NOTES FROM THE TWO VIDEOS:

cg=16" from nose, Will verified this, it IS IN FRONT OF THE WING LE !!!
EDF LE = 1/2" forward of front bulkhead
Tail side of fuse14.5" height 2.25" 7.5" to the angle start to the tail
3"W 6" long is the bottom of that tail
Wire the 2200 mah batteries in parallel

EDF Units:
60P-70MM-EDF-Combo $47.41 (55 with ESC & 4 servos)
http://www.hobbypartz.com/60p-70mm-edf-combo.html

Battery options
1 of these - http://www.hobbypartz.com/77p-sl2200-...
OR
2 of these - http://www.hobbypartz.com/77p-sl1600-...
OR
2 of these - http://www.hobbypartz.com/83p-1300mah...

Plane weight
With single 2200mah bat - 1260 grams
With 2 1600mah bats - 1378 grams (49 oz.)
With 2 1300mah bats - 1294 grams
Airframe w/ all electronics but no battery - 1014 gram

From scratch build:
Use Dollar Tree foam board, peel off paper (D.Bacon used 6mm Depron)
Glue spar to the bottom sheet, then add top sheet.
Glue it to the spar, then curve the LE with two yardsticks to clamp it.

Designed by Will of MikeysRC.com

Drawn by Dave Bacon, FlynWolverines.com dbacon@flynwolverines.com

Wing Top Skin
15 1/4" x 24 1/2"

Wing
33 ½" x 23 1/2"

NOTE:
All angled pieces
need to be beveled
as shown

Mount horn
about 2 ½"
from the end
of the aileron

2 1/2"

cut top skin and mount
servo against the lower
skin of the wing.
Mount it just behind the spar

13 3/4"

Bulkheads BHT1 & BHT2

8 1/4"

10 1/2"

24 "

Add a servo extension
and fish the wires through
the wing to the equipment
bay in the center.

13 3/4"

8 1/4"

Bulkhead BHT3
4" wide x 2 3/4: tall

Air Outlet
both sides

Horizontal
Stab & Elevator
26" x 6 1/2"

Front Wing Half Rear Wing Half

Nose of EDF is 1/4" forward of front bulkhead

Cockpit side (2) =11" long on top,
15 1/4" on the bottom, and 3 1/2" wide

70 mm EDF Jets
Thrust tube made by wrapping 3mm foam 10" x 9 1/2"
around a heated 3" domestic water heater chimney pipe.

4 1/2" x 3/4" gusset (2)

Wing Inner Back Piece

Fuse Top Front is
8 5/8" wide on bottom,
5" wide on top & 5 1/2" long

Fuse Mid Top Panel, 11" long x 5" wide
Cut out hatch 10 1/2" x 4" after mounting it.

Rx

Fuse Upper Rear Side 22 ½" long x 2 3/4" wide

BHT1

Battery

BHT2

Access hole
cut in top wing skin
for aileron servo wires

BHT3

Fuse Top Sub-Wing
8" Long, 10" wide in back,
4" wide in front

Fuse Top Rear Panel
9 3/4" long x 4" wide

Nose piece is 3" wide x 8" long

ESC #1

ESC #2

1 1/2"
7 "
11 1/2"
16 "
16 3/4"
22 1/2"

Top View

Rudder servo mounted through the top panel, in the centerline of the fuse
it will use pull-pull cables back to the rudder.

Two elevator servos mounted through the side panels, as high as possible,
will also use pull-pull cables.

Bill Of Materials:

HobbyPartz.com has a package of:
(4) Servos specs 9g Servo DY-100
Coreless Motor, All Nylon Gear, Connector Wire Length 170MM
23*12*26.5mm Speed (4.8V no load): 0.12sec/60 degrees, Torque (4.8V): 1.6 kg/cm

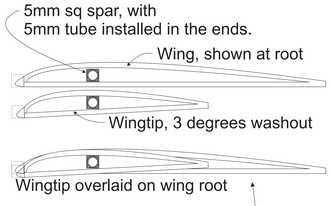
(1) ESC 60A Item:DYE-1006
(includes BEC) Size(mm): 52 x 25 x 8 33g: 60A

(1) Ducted Fan w/ Brushless Motor 70mm Size Kv (rpm/v) 3000 Weight (g) 159

Order (2) of these Power systems (above) at:
http://www.hobbypartz.com/60p-70mm-edf-combo.html?gclid=CLiZ17i8p7cCFUVyQgod8j4AFg

