Bobs Card Models

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Canadair CL-415 (1:72)

The Bombardier 415 (formerly Canadair CL-415) is a Canadian amphibious aircraft purpose-built as a water bomber. It is the only aircraft designed and built specifically for aerial firefighting and is based on the company's CL-215. It is marketed in the USA as the Superscooper.

Building Instructions

Print all sheets on 160g card, with the exception of No. 3 (90g paper).
Bulkheads are labelled by letters A to K, all other parts are numbered.
All green areas and slits, must be cut out, but only when told to do so.

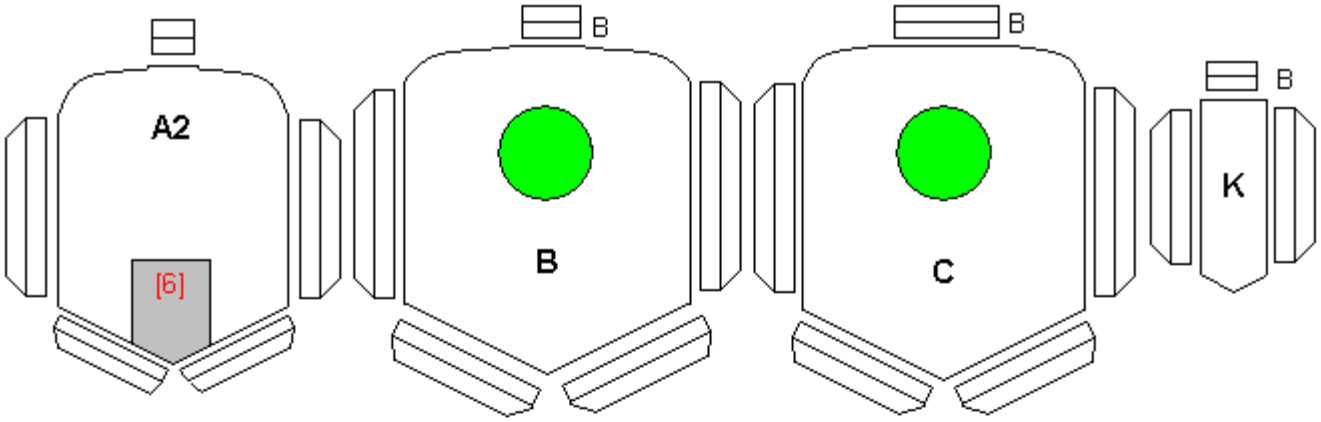
A: Fuselage

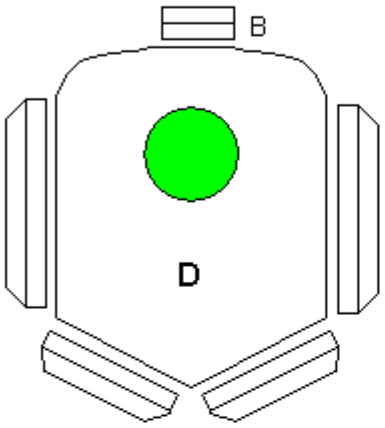
1. Cut out all bulk-heads A through K without the tabs, including the centre holes of B to I. Apart from bulkhead E, glue each onto (waste) card to give double strength, and when dry cut out again, including all centre holes. E is bent back and glued onto the grey card, and thus is also double-strength.
2. Cut out and glue all tabs (previously bent to shape - 90°) onto the bulk-heads, making careful note of on which side they should be glued, and in which direction they should be bent.
3. Bulkheads F and G must be glued together, H and I also.
4. Cut out from paper, the Central Horizontal Stabilising Rod **[1]** , and roll on a 6-8mm rod. Fix with elastic bands.
5. Cut out the 2 Fuselage Covers, bend and fold according to the plan (TIP: When cutting, include the position of all folds - after folding, these can be trimmed). Note that the folds on the fuselage top are rounded (use a ca 5mm rod or round pencil), those on the bottom fuselage relatively sharp. The top folds are 90°, the bottom ones to fit the bulkheads.
6. Join the front to the rear fuselage by gluing the 3 relevant tabs.
7. Fix long tabs along the whole length of the rear fuselage portion.
8. Insert the bulkheads B to HI along the rod **[I]**, position, but glue only FG and HI in position.
9. Insert the rod with bulkheads into the rear fuselage, so that FG is flush with the rear of the landing gear compartment. Note the position of bulkhead J with pencil, extract the rod **[I]** , and glue J in position.
10. Glue bulkhead K in position (half-way between J and tail of fuselage). NOTE: the sharpness of the tail end can be reduced by packing a 2-3mm thickness of waste card.
11. Close the rear fuselage bottom, by gluing it to all the longitudinal tabs.

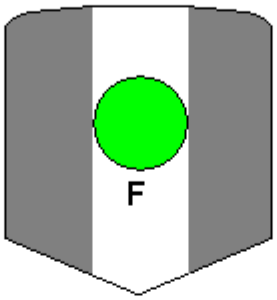
12. On rod **[1]**, put glue on all tabs of the bulkheads FG and HI. Insert the rod so far that bulkhead FG is flush with the rear of the landing gear compartment. Hold in place with rubber bands.
13. Glue tabs of bulkhead E with the top and sides of the front fuselage.
14. Before gluing E to **[1]**, make sure that the sides of the landing gear compartment between bulkheads E and FG are parallel - adjust E along the rod if necessary.
15. The floor **[3]** to the landing gear compartment is cut out and be glued on the 2 faces EF and GH, as well as the 2 bottom slopes, and inserted in the landing gear compartment.
16. Glue the tabs of bulkheads B, C, D to the top of the front fuselage, and also to the rod **[I]**.
17. Put glue on all side tabs of B, C, D, also a bead of glue to fix each bulkhead to the rod **[1]**, and close bottom of front fuselage with glue to the tabs provided. NOTE: Bulkhead B should not be quite flush with the front of the fuselage, but set back by 1-2mm (to permit later gluing of cockpit).
18. PHOTO 1: view of fuselage opened out.
19. Trim any overlap to the glued surfaces, to form a good finish to the fuselage.
20. **Fuselage front portion**: Cut out the Nose **[4]**, carefully bend (rounded) along the axis of the arrows, and bend the tabs inwards.
21. Insert bulkhead A2 flush with the CHSR and glue in place.
22. Cut out Landing Gear Compartment **[5],** form box structure by relevant bending, glue tab 'NOTE: the INSIDE of the box is grey.). Insert in fuselage front portion and glue onto marked area on A2.
23. Glue bulkhead A1 in place, and also onto box [6]. NOTE: It may be necessary to trim the height of bulkhead A1 to fit flush within the front fuselage sides.
24. In compartment just behind A2, add 10 gm weight to stabilise aircraft.
25. Cut out Nose Bottom **[6]**, fold and glue in place, trim card where necessary.
26. Trim the flaps to the landing gear compartment back to about 4-5mm, and cut off flush the front and back portions of the box flush with the fuselage bottom.
27. Trim all excess card.
28. Glue Nose to fuselage.
29. Cut out the Cockpit **[7]** , fold tabs and glue in place.
30. **Rear Fin:** Cut out slot on top of rear fuselage, to receive later the fixing bar of the fin.
31. Cut out fin **[8]**, bend back tabs and glue both halves together. When dry, cut out horizontal slits on both sides of fin. This will later receive the horizontal support of the rear wings.
32. Cut out upper strut **[9]** with slot for fixing bar and glue on waste card to give 2x thickness. Cut out again, glue on waste card. Cut again to give 3x thickness.
33. Cut out lower strut **[10]** and proceed as in 32. above.
34. Cut out fixing bar **[11]** and glue three times on waste card to give a final thickness of 4x.
35. Insert upper strut inside fin to lie flush with the lower edge of the horizontal cut-outs of the fin (you can insert waste card temporarily as backing). Bead of glue on the fixing bar and insert flush in the upper strut. When half-dry (better for manipulating to the correct angle), remove the waste card and insert the lower strut on the bar, put a bead of glue along its edges and push home to be flush with the lower edge of the fin. Glue the bar to the lower strut.
36. When dry, put glue on to the lower surface of the lower strut, and insert the wetly glued bar into the slit on the rear fuselage. Prior to this if necessary, cut the length of bar protruding so that the bar is as far down inside the fuselage as possible. The fin is now in place. Juggle a bit for a flush finish, with the fin truly parallel to the sides of the fuselage.
37. Cut our rear wings, bend back tabs on each and glue. Insert fixing bar **[11]** half-way into one of the wings and glue. When dry, insert in slit in the fin and glue in place. Fit the other rear wing on the other side likewise.
38. Cut out wing fins [**22]** , make 3x thick using the packing **[23]** . Insert on markings on rear wings.
39. Roughly cut out Fin 'Bulb' **[12]** , and glue on tab. Form around a pencil or rod of about 10mm diameter, glue tab. Form front end to a hemisphere and glue. Cut out all white areas. Glue in position marked on front of fin.
40. **Front wings :** Cut out both wings, and bend tabs. Cut out Stabilising Bar **[13]** , glue on waste card to fit wing struts (approx 6 - 7 x thickness). Cut out the 3x thick struts **[14]** and insert the struts (1 strut each on both ends of **[13]**, 2 in the middle the other 6 equally spaced along the bar).
41. Bend (rounded, not sharp) leading edge and glue using the long tab (do not glue end tab, this is for fixing the wing tip fins).
42. When dry, insert the bar + struts into the left wing, and glue. Same procedure for the right wing.
43. Cut out wing cradle **[33]**, glue the 4 corner tabs and the side tabs, add and glue the strengtheners under the lip, and glue cradle in position on the fuselage.
44. Glue the wing in position on the wing cradle.
45. Glue the cradle cover **[34**] in position, carefully positioning and gluing the 2 strips under each wing. Trim excess card.
46. Glue on both wing fin tips **[15]** .

