCKET
1/16" TRAILING EDGE JOINERS
4 Cement remaining ribs and 1/8" gussets in place. Carve wing tip block to rough shape and cement. Use pins to back up ribs and slip spar into position (note dihedral angle on spar).
"TACK CEMENT" TEMPORARY SANDING GAUGES
NOTE ANGLE
TIP BLOCK
REMOVE GAUGES
1/16" PLYWOOD JOINER
1/8" JOINERS
1/8" GUSSETS
#1 RIBS
Precement all joining surfaces. Assemble braces to one wing panel, then add the other.
JOINING WING HALVES WITH DIHEDRAL LET DRY OVERNIGHT
BOOKS
4 1/4" TO BOTTOM OF TIP RIB
5 Rest sanding block on spar as shown and carefully sand dihedral angle on leading and trailing edges 'til they match angle on gauges. Remove gauges and join wing halves with dihedral. Let dry over night.
ADD 1/16" CENTER SHEETING TOP AND BOTTOM
NYLON
NYLON WRAP AROUND
6 Cement center sheeting in place. Add nylon reinforcement tape in all places indicated on main plan views.
REMOVE PROTRUSION
7 Sand entire wing smooth and finish as described in covering procedure.
8 Sand hardwood struts to section shown in side view. Cut vinyl tubing to size given. After doping struts fasten tubing in place with 2 loops of tag wire or vinyl cement such as DAB.
TUBING IS FORCED INTO SLOT IN PLYWOOD SOCKETS AND HOLDS STRUTS BY FRICTION
PROCEDURE
Pre-cement all highly stressed points, such as wing center joints, engine mount and landing gear joints, and joints of sheet balsa fuselage.
The proper technique is as follows: Coat both joining areas with cement, rub into the wood surface and let dry. Next coat these areas generously with cement and join using light clamping, or applying weights on laminated areas. We recommend you use only high grade model cement for most joints, and white glue (Elmer's, Wilhold, etc.) for laminating fuselage doublers.
COVERING
1. Silk is an excellent all purpose covering for R/C models of this size. However, nylon and heavy grades of model paper may also be used.
2. The best adhesive is clear nitrate dope, but clear butyrate dope will do, although it dries slower.
3. All surfaces, whether sheet balsa or framework, should be covered. Use the following procedure:
a. Sand all surfaces to a smooth contour and finish.
b. Give entire structure two coats of clear dope, full strength. Sand each coat lightly when dry using very fine sandpaper. This seals structure and makes covering easier.
c. Cut silk slightly oversize, allowing an extra inch at all sides to help in handling. Cut 4 pieces for wing, 5 for fuselage (2 for top), and 2 each for rudder and stabilizer. Wet one piece and lay gently in place, pulling out all wrinkles. Apply dope over silk in a band about 1/2" wide along the short edge (on the wing this would be at the root). Gently rub this dope through silk with thumb or finger. Stretch silk moderately over structure, working out all wrinkles. If silk begins to dry before you're finished, apply more water with soft brush or spray. Pull silk gently across its width and along its length to work out wrinkles, doping edges down as you go. Apply dope right over silk and gently rub it through with your finger. When you have worked down to the tip, apply dope along it to complete the job. Trim excess silk with razor blade or scissors, and dope loose edges down.
d. Use thinned clear butyrate dope (50-50) for finishing. This will penetrate the silk and bond it to the balsa. Apply 4 coats, letting each dry about two hours. Now apply as many coats full strenght dope as necessary to thoroughly fill the pores of the silk. Avoid tail heaviness. Silk may be sanded between coats of dope but sand lightly with the finest grade of sandpaper available (#400 Wet or dry or finer).
4. Colored dope (butyrate) trim may now be applied. Mask off areas to be colored and apply thin coats until desired color is obtained.
5. Dope areas around the tank and engine with several extra coats of colored dope to prevent fuel and oil penetration of the wood framework.