(2) 70mm EDF's
(2) 60 amp ESC's
(5) 9 gram servos (you will have three left from your HobbyPartz order.)
(10') Dacron thread for Pull-Pull control of elevators, rudder.
(8) Light weight nylon horns (Use 2 for pull-pull rudder and each elevator, 1 for each aileron)
(2) 2-56 threaded rod for aileron control, and matching 2-56 nylon clevises
(1) "Y" adaptor for two ESCs, with one red wire snipped, so one ESC supplies power to Rx
(1) "Y" adaptor for two elevator servos
(1) "Y" adaptor (Optional) if both aileron servos are paralleled. Omit if they are used as flaperons, as one will plug in to the "aux" channel on the Rx.
(1) Rx
(1) 5mm square CF Hobby King #CFS6 (Center of wing spar)
(4) 5mm round thin wall CF tube HK #CF4 (ends of wing spar, hinges on rudder, elev, hatch, ailerons)
(4) 3mm round #CF tube HK #CF1 (LE of horiz stab, & wing), Aileron & Rudder hinges
(2) 1mm round #CF7 rod to protect LE of nose
(20) 1" pieces of tubing for hinges, must fit over 3mm CF tube, and must be CA "glue-able", drinking straws will work, usually (so test the glue first) and shrink tubing works.
(3) ½" pieces of the same tubing for the top hatch hinge
(7) 6mm x 11" x 31" Depron Foam (Grayson.com) GET BLACK and save a lot of painting!
(2) 3mm x 10" x 9 ½" Depron foam for the thrust tubes (Can use 6mm if you like...)
(6) Sockets to match the pins on the output of the EDF unit's wires. (I cut apart XT-60 connectors)
(6) Heatshrink tubing for these 6 sockets, above.
Magnets for top hatch TBD
Velcro for battery retention
Double-sided foam tape for Rx mount, wire hold-down, etc.
Lotsa glue: LocTite "Go-Glue" or foam safe CA. GG will not work for floats (it is porous, leaks),
But it is great for mounting servos, ESCs, motor mounting, etc.
(1) 2650mah 3 cell lipo battery High "C" rating like 40 or better.
1/4" Square balsa for Wing LE
Light wallboard filler
Water-based spray paint (Unless you found black Depron...)

D.Bacon's build steps are noted to the right on this page, and the real build thread is on Will's forum at:
http://mikeysrc.com/rc-forum/showthread.php?6582-SCI-Fi-Jet-Building-Thread