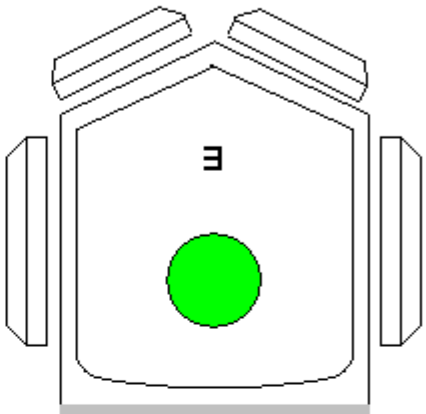
47. Glue on the spoilers **[28]** on each wing ¾ of the way to wing tips on the top of the wings 'position marked).
48. Cut out the 8 Aileron Hinges **[35]** and glue each on the underside of each wing on the positions marked.
49. **Engine Cowlings:** Cut out all parts for the left cowling, and bend back all tabs. Very carefully, round the upper pieces - this is difficult - use a ca. 3-5mm diameter rod, and using solely your finger under the piece, press the tip of the rod along the piece. It can help if you first moisten the parts to be bent. Glue all pieces. Glue base **[16]** in position on cowling **[18]** . Insert bulkheads **[19], [19A]** and **[20]** and glue in place. NOTE: **[19]** should not be flush with the front of the cowling, but set back about 1mm.
50. Cut, glue, cut and roll the exhaust pipe **[21]** , glue tab, insert and glue in position - should protrude about 7mm from the rear of the cowling.
51. Glue cowling top **[35**] over the cowling. Trim excess card.
52. Glue cowling in position on left-hand wing.
53. Repeat for the right-hand cowling.
54. **Landing Gear:** all four wheels should be formed by rolling the glued black strips around a pin.
55. Use 2mm cocktail sticks for stability; they can either be painted grey, or a sleeve of grey paper rolled around them (see sheet **3_paper.jpg**).
56. Front double-wheel: in the front landing gear box, pierce 2 holes using a pin, through the box and further through the fuselage nose under the cockpit (see diagram).
57. Cut the cocktail stick to size, and insert through the 2 hole. Glue amply in place.
58. For support, fix another cocktail stick (after cutting to size) as a diagonal to the first one (again piercing the landing gear box with a pin) and amply glue.
59. The two wheels are glued on either side of the lower tip of the cocktail stick. For more support, a pin at right-angles to the stick can be inserted, which acts as an axle to the two wheels.
60. Rear Landing gear: See the diagram. Each strut is composed of a top and bottom. Cut out the 4 struts **[24]**, pierce the 2 holes in each, and re-glue onto card to make a 5x thickness. Cut out. Insert the cocktail sticks, cut to size, and glue amply. Note the angles in the diagram, and that the top of the stick pierces the central horizontal stabilising rod **[1]** for stability.
61. **Propellers:** Cut out propellers **[25]**, and glue to give 3x thickness. Pierce centre with a pin, and expand hole to about 1mm diameter. This hole will accommodate the cocktail sticks.
62. Cut out hubs **[26]**, glue to a cone and when dry, cut out the 4 recesses which will accommodate the propeller. Insert propeller, glue, and finally glue on hub disc **[27]** . Insert cocktail stick and glue amply.
63. Pierce the engine cowling to accommodate the cocktail stick, push in the propeller/cocktail stick assembly.
64. Assemble and glue the wing floats. ....
65. Cut out the float **[29]**, Fold 90° the step at the rear of each float (2 short grey lines in red area).
67. 10 large tabs: bend the 6 blue tabs 90° down, the remaining 4 at about 20-30°.
68. Remaining small serrated tabs: bend all down.
69. 3 parallel folds - border yellow-red, red-red, red-yellow.
70. Glue all the small serrated tabs.
71. Close form by gluing the large tabs (EXCEPT THE BLUE TABS - these will be glued later to the float
72. Cut out the float supports **[31]** , glue in place (Note: the cross-section should be slightly rounded, and not flat).
73. Add the diagonal struts **[32]** for strength.
74. Cut out and attach the 3 radio masts **[33],** the nose tip **[4A]** and the nose radar **[34].**
75. Cut out, roll and glue the Rear Fin Light **[36].** Glue in place on the rear fin.
76. Cut out **[37]** for each wing, bend back tabs, glue tabs, glue in place under each engine cowling.
77. Photo 2: construction complete. Photo 3 shows details of the rear undercarriage.
78.