OPTIONAL DU BRO KWIK LINK
RUDDER HORN
PUSHROD
1/8" PLYWOOD SERVO BOARD
SINGLE CHANNEL SERVO INSTALLATION (ROYAL PRODUCTS SERVO SHOWN)
TRIM PLYWOOD MAIN GEAR BRACES FLUSH WITH BLOCKS - GLUE SERVO BOARD TO TOP OF BLOCKS
USE OF BATTERY BOX IS RECOMMENDED SUCH AS DU BRO #2 PC
SINGLE POLE, SINGLE THROW SWITCH
ANTENNA
RECEIVER
ESCAPEMENT
WHITE BLUE, OR YELLOW
RED
BLACK
3 PIN PLUG (USE PART OF LARGER CONNECTOR)
TYPICAL SINGLE CHANNEL WIRING DIAGRAM
AIR BALANCE
1/8" PLYWOOD
1/8" BALSA
SINGLE CHANNEL PULSE PROPORTIONAL INSTALLATION (ADAMS ACTUATOR SHOWN)
CONTROL SURFACE OUTLINES - USE 1/32" BLACK TAPE
NYLON TOP AND BOTTOM
1/16" PLYWOOD JOINER
1/8" JOINER
NYLON ON TOP AND BOTTOM
1/16" CENTER SHEETING TOP AND BOTTOM
1/8" GUSSETS
FUSELAGE ASSEMBLY
1/16" DIA. WIRE PREVENTS TAG WIRE PULLING THROUGH FIREWALL - USE AT THIS LOCATION ONLY
1/16" DIA. WIRE
DRILL 1/8" HOLES
TAG WIRE
BLIND NUT (NOT FURNISHED)
TWIST ENDS
3 LOOPS 2-1/2"
4 LOOPS 3"
FORMED LANDING GEARS
PLYWOOD MAIN GEAR BRACES
1/16" PLYWOOD
NOTE: BRACES ON REAR
1/16" FUSELAGE SIDES ASSEMBLE OVER PLAN
B1 B2- 1/16" PLYWOOD B3 B5 B6
FIN
3/32" BALSA
DORSAL
USE MASKING OR FREEZER TAPE TO HOLD PARTS WHILE DRYING
1/16" BALSA
NOTCH FOR NOSE GEAR
BATTERY COMPARTMENT
1 PRE-ASSEMBLY Assemble parts on flat surface. Drill 1/8" engine holes and install blind nuts. Drill 1/16" holes and sew nose gear on with tag wire. Use 4 loops at coil, 3 at top of gear. Join fuselage sides over plan for proper alignment.
PINS
TRIM
1/16" DOUBLERS
CORRUGATED CARDBOARD
WEIGHTS
1/8"
MAKE EDGES FLUSH
1/8" BALSA
TRIANGLE
WEIGHT
TEMPORARY: 3 LAYERS CARDBOARD TO DISTRIBUTE PRESSURE
FUSELAGE SIDE
TABLE
MAKE 1 LEFT SIDE & 1 RIGHT SIDE
2 Cement triangle strips flush with edges of sides. IMPORTANT: Make left and right sides. Be sure bottom rear strip is 16" long. Cut corrugated cardboard to fit temporarily between strips to distribute pressure until doublers are dry. Three layers needed to prevent weights resting on strips. Add other parts shown. Spread white glue such as Elmer's or Wilhold evenly on mating surfaces. Sprinkle a few grains of sand (from coarse sandpaper) between parts to prevent sliding when weight is applied. Pile on weights to squeeze out excess glue. Then take off weights, remove excess glue from notches, etc. Replace weights.
1/8" BRACE
1/16" PLYWOOD
1/8" PLYWOOD
1/8" BALSA TRIPLER
USE FIREWALL TO LOCATE TRIPLER
PLYWOOD CABIN SIDES
3 Add cabin sides and braces using white glue. Locate tripler against firewall, and flush with lower edge of doubler. Remove firewall and apply weights again as in step 2 until dry. While drying, check alignment to prevent slippage. Complete strut slots in 1/16" plywood through doubler and tripler.