SUGGESTED BUILD PROCEDURE:
1. Join all 6 wing parts (Not the upper skin yet) on a flat surface.
2. Add all 3 upper fuse bulkheads as per measurements back from the nose. And add fuse top front.
3. Add spar assy (29 ½" x 5mm square tube "CFS6"), with two 11" x 5mm round "CF3" ends sanded to fit into the square tube and extend wingtip to wingtip. Prop up the wingtips by 1/4" to make very slight dihedral, and let the glue dry.
4. Make entire bottom fuse assy for below the wing, beveling the edges of the side pieces to fit. When dry, sand on a large flat sheet of sandpaper taped to the bench top.
5. Build Cockpit with 3 bulkheads and top sheet on top of wing assy, position according to measurements back from the nose.
6. Built the nose piece, top and sides, optionally, add a window and prepare a pilot figure to stare forward in horror while you fly.
7. Assemble the upper rear fuse sides with the tail boom bottom front, and rear, use a square to insure alignment of 90 degrees between the plane across the front of those fuse sides and the plane along the sides.
8. Glue the upper rear fuse assy on the wing, add the Sub-Wing, and the top rear fuse panel. Make very sure it is aligned well with the centerline of the plane.
9. Cut approx 4 5/8" x 1 7/8" out of the wing upper skins to clear the upper fuse sides, and glue the TE and glue along the spar. Run a jig-jag glue pattern where the ailerons will be cut out. The LE of the upper skin will be bent down to meet the lower skin later after this glue cures.
10. Be sure all seams in the bottom float are sealed water-tight,, and glue this assy on the bottom. Can't use Gorilla Glue here, it is porous, like Sponge Bob.
11. Glue the assembled horizontal stab & elevator in place, make sure it is properly aligned by measuring from each tip to the nose of the plane.
12 Cut the elevators and ailerons free from the stab and wing, and apply the hinges by threading the 1" tubing on the 5mm CF tube, and gluing the 1" tubing to the wing, and to the horiz stab. Use 5 on each side of the wing and 3 on each side of the horiz stab. after cured, cut clearance on the control surface (aileron, elevator) for the tubing glued to the wing (or horiz stab) and glue the 5mm CF tube to the control surface. (See Figure 1, Hinges, below)
13. Add hinges to the rudder in a similar manner, using 3 1" tubes on the vertical stab, and the 7" CF tube on the rudder. Use the last 1" tube in the bottom of the fuse, where the CF tube extends, so that the rotating CF tube can rotate freely, and later be used to operate a water rudder on a 3mm CF extension, hanging down from the rudder's pivoting tube.
14. Drill a hole where the rudder hinge post will go through the fuse and glue the last piece of hinge tubing in it. Then glue the rudder (assembled) and that goofy rear vertical stab behind it. Align it perfectly or it will suck. A sharpened brass tube makes a good foam drill.(See details to the left)
15. With the plane upside down, glue the LE pieces together, bending the upper sheet to meet the lower sheet, and prop up the leading edge about 1/4" at the wingtip to form some washout in the wing tip, which will make it fly slow with much less chance of a tip stall resulting in a snap roll, (not good during landing).
16. Add the 1/4" square balsa leading edge to the wings, and sand them to have the same washout on both wings.
17. Add CF to all other leading edges as spelled out in the B.O.M.
18. Hinge the front of the hatch, on the top panel, same way, use 3 tubes ½" long. Add magnets.
19. Roll the 3mm foam into 10" long tubes over a warm 3" stovepipe (Maybe your hot water heater...) Seam them with a 7" x 1/2"strip of 3 mm Depron inside the tube flush with one end. Glue them into the recess of the EDF units, after cutting slots to clear the two "ears" on the EDF units. Cut holes in the sides of these tubes to fish the short wires out, and line them up with the upper fuse sides and cut matching holes. Glue the EDF units in place, add gussets, but not above the holes for the wires, as you will need to use longnose pliers to hold these wires when plugging in the wires from the ESCs. Don't forget you must solder the connectors to the ESC wires, and add heat-shrink for insulation. You may have to swap two of the wires if the EDF units blow rather than suck.
20. Mount all 5 servos as show on the drawings, Gorilla Glue works good here. MIX GG WITH WATER to speed it up & reduce annoying expansion.
21. Make 3mm Depron coverplates for the servos in the wing, glue them down.
22. Sand the whole plane, use filler where needed, and paint with water based spray paint.
23. Hook up the pull-pull with Kevlar or steel cable, as neither one stretches. Hook up the ailerons, setup the radio.
24. Mount the ESCs on edge with GG right in the center, where air will flow through.
25. Cut the air inlets in the front, and use the cutout pieces like an upper door glued in place, see drawing.

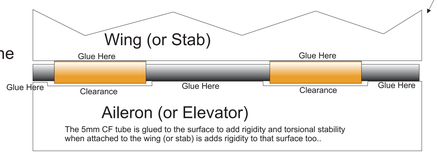


Figure 1, Hinges

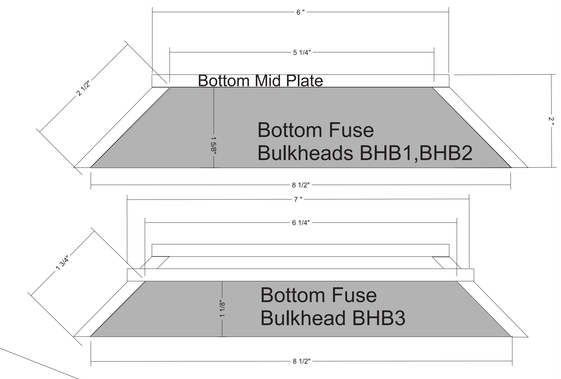
I made the bottom 6" wide not 3", and 8" long, not 9.5", as I wanted to ROW, and the added buoyancy will help. Also this puts a step 1" behind the CG to facilitate ROW (Rise Off Water).