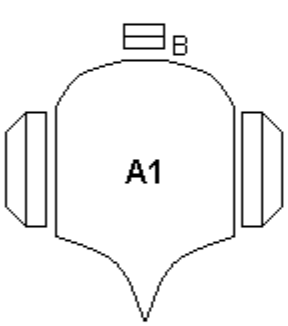
---oooOooo---

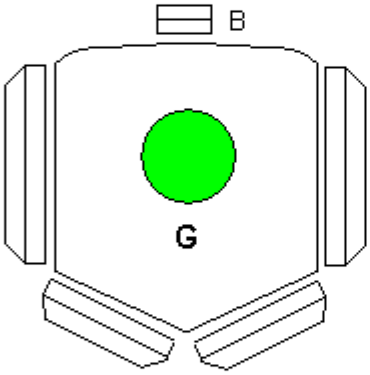


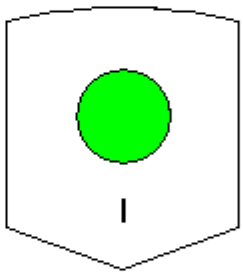


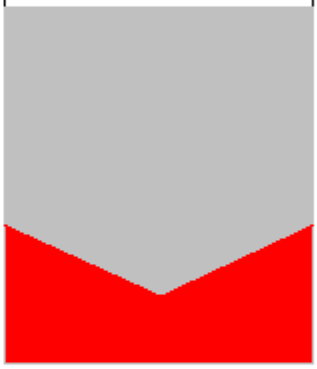


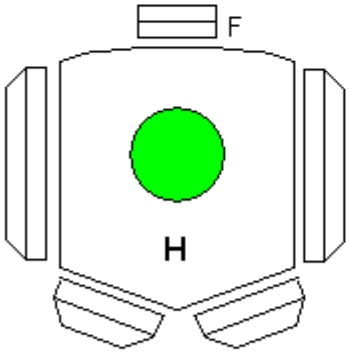


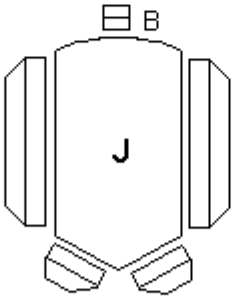


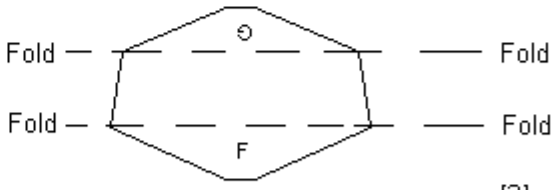










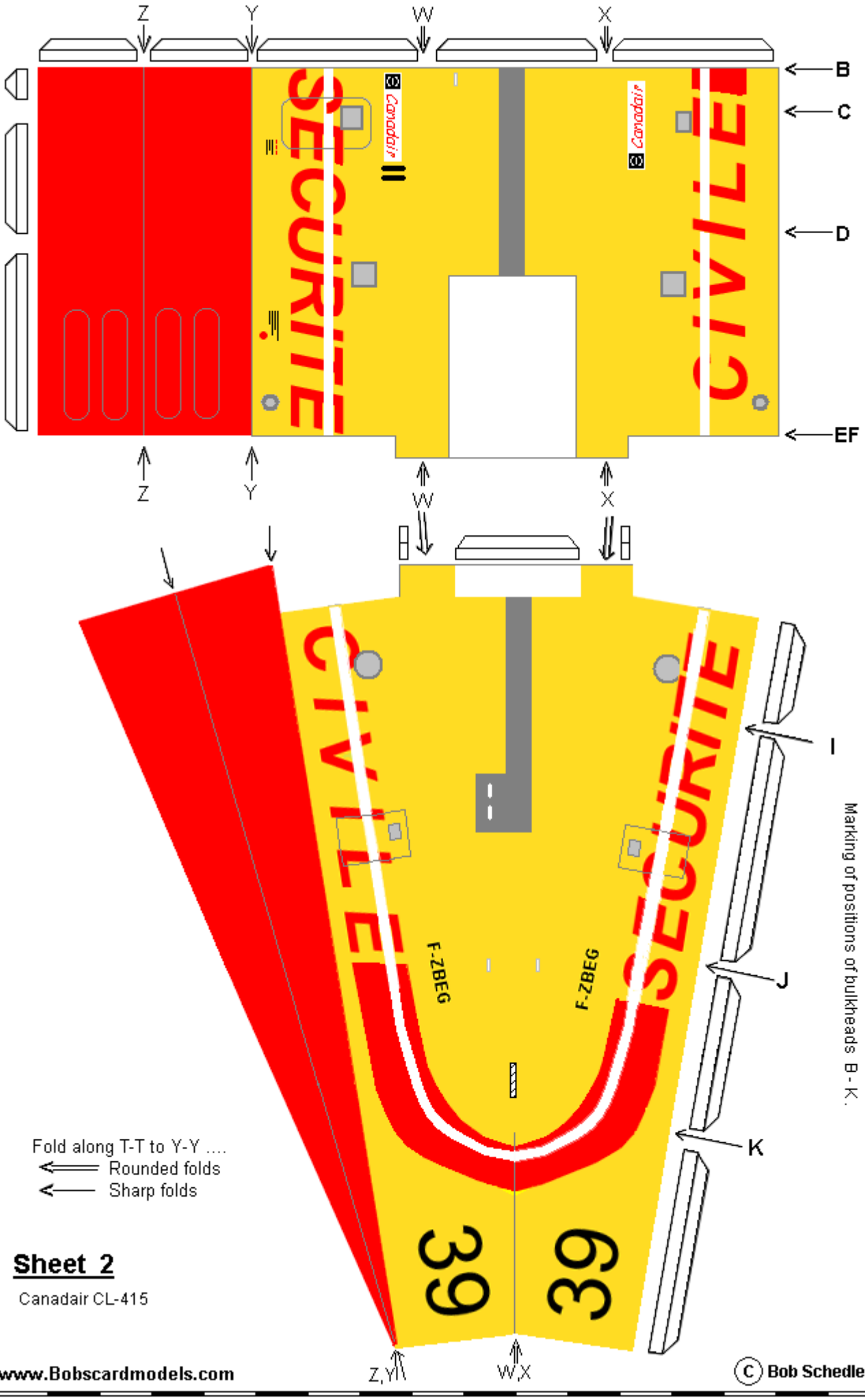


Landing Gear Compartment Floor [3]

The lettered sides of the bulkheads must face forward.
The F tabs must be glued to the lettered side of the bulkheads, the B tabs to the unlettered side.
Tab labels : bend F labels forwards, B labels backwards.
Parts A - K : Double thickness; glue each part on waste card, and cut out.

