STEP I
1 - ASSEMBLE CONE BASIC FRAME ON DRAWING
2 - INSTALL TANKS ON
3 - REMOVE FROM PLAN & ADD OPPOSITE HALF OF FORMERS
4 - INSTALL FIREWALL AND MOUNT RODS
F-8 IN PLACE

CONE FRAME

STEP II
1. ASSEMBLE FUSELAGE BASIC FRAME ON DRAWING
2. REMOVE FROM PLAN & ADD OPPOSITE HALF OF FORMERS
3. INSTALL FIREWALL AND MOUNT RODS F-8 IN PLACE

FUSELAGE FRAME

BASIC FRAME ASSEMBLY DETAILS

STEP III
1. SLIDE RIBS ON SPARS
2) GLUE RIBS ON PLAN
3. ADD LEADING & TRAILING EDGES
4. REMOVE WING FROM PLAN & ASSEMBLE SECOND WING PANEL

WING FRAME

STEP IV
1 - FIT TAIL PARTS & W-1G FRAME
2 - COVER ONE SIDE WITH PAPER PANELS
3 - CEMENT CONE MOUNG IN PLACE
4 - ASSEMBLE STRAIGHTENING VANES OF 3/4, 2/3 AND 2½, AND SAND SMOOTH WHEN DRY
5 - PAINT CORE WITH 3 COATS FUEL-PROOF DOPE

ASSEMBLY DETAILS

STEP V
1 - CEMENT DUCT FORMERS D-1, D-2, D-3, D-4 TO WING FRAME
2 - CEMENT DUCT TOP
3 - CEMENT STUFF PAPER DUCT PANELS TO FRAME
4 - SLIDE CONE ASSEMBLY INTO SLOTS IN WING PANELS.
CEMENT TO FIREWALL MOTOR MOUNT GUSSET, BUT DO NOT CEMENT CONE TO WING PANELS OR DUCT. INSERT PLYWOOD DISC IN DUCT TO HOLD OPENING ROUND
5 - CEMENT VANES INTO FRAME

STEP VI
1 - LEVEL UP WING ASSEMBLY BY BLOCKING UNDERTIPS (SHIMS), 1/16" UNDER W-5, SLIDE 1/16" SHIM UNDER D-17
2 - TRIM FUSELAGE SECTION WITH 1/8" SCRAP
3 - CEMENT FUSELAGE TO WING, USING TOP & BOTTOM OF FUSELAGE AS GUIDE, AS SHOWN ON SIDE VIEW
4 - CEMENT INTAKE LOCATING PADS (L-G), DUCT TO MOTOR MOUNT WITH PLYWOOD PADS AND TRIM WITH 1/16" & 1/8" STRIPS AND COVER WITH PAPER PANELS
5 - COVER WING LEADING EDGES WITH 1/20" SHEET
6 - ADD TRAILING EDGE AND SAND WING TO SHAPE
7 - MOUNT ENGINE ON BEARERS, TACK CEMENT BEVELLED SECTIONS TOGETHER, IF TWO PIECE BEARERS ARE USED
8 - LET DUCT PLYWOOD DISC TO ENGINE, SLIDE ENGINE IN PLACE AND CEMENT BEARERS TO SPACERS

9 - CEMENT PLYWOOD GUSSET TO BEARERS
11 - SLIDE BEARERS WITH GUSSETS "IN"
12 - DRILL THROUGH BEARERS FOR BOLTS
13 - CEMENT BEARERS TO FIREWALL, NOTICE CLEARANCE
14 - FIT SHEET BALSA PANELS TO FUSELAGE AND DUCT EXTERIOR

STEP VII
1 - ASSEMBLE LANDING GEAR ON DRAWING
2 - INSTALL IN FUSELAGE
3 - ASSEMBLE TAIL SURFACES
4 - HINGE RUDDER AND ELEVATOR
5 - ASSEMBLE TAIL BRACE WIRES
6 - ASSEMBLE WING BRACE WIRES
7 - ASSEMBLE PROPELLER
8 - ASSEMBLE SPINNER
9 - ASSEMBLE MOTOR
10 - ASSEMBLE RADIO
11 - ASSEMBLE MOTOR CONTROL
12 - ASSEMBLE FUEL TANK
13 - ASSEMBLE FUEL LINES
14 - ASSEMBLE PUSHROD
15 - ASSEMBLE ENGINE MOUNT
16 - ASSEMBLE WHEELS
17 - ASSEMBLE WHEEL PANTS
18 - ASSEMBLE CANOPY
19 - ASSEMBLE CANOPY HOLD-DOWN
20 - ASSEMBLE ANTENNA
21 - ASSEMBLE ANTENNA MOUNT
22 - ASSEMBLE ANTENNA WIRE
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SECTION H-H
SECTION G-G
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
TOP VIEW
CONE BASIC FRAME
MAIN GEAR
NOSE GEAR
FRONT VIEW
SIDE VIEW
DETAIL A
MONOLINE CONTROL SYSTEM

"SKYRAY" NO. 11
1 1/16" X 19 7/8"
1 REQ.

"SKYRAY"
SHEET NO. 4
4 REQ.
1/16" X 5" X 10"

"SKYRAY" SHEET NO. 1
1 REQ. 1/16" X 2" X 16 1/2"

W-1F 2 REQ.

W-1G 2 REQ.

"SKYRAY"
SHEET NO. 3
1/16" X 5" X 20"

"SKYRAY"
SHEET NO. 2
1/16" X 5" X 20"

1/8" PLYWOOD

1/8" PLYWOOD

DOUGLAS SKY-RAY F4D-1
FREE-FLIGHT CONTROLINE

DESIGNED AND DRAWN BY: HERVEY STRUCK	FREE-FLIGHT WEIGHT: 10 1/2 OZ.
KIT ENGINEERED BY: BILL BYRINGER	CONTROLINE WEIGHT: 11 1/2 OZ.
FULL SIZE PLANS	FOR .049 ENGINES 1/4" = 1" SCALE
EFFECTIVE WING AREA: 280 SQ. IN.	LONG. NO. 1076 KIT NO. K-10

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PAPANAVY

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