Wing
33 ½" x 23 1/2"

Wingspan = 46"

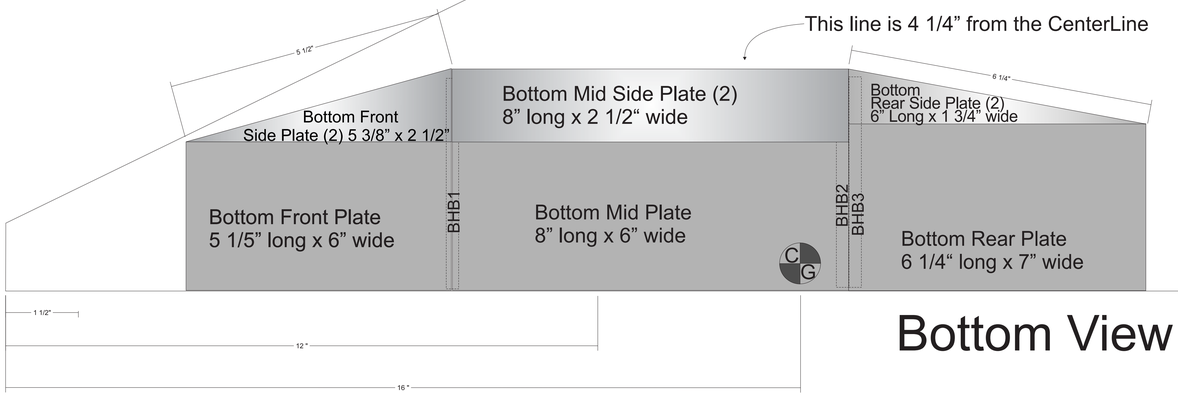
Ailerons 1.25" wide.

Elevator 1.25" wide



Horizontal
Stab & Elevator
26" x 6 1/2"

Length = 46.5"