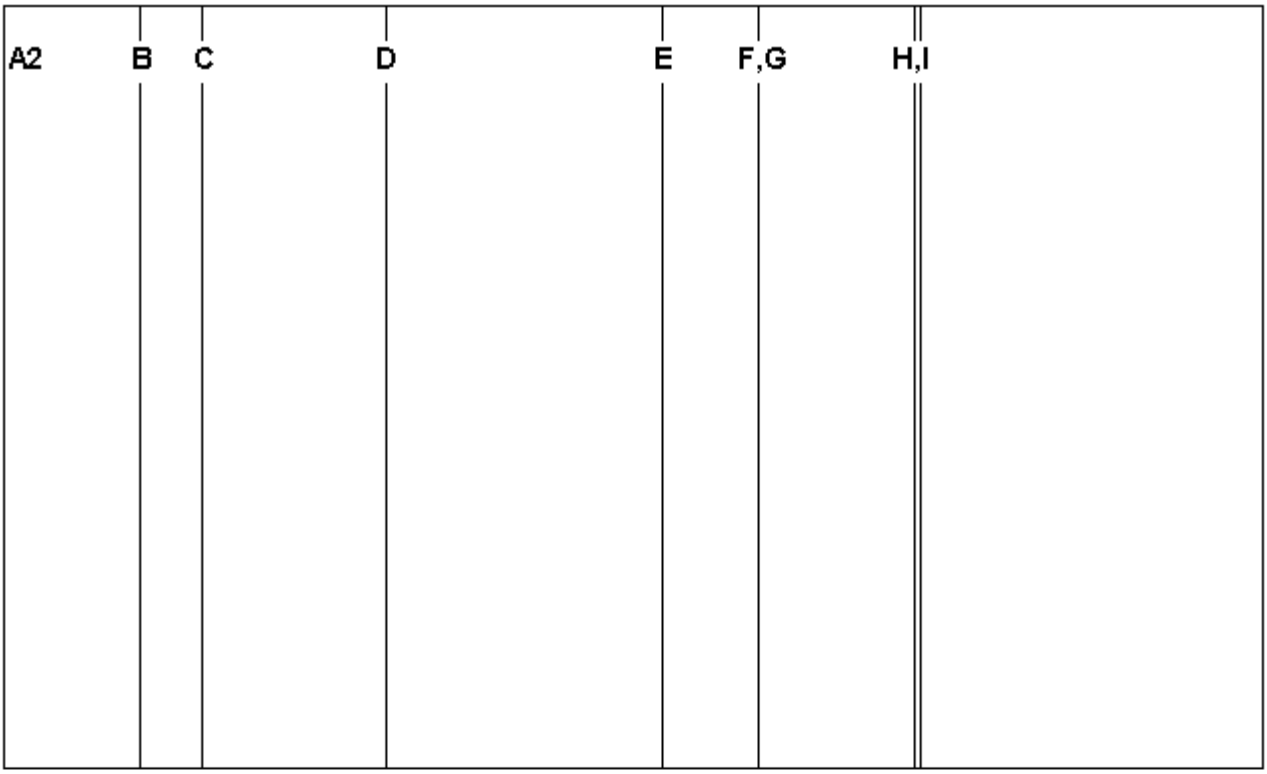
Sheet 1

Canadair CL-415



Sheet 2

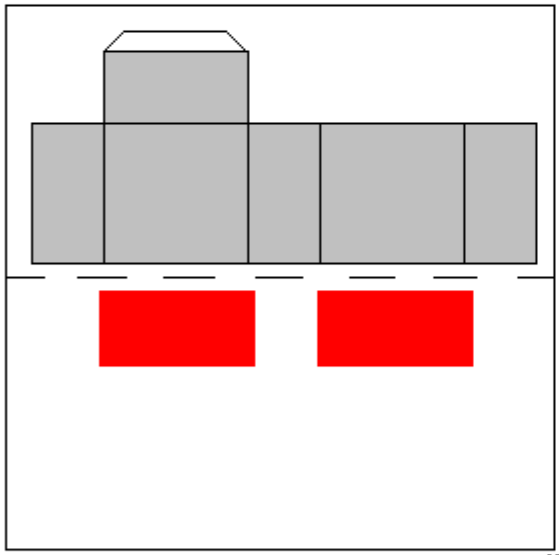
Canadair CL-415



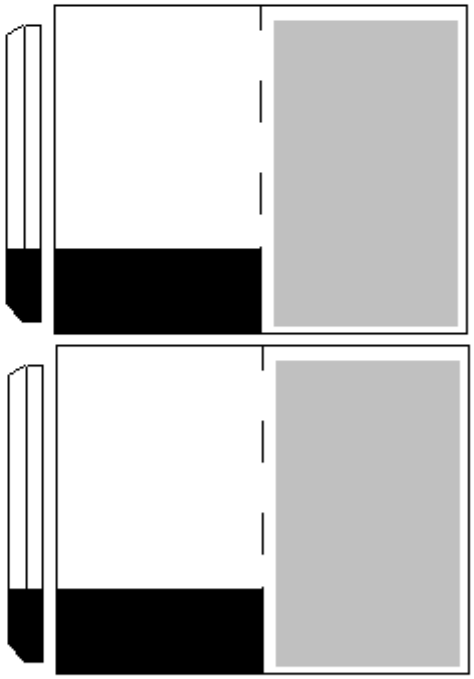
Central Horizontal Stabiliser Rod [1]

For attaching bulkheads B to J.

1. Fold and glue
2. Roll to tube



Nose Landing Gear Compartment with Flaps [5]



Engine Exhaust Pipes [21]

Engine Cowling Top x 2 [35]

[36]

Tail Fin Light

Roll and glue

Paper sleeves for cocktail sticks (roll around and glue)

PRINT ON PAPER

Sheet 3

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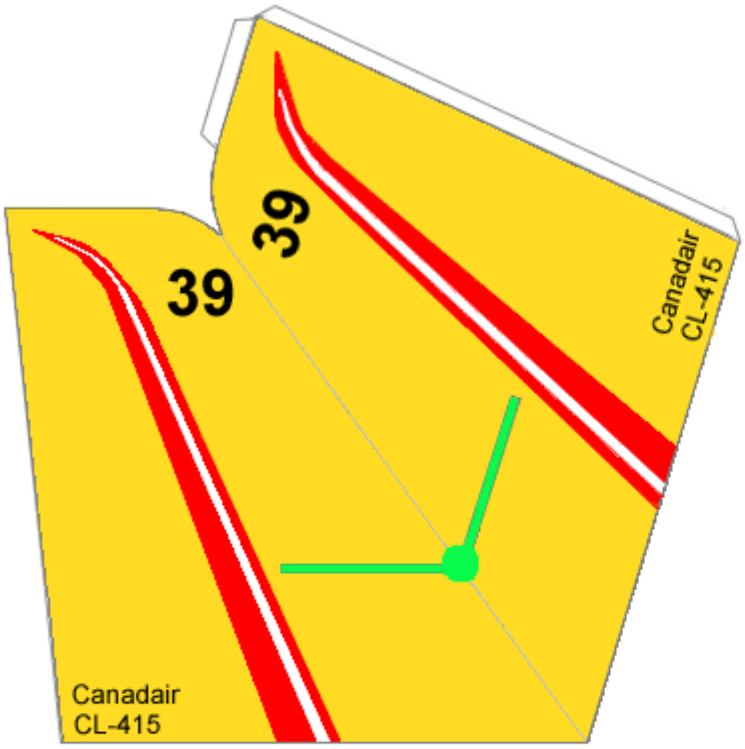
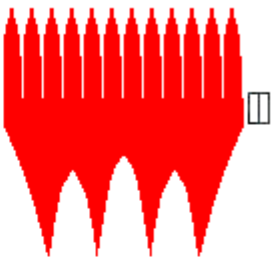
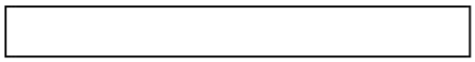




Fin Bulb [12]

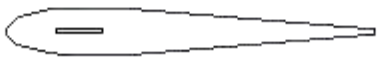


Fixing Bar [11]

Make 4x thick

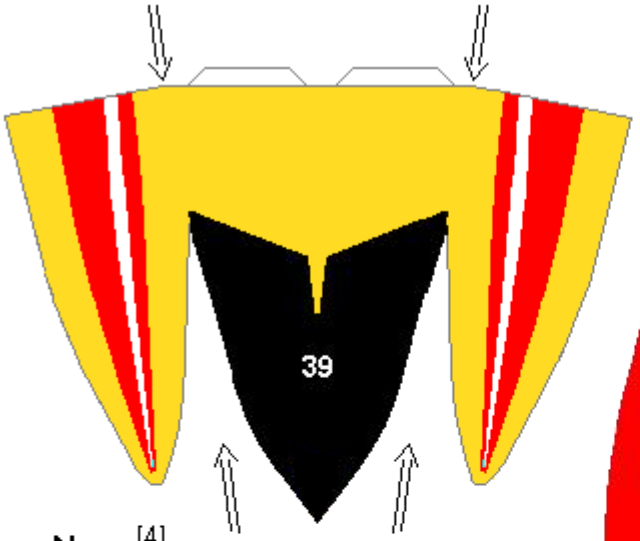
Lower Strut [10]

make 3x thick



Upper Strut [9]

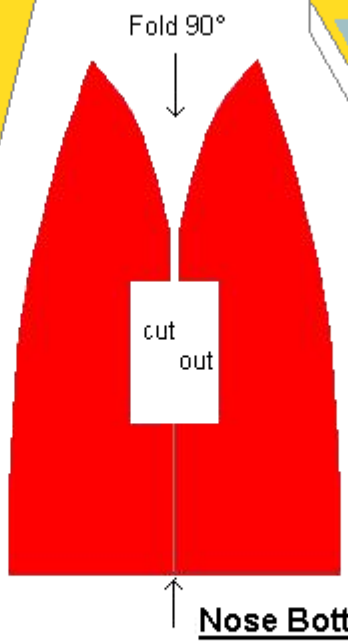
make 3x thick



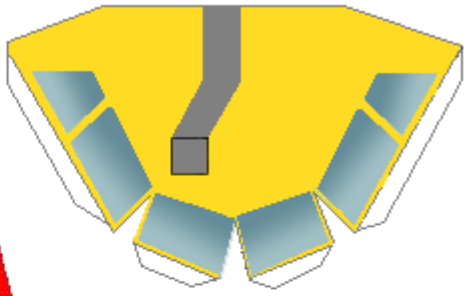
Nose [4]

[4A]

Nose Tip [4A]



Nose Bottom [6]



Cockpit [7]