Make all joints with high grade model airplane cement or white glue such as Elmer's or Wilhold. For broad areas, "Contact Cements" (such as Borden's, Wilhold, Weldwood, etc.) save time. Avoid water-soluble types. Follow manufacturers instructions. Try on scrap balsa. Use tissue paper to prevent contact until parts are perfectly positioned.
ENGINES TO USE
All half-A .049 engines are suitable, and may be mounted directly to the firewall, or beam-mounted if necessary.
COX GOLDEN BEE SHOWN
1 1/4" DIA. SPINNER
6" DIA. - 3" PITCH PROP
3/8" SQ. BALSA
BEND 1/16" WIRE BRACE TO MATCH PLAN
2-1/2" TO LEADING EDGE
Ship performs well with C. G. (center of gravity) anywhere from 2-1/8" to 2-13/16" behind leading edge. Adjust stabilizer for good glide.
SAND STRUT TO THIS CROSS SECTION
IMPORTANT: TACK CEMENT OR PIN SLIDE IN PLACE
ON OFF
SLACK TO RECEIVER
BLACK
WHITE
RED
RED STRIPE
TRIANGULAR STRIP
1/4" SQ. BALSA TORQUE ROD
THIN INSULATED ANTENNA WIRE (USUALLY SUPPLIED WITH RECEIVER)
TIE RESTRAINING KNOT INSIDE
5/16" TRIANGLE FILLET
1/8" DOWEL
NYLON
CESSNA
3/8" x 3/4" NYLON HINGE
SMALL RUBBER BAND
MAKE HOOK FROM PIN
UP FOR MORE TURN
DOWN FOR LESS TURN
1/32" WIRE
CEMENT SCRAP FILLET FROM STABILIZER TRAILING EDGE TO UNDER SIDE OF STABILIZER
Correct stabilizer incidence (per prototype) for C.G. shown.
WIRE SKID (OPTIONAL)
TYPICAL RECOMMENDED R/C EQUIPMENT
RECEIVERS
F & M Vanguard (Superhet), Pioneer, Etc.
CONTROLAIRE SH-100 (Superhet), 4 SR, 5 SR R/LESS, Etc.
MIN-X Sportmaster, Capri, Etc.
C & S Humming Bird, Lark, Finch, Etc.
KRAFT K3VK, Etc.
ESCAPEMENTS
CITIZEN-SHIP SE-2
BONNER SN
BABCOCK Mark II-V
ECKTRONICS Translator
If necessary, write receiver manufacturer regarding suitable transmitter.
DU-BRO #2PC Battery Box
3/32" FORMED NOSE GEAR
1 1/2" WHEEL (#64 PERFECT OR SIMILAR) (NOT FURNISHED)
TRIANGLE STRIPS JOIN HERE
1 3/4" AIRWHEELS (#69 PERFECT OR SIMILAR) (NOT FURNISHED)
FUSELAGE TOP REAR
1/8" FILLER
1/16" STAB PLATFORM (AFTER TORQUE ROD INSTALLATION)
TABS FOR CENTERING BETWEEN FUSELAGE SIDES
1/8" PLY DISC
1/8" PLY CABIN FORMER
1/4" GUSSET
1/8" TOP FRONT
3/8" SQ. BRACE
3/8" CHEEK BLOCKS
BATTERY COMPARTMENT
1/16" BALSA FUSELAGE BOTTOM
B4 TEMPORARY
DIE CUT FILLERS
BOTTOM FRONT SHEETING
4 A. Join fuselage sides with all formers. Lay fuselage upside down over top view to check alignment.
B. Add fuselage top rear, then B5-B6.
C. TEMPORARILY tack cement B4 in place.
D. Slip battery compartment in place through bottom of fuselage.
E. Add bottom front sheeting.
F. Use white glue to secure 3/16" dowels, top cabin formers, and gussets. Add remaining parts.
5 Glue paper to both sides of 1/8" balsa sanding gauge. Carve and sand fuselage to final shape, checking with gauge. Finish-sand flat areas with large, flat sanding block.