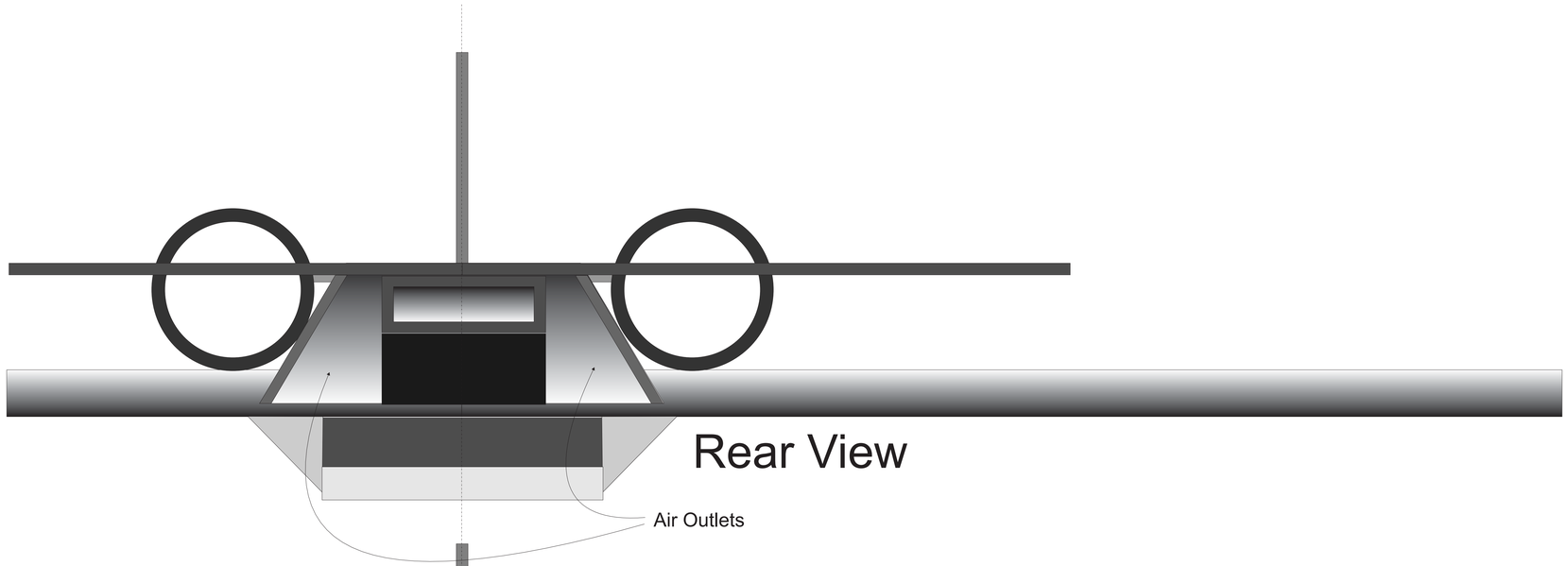


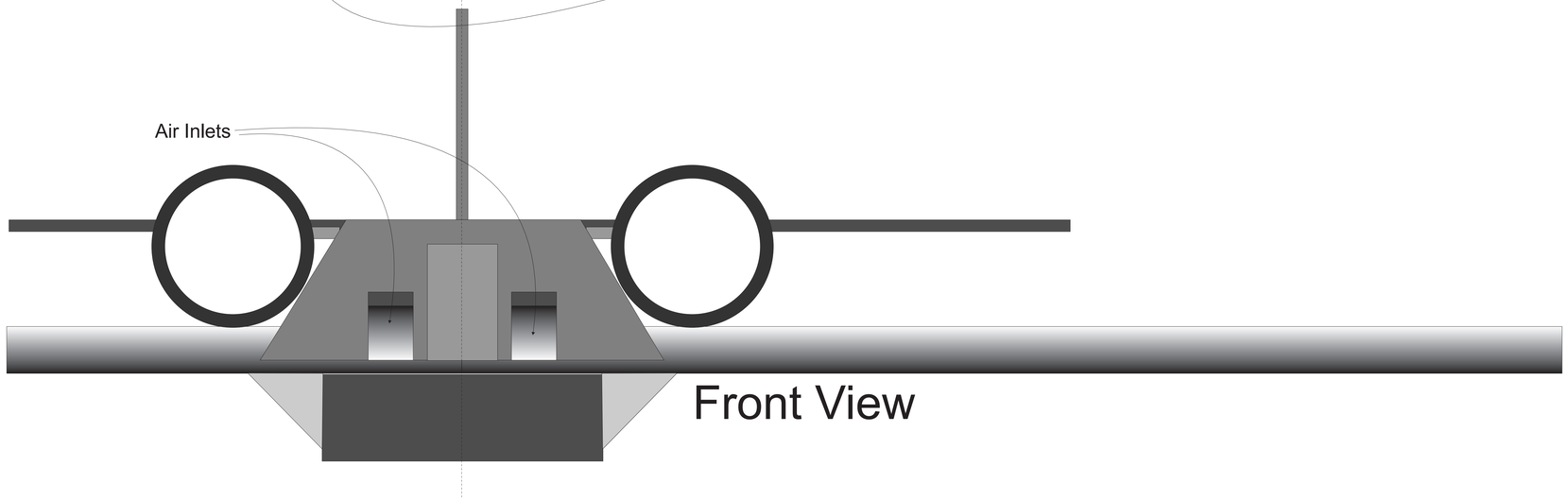
Water = 0.58 oz/Cu In
6" x 8" bottom float = 48 Cu In when submerged 2 inch. = 54 oz

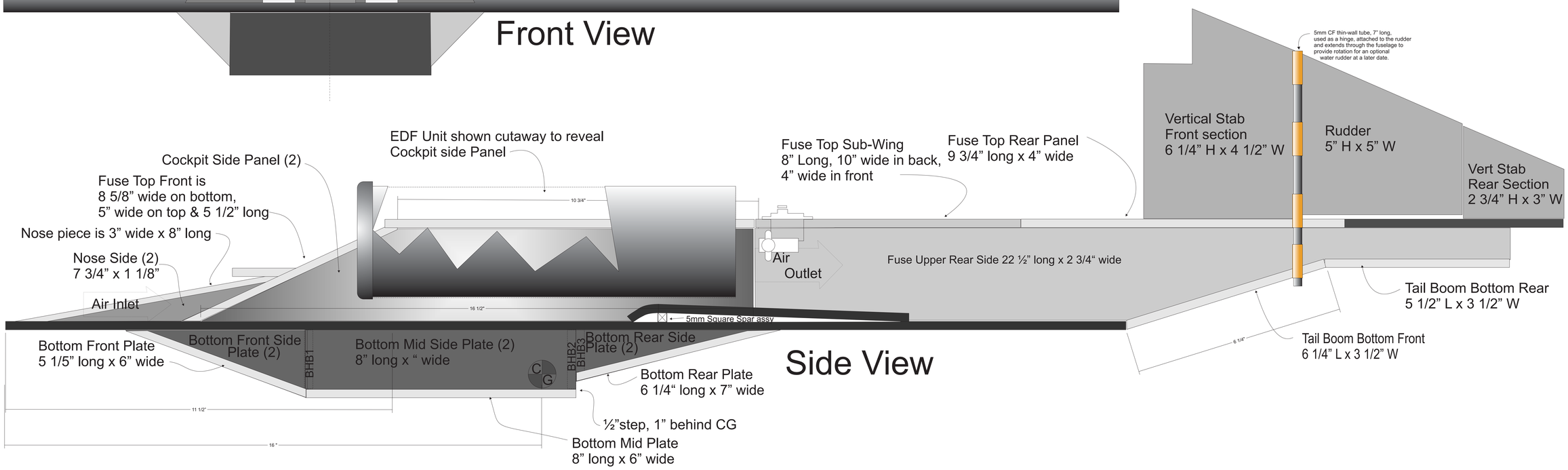
Tail Boom Bottom Front
6 1/4" L x 3 1/2" W