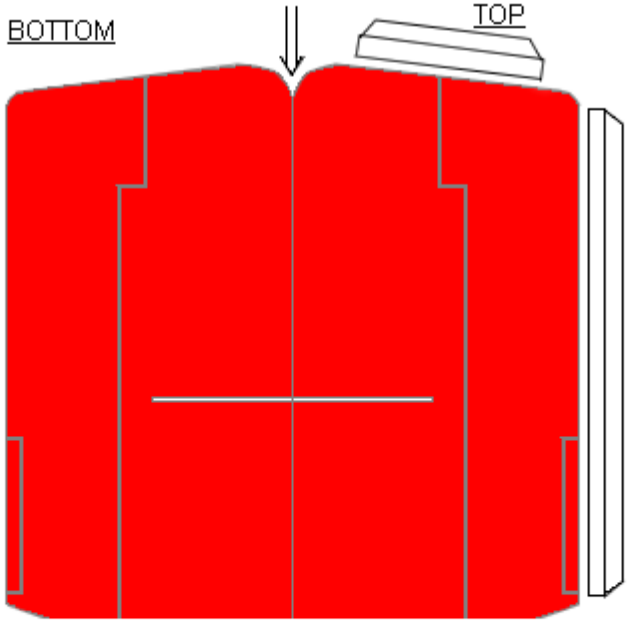
Sheet 4

Canadair CL-415

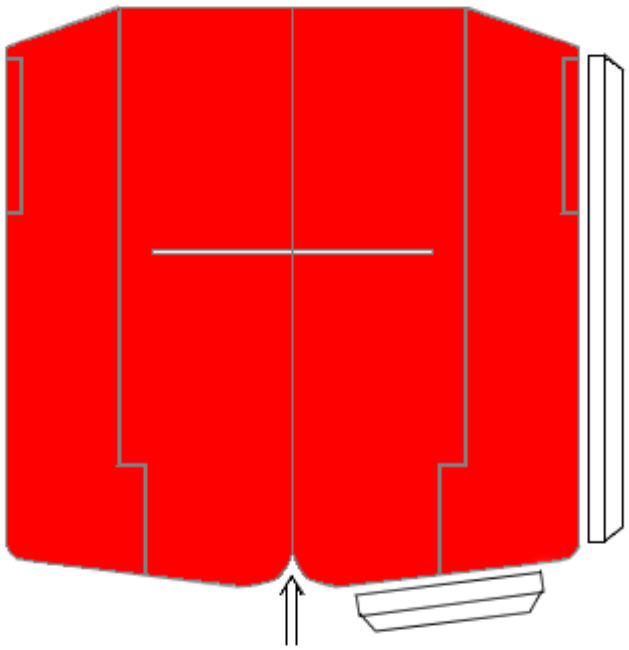
Leading Edge

BOTTOM

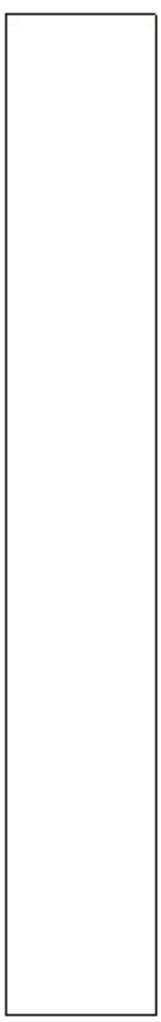
TOP



RIGHT

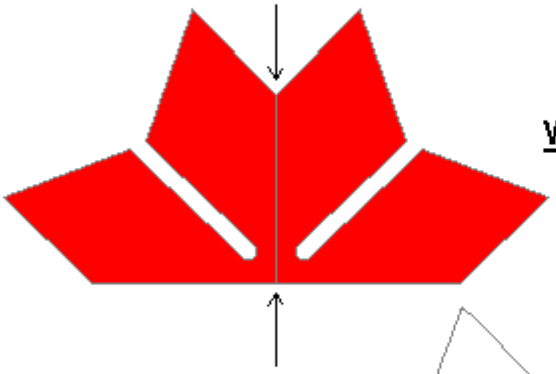


LEFT

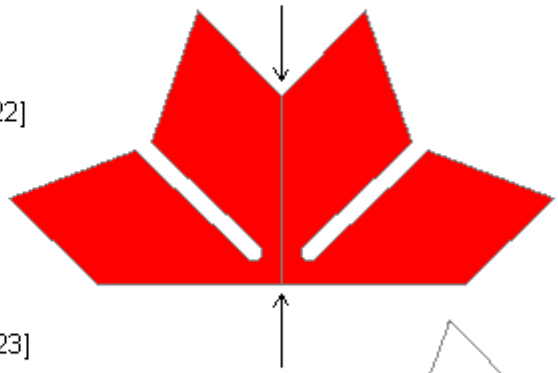


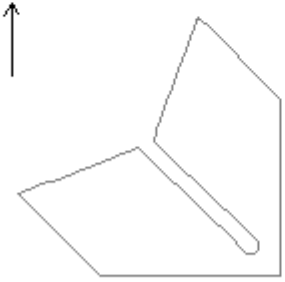
Wing Strut [11]

make 4x thickness

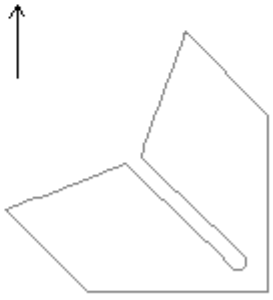


Wing Fins [22]





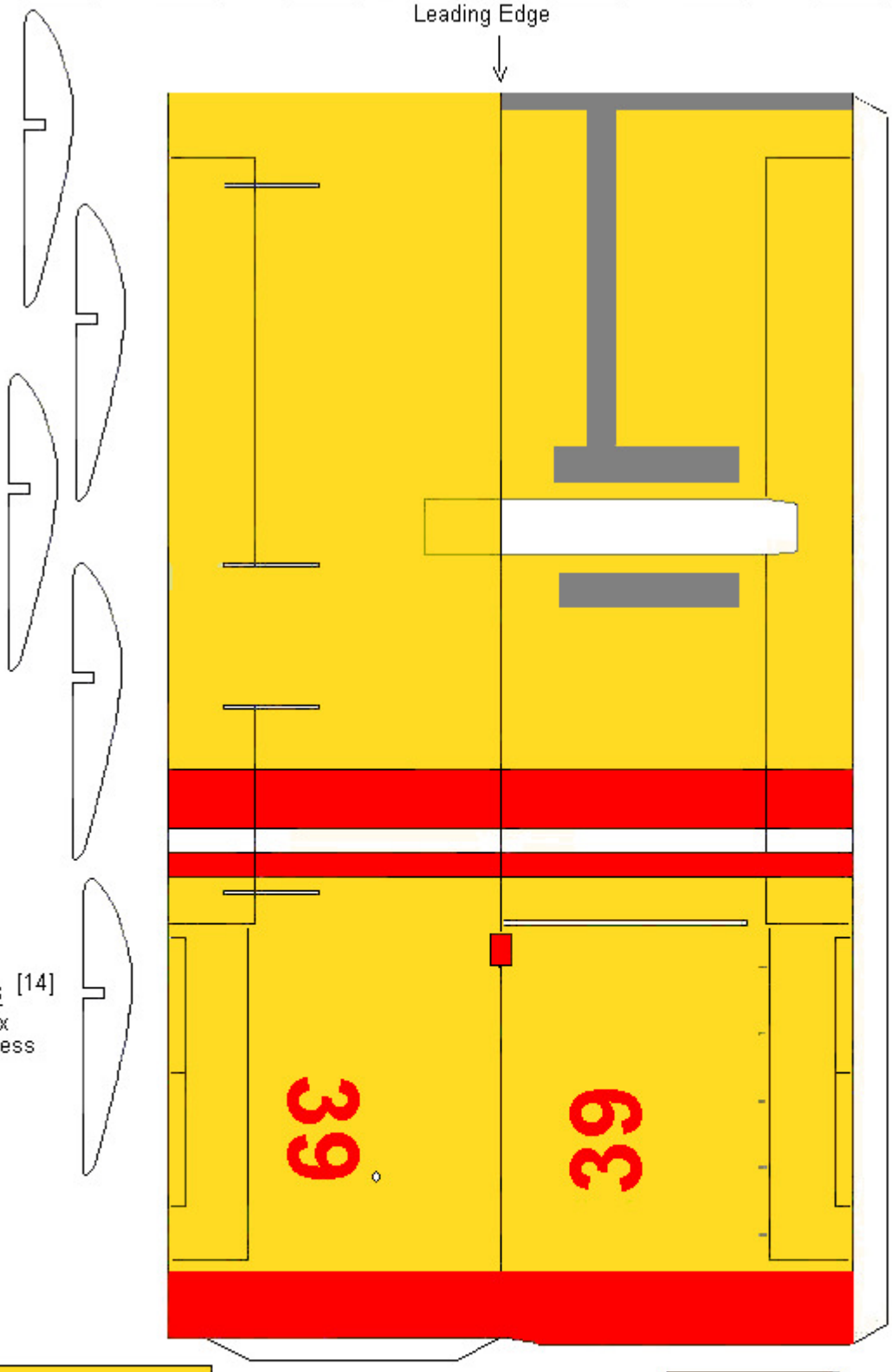
Packing [23]