SANDING GAUGE
B4 TEMPORARY
MARK BLOCK
CUT NOTCH 1/16" DEEP
TRIM OFF 1/16"
6 Cut 1/16" off pointed edge of landing gear block so angle rests flush against triangle strip. Temporarily position block and mark location of main gear at notch in B4. Remove block. Carve notch 1/16" deep.
Remove B4. Glue blocks and main gear assembly in place. Push temporary spreader between plywood braces and permanently replace B4. Cover entire fuselage (see covering procedure). Spreader may be removed.
3/8" x 3/4" NYLON HINGE
FIN
RUDDER
EYELETS
THREAD
TRIANGLE FILLET
1/16" PLYWOOD SLIDE RAILS
EYELET
WRAP NYLON COMPLETELY AROUND FUSELAGE
RUBBER
ESCAPEMENT
1/8" PLYWOOD REAR UPPER SLIDE
TORQUE ROD
1/8" BALSA REAR LOWER SLIDE
7 Cement one small eyelet in rear lower slide, one behind rear window for antenna, and the long one in torque rod hole at rear of fuselage. Be sure to put an eyelet on front of torque rod before bending loop. To install torque rod, drop a threaded needle through rear hole. Cement thread to rear end of torque rod wire and draw back through hole.
Torque rod must swing freely. With slides in place, cement slide rails to fuselage. Add rudder to fin and mount with triangle fillets. Solder eyelets at front and rear of torque rod to limit end travel to about 1/16".
PAINT INSTRUMENT PANEL MED. GREY
DECAL
1/16" BALSA FILLER NOTE TAPER
PAINT FLAT BLACK
8 Paint former #2 flat black below instrument panel. Paint instrument panel medium grey. When dry apply decal and cement panel to former #2. Cement 1/16" balsa filler to plywood cabin former. Taper as shown to fit dihedral of wing.
Install 1/16" wire cabin brace
PAINT MED. GREY
TAPE
9 Temporarily position front windshield. Paint area shown medium grey. Cement front windshield in place, using tape to pull into position. Then cement side windows and rear.
STUFF SPONGE BEHIND BATTERY BOX TO HOLD IT IN
RUBBER BAND HOLDS RECEIVER IN PLACE
SPONGE
RECEIVER
1/8" PLYWOOD
ESCAPEMENT
WIRE HOOK
TAIL ASSEMBLY
S1 PLATFORM RIB
S2
S3
S4 PLATFORM RIB
S5
1/8" GUSSET
1/4" x 5/16" LEADING EDGE
ASSEMBLE TIPS
SCOTCH TAPE ON BOTH SIDES WHILE BUILDING
1/8" x 1/4" SPAR
SHAPED TRAILING EDGE
NOTE: JOINER RESTS ON PLATFORM - TRAILING EDGE IS ON TABLE
PIN HERE
NOTE: TRAILING EDGE RESTS ON PLATFORM
TIP IS UP FROM TABLE
1/16" CENTER SHEETING
1/8" JOINER
1/16" CENTER SHEETING TOP AND BOTTOM
REMOVE PLATFORMS
REMOVE TABS - DO NOT NOTCH SHEETING
SCOTCH TAPE ON BOTH SIDES WHILE BUILDING
ONE OF OUR NEW "SYMMET-TRU" CONSTRUCTION METHODS (NOW WIDELY IMITATED). DETACHABLE PLATFORMS KEEP STRUCTURE TRUE ON TABLE.
YOUR REPORTS WANTED
Modelers often have ideas for improvements. We will be happy to hear from you by post card or letter on:
1. Your suggestions.
2. What you like best about our models.
3. What three new models you'd most like to see us bring out.
Be sure to include your name, age, and address so we can reply and thank you.
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Edit by Hlsat.