Tail Boom Bottom Rear
5 1/2" L x 3 1/2" W

Bottom View


Rear View
Air Outlets


Air Inlets
Front View


EDF Unit shown cutaway to reveal
Cockpit side Panel
Cockpit Side Panel (2)
Fuse Top Front is
8 5/8” wide on bottom,
5” wide on top & 5 1/2” long
Nose piece is 3” wide x 8” long
Nose Side (2)
7 3/4” x 1 1/8”
Air Inlet
10 3/4”
16 1/2”
Fuse Top Sub-Wing
8” Long, 10” wide in back,
4” wide in front
Fuse Top Rear Panel
9 3/4” long x 4” wide
Air
Outlet
Fuse Upper Rear Side 22 ½” long x 2 3/4“ wide
5mm CF thin-wall tube, 7” long,
used as a hinge, attached to the rudder
and extends through the fuselage to
provide rotation for an optional
water rudder at a later date.
Vertical Stab
Front section
6 1/4” H x 4 1/2” W
Rudder
5” H x 5” W
Vert Stab
Rear Section
2 3/4” H x 3” W
Tail Boom Bottom Rear
5 1/2” L x 3 1/2” W
5mm Square Spar assy
Bottom Front Plate
5 1/5” long x 6” wide
Bottom Front Side
Plate (2)
BHB1
Bottom Mid Side Plate (2)
8” long x “ wide
BHB2
BHB3
Bottom Rear Side
Plate (2)
C
G
Bottom Rear Plate
6 1/4“ long x 7” wide
6 1/4”
Tail Boom Bottom Front
6 1/4” L x 3 1/2” W
11 1/2”
16 “
½”step, 1” behind CG
Bottom Mid Plate
8” long x 6” wide
Side View

Bulkheads BHT1 & BHT2

Bottom Front
Side Plate (2) 5 3/8" x 2 1/2"

4 1/2" x 3/4" gusset (2)

4 1/2" x 3/4" gusset (2)

Bulkheads BHT1 & BHT2

Horizontal
Stab & Elevator
26" x 6 1/2"

Tail Boom Bottom Front
6 1/4" L x 3 1/2" W

Wing
Inner
Back Piece

Bottom
Rear Side Plate (2)
6" Long x 1 3/4" wide

Bottom
Rear Side Plate (2)
6" Long x 1 3/4" wide

Fuse Top Front is
8 5/8" wide on bottom,
5" wide on top & 5 1/2" long

Nose piece is 3" wide x 8" long

Bottom Fuse
Bulkhead BHB3

Vert Stab
Rear Section
2 3/4" H x 3" W

Fuse Top Sub-Wing
8" Long, 10" wide in back,
4" wide in front

Bottom Front
Side Plate (2) 5 3/8" x 2 1/2"

Front Wing Half

Front Wing Half

Vertical Stab
Front section
6 1/4" H x 4 1/2" W

Fuse Mid Top Panel
11" long x 5" wide

Wing
Inner
Back Piece

Wing
33 ½" x 23 1/2"