Sheet 5

Canadair CL-415

Leading Edge

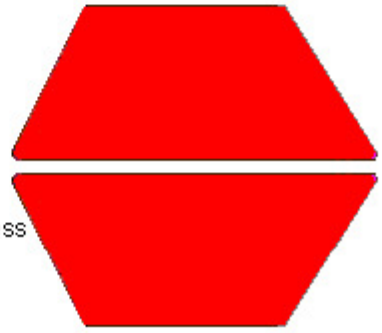


Struts [14]
make 3x thickness

Stabilising Bar [13]
make 6 - 7x thickness, to fit wing struts

Spoiler [10]

Tip Fin [15]
make 3x thickness



Sheet 6A
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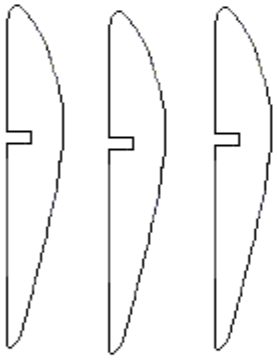
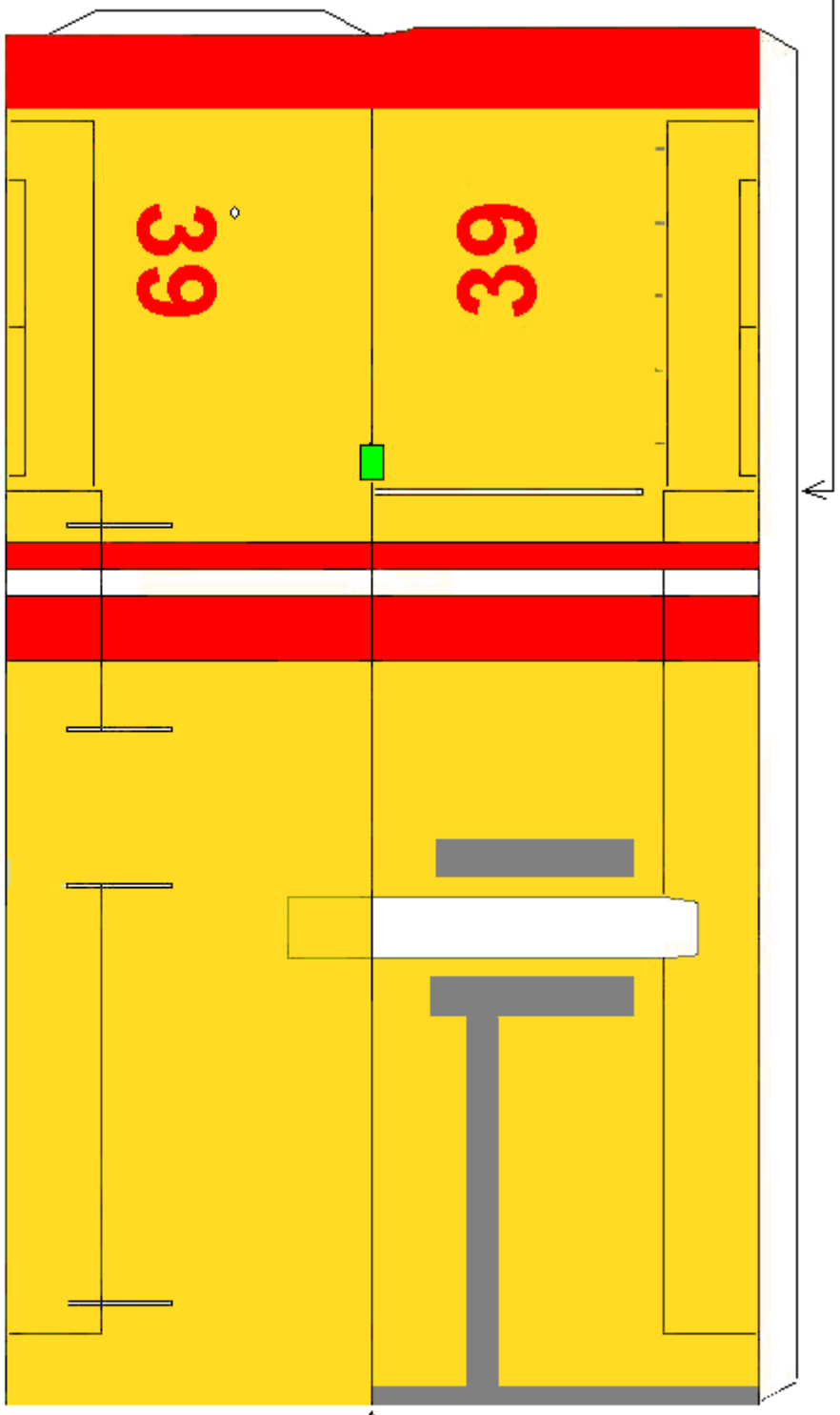
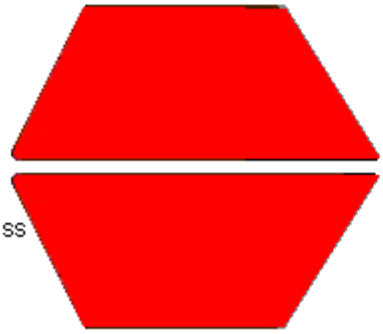
Spoiler [10]



Struts [14]
make 3x thickness

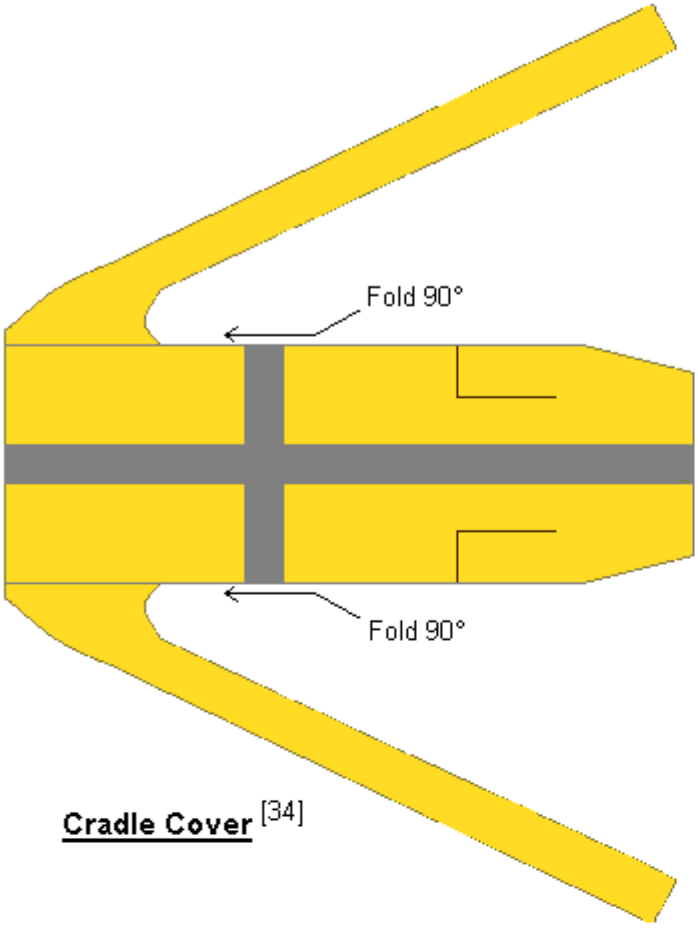


Leading Edge

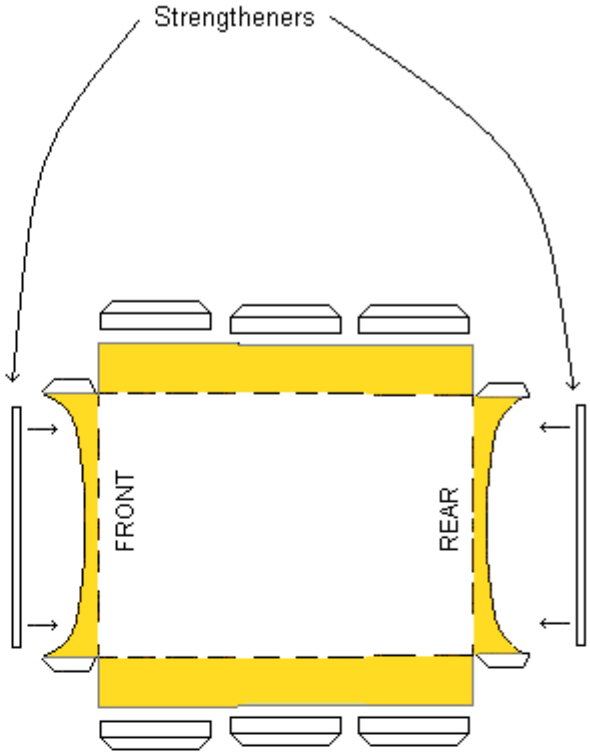


Tip Fin [15]
make 3x thickness

Sheet 6B
Canadair CL-415

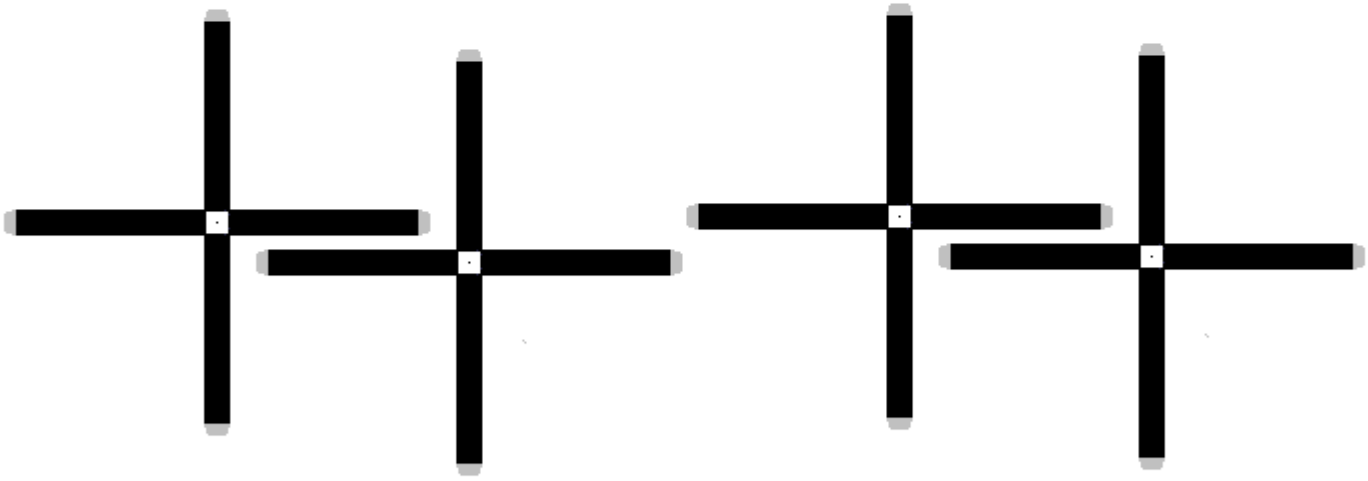


Cradle Cover [34]



Bend 90° all dashed lines

Wing Cradle [33]



Propellers [25]

Glue each pair back to front with card in between, to give 3x thickness.

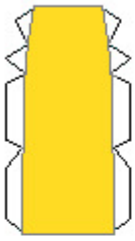
Propeller Hubs [26]

Cut out to cones

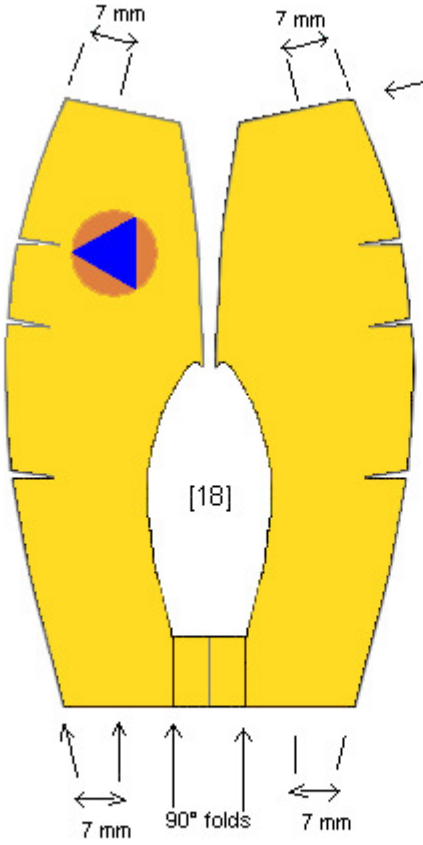
Hub Discs [27]

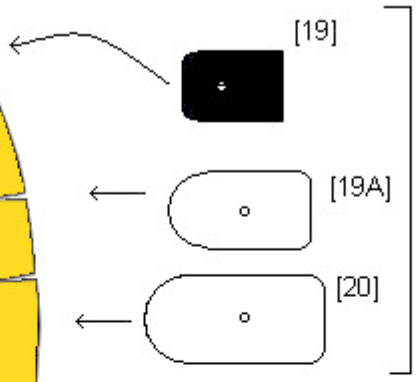
Sheet 6C

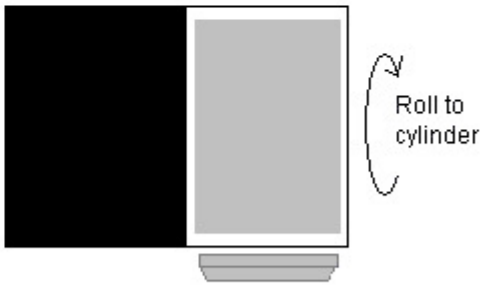
Canadair CL-415



Cowling [16]
Base

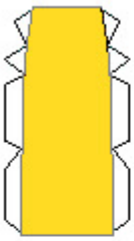




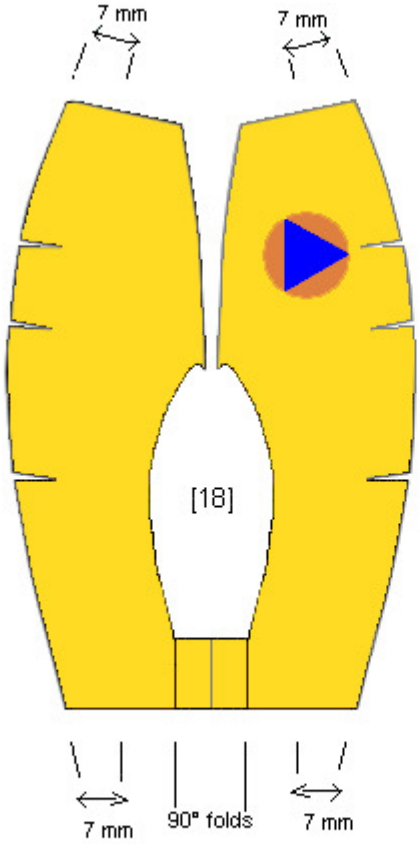


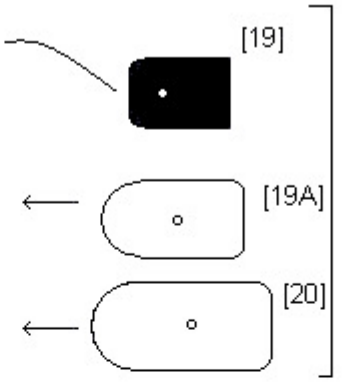
Exhaust Pipe [21] Black inside.