Bottom Fuse
Bulkheads BHB1,BHB2

Fuse Top Rear Panel
9 3/4" long x 4" wide

Bulkhead BHT3

4" wide x 2 3/4: tall

Bottom Front Plate
5 1/5" long x 6" wide

Rudder
5" H x 5" W

Wing
33 ½" x 23 1/2"

Bottom Fuse
Bulkheads BHB1,BHB2

10" x 31" by 6mm Depron Sheets

Page 1
1. Nose Piece
2. Wing Front half (L)
3. Wing Front Half (R)
4. Wing Back Half (L)
5. Wing Back Half (R)
6. Wing Inner Back Piece(L)
7. Wing Inner Back Piece (R)
8. Wing top Skin (L)
9. Wing top Skin (R)
10. (deleted)
11. (deleted)
12. Fuse Top Front
13. Fuse Mid Top Panel
14. Gusset (L)
15. Gusset (R)
16. Fuse Top Sub-Wing
17. Fuse Top Rear Panel
18. Bulkhead BHT1
19. Bulkhead BHT2
20. Bulkhead BHT3
21. Horiz Stab & Elev
22. Cockpit Side (L)
23. Cockpit Side (R)
24. Fuse Upper Rear Side (L)
25. Fuse Upper Rear Side (R)

Page 2
26. Bottom Front Plate
27. Bottom Mid Plate
28. Bottom Rear Plate
29. Bulkhead BHB1
30, Bulkhead BHB2
31. Bulkhead BHB3
32. Bottom Front Side Plate (L)
33. Bottom Front Side Plate (R)
34. Bottom Mid Side Plate (L)
35. Bottom Mid Side Plate (R)
36. Bottom Rear Side Plate (L)
37. Bottom Rear Side Plate (R)
38. Tail Boom Bottom Front
39. Tail Boom Bottom Rear

Page 3
40. Vert Stab, Front
41. Rudder
42. Vert Stab Rear
43. Thrust Tube (L)
44. Thrust Tube(R)
45. Nose piece (L)
46. Nose piece (R)

Cutout 4 5/8" x 1 7/8"
to clear Bulkhead BHT3
and upper fuse side

Wing Top Skin
15 1/4" x 24 1/2"

Tail Boom Bottom Rear
5 1/2" L x 3 1/2" W

Bottom Rear Plate
6 1/4" long x 7" wide

Wing Top Skin
15 1/4" x 24 1/2"

Cutout 4 5/8" x 1 7/8"
to clear Bulkhead BHT3
and upper fuse side

Bottom Mid Plate
8" long x 6" wide

Fuse Upper Rear Side 22 ½" long x 2 3/4" wide

Nose Side (2)
7 3/4" x 1 1/8"

Nose Side (2)
7 3/4" x 1 1/8"

Fuse Upper Rear Side 22 ½" long x 2 3/4" wide

Bottom Mid Side Plate (2)
8" long x 2 1/2" wide

Bottom Mid Side Plate (2)
8" long x 2 1/2" wide

Cockpit side (2) =11" long on top,
15 1/4" on the bottom, and 3 1/2" wide

3 1/2"

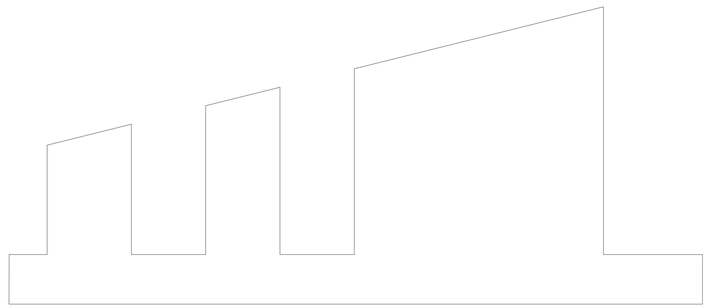
Cockpit side (2) =11" long on top,
15 1/4" on the bottom, and 3 1/2" wide

11"

Thrust tube (R)
3mm x 10" x 9 ½"
Roll it along the 9 ½" dimension
to give a 10" long tube 3 1/4" diameter

Thrust tube (L)
3mm x 10" x 9 ½"
Roll it along the 9 ½" dimension
to give a 10" long tube 3 1/4" diameter

(3) 10" x 31" by 6mm Depron Sheets and (1) 3mm Sheet



This is the insignia D. Bacon painted on the bottom for orientation, Will used a big whiter stripe, but I forgot to tape it off when I sprayed it black.