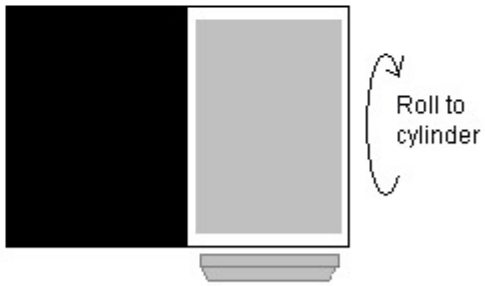
Left Cowling



Cowling [16]
Base





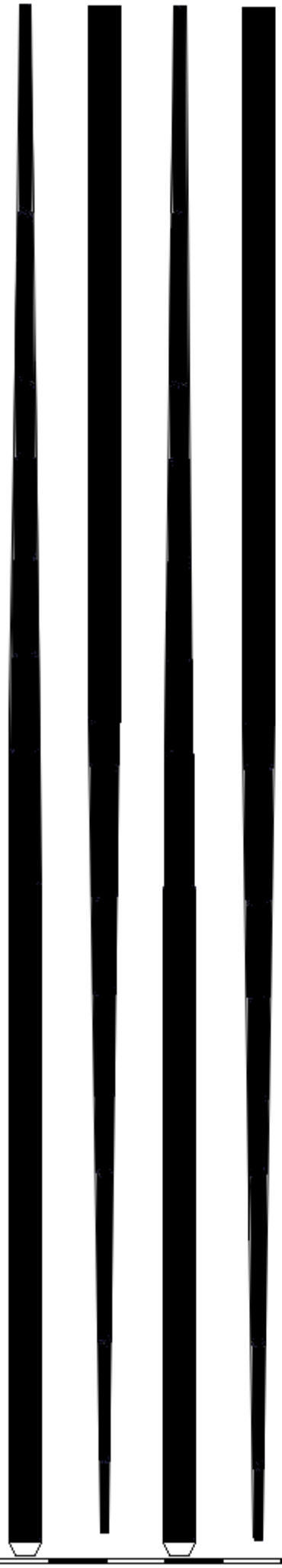


Exhaust Pipe [21] Black inside.

Right Cowling

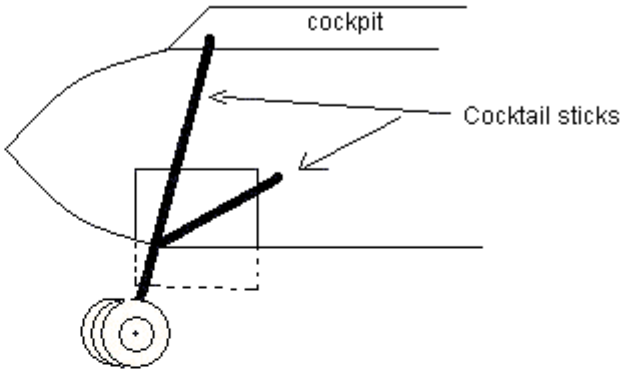
Sheet 7
Canadair CL-415

Front Wheels



Main Wheels

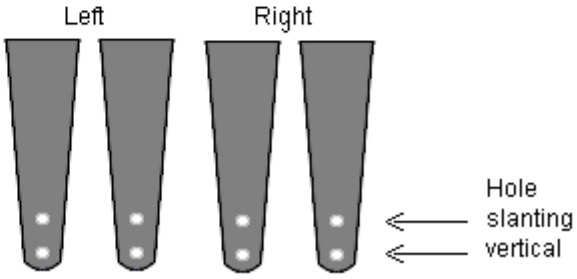
Front Landing Gear

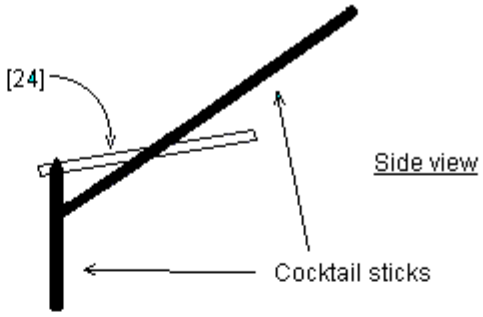


Main Landing Gear x2

Landing Gear Struts [24]

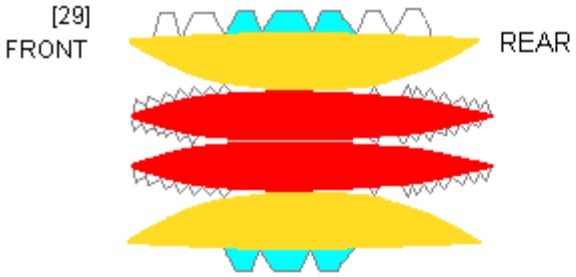
make 5x thickness

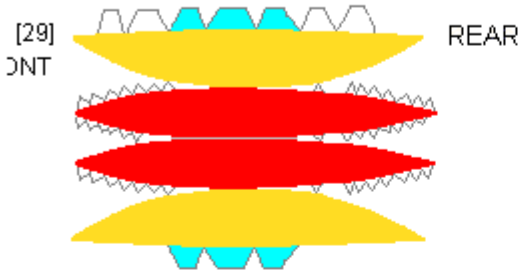




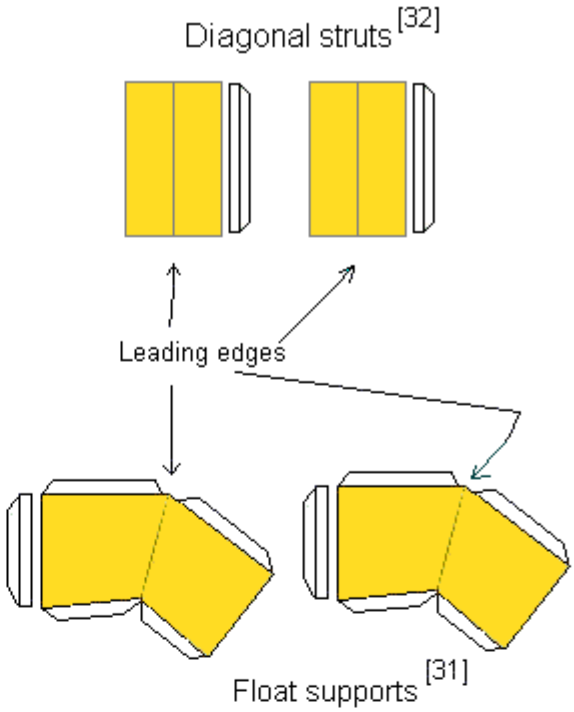
Sheet 8

Canadair CL-415





Floats

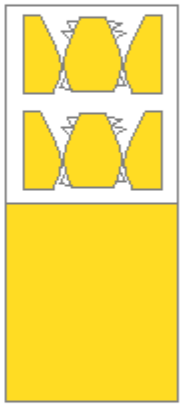


Radio mast [33]

Make 2x thickness
Glue on 1 mast just behind cockpit on top, LH side. The other 2 just in fron of the tail fin

Nose radar [34]

Glue back to front, and glue to front of nose



Air Intake [37]

Fold and glue

Aileron Hinges [35]

Sheet 9

Canadair CL-415