

# Bob's Card Models

[www.bobscardmodels.altervista.org](http://www.bobscardmodels.altervista.org) and [www.zealot.com](http://www.zealot.com) [Resources]



## Martin Mars water bomber (1:72)

The Martin Mars were the largest flying boats ever to enter production, and the two surviving tankers are now operated by the Coulson Group, based at Sproat Lake near Port Alberni, British Columbia. They can carry up to 30,000 liters of water and are used to fight fires along the coast of British Columbia, and even sometimes in the interior

### General characteristics

Crew: four (with accommodations for a second relief crew)

Capacity: 133 troops, or 84 litter patients and 25 attendants

Payload: 32,000 lb (15,000 kg) of cargo, including up to seven jeeps

Length: 117 ft 3 in (35.74 m)

Wingspan: 200 ft 0 in (60.96 m)

Height: 38 ft 5 in (11.71 m)

Wing area: 3,686 ft<sup>2</sup> (342.4 m<sup>2</sup>)

Empty weight: 75,573 lb (34,279 kg)

Loaded weight: 90,000 lb (40,820 kg)

Max takeoff weight: 165,000 lb (74,800 kg)

Power plant: 4× Wright R-3350-24WA Duplex Cyclone (JRM-1 aircraft were originally powered with this engine, but modified by the Navy with more powerful Pratt & Whitney R-4360 "Corn Cob" engines and

designated JRM-3; civilian operators converted them back to Wright R-3350s) 18-cylinder radial engines, 2,500 hp (1,865 kW) each

#### Performance

Maximum speed: 192 knots (221 mph, 356 km/h)

Range: 4,300 nautical miles (5,000 mi, 8,000 km)

Service ceiling 14,600 ft (4,450 m)

## **Building Instructions**

Print all sheets on 210 to 230 g card, except sheet Paper, Sheet 20.

Green areas must be cut out, BUT only when told to do so.

**NOTE:** Being a large model, the danger of “ribbing”, ie the form of the bulkheads becoming visible when gluing and applying too much pressure with the fingers, can be circumnavigated; glue strips of card around the perimeters of the bulkheads before gluing inside the fuselage. It may be necessary to slightly smaller the size of the bulkheads (ca 0.5mm) all around their perimeters.

### **Fuselage**

1. Cut out bulkheads **A** to **F**, make 3x thick by gluing on waste card.
2. Cut out the fuselage parts [1] - [5], round each of the 5. Note the positions of the b'heads (arrowed on sheet).
3. As the middle of each long tab of the fuselage parts is also the V-portion of the fuselage, first fold sharply length-wise to give a flexible middle, then flatten before closing/gluing each fuselage part.
4. Close part [3], gluing the tab. Insert bulkhead **B** and glue in place.
5. Close the part [4] glue its tab. Insert b'head **C** and glue in place. Insert b'head **D** and glue in place. Glue [4] to [3]. BULKHEADS C and D have a small space on their tops (later to accommodate the wing).
6. Close part [5] glue its tab.
7. Part [6] rises to the tail with a curve, and not a straight line..... cut out [6] and its tab (note that its 2 sides are not straight, but slightly curved).
8. Part [6]: bend the short grey lines, for the profile to match that of [5].
9. If you place the 2 sides to be joined on a curved surface, you will see that they match .....
10. Glue/close the form.
11. Glue onto [5].
12. Add parts [7] and [8]. NB: When parts [6], [7] and [8] are glued in place, the line along their tops must be straight to accommodate the rear fin assembly.
13. Glue B/H in place.

### **Cockpit & nose**

14. Cut out [2], cut out all slits, fold the 2 folds giving the V-shape to the hull.
15. Bend down the 3 tabs under each front window.
16. To give curvature to the cockpit, bend down the flaps containing the 3 front windows, as well as the 2 sides of the cockpit.
17. Cut out and bend the tab along its length. Glue to both sides of the hull thus closing the form.
18. Using a 10-20mm diameter rod, round the 2 sides of the hull, to match the rounding of bulkhead **B**.
19. Glue the left and right front window flaps to their respective sides, using the tiny tabs (optimise the curvature by cutting tiny slits in the tab). Finally, glue the left and right front windows to the central window.
20. Glue [2] onto [3].
21. Cut out nose [1]. Carefully round form with an approx 10mm bar. Cut out and glue tab onto one side only, after again folding it length-wise to give the V-form. Do not yet close the form.
22. Glue each of the pointed segments to its neighbour, then close/glue the form.
23. Make a fold in the 2 marked positions to give the V-profile.
24. Glue B/H **A** in place in front of [2].
25. If the tip of the nose is too pointed, cut point 1mm back, 'wetten' with glue, and push back with fingers.
26. Glue nose [1] onto [2]. If necessary, make a 5-10mm long snip in the top of the cockpit, glue under the snips and smooth down.

### **Rear Fin & Wings**

27. Cut out the fin [9], its horizontal strut [10] and the base of the fin [11].

28. Bend the main tab and the serrated tabs, fold in half along the leading edge, close/glue the fin.
29. Cut out the 2 sides of the fin base [11], bend the serrated tabs, and glue the 2 parts together.
30. Insert the horizontal strut [10] on a tooth-pick, into the fin and glue in place, not flush but about 5mm inside the fin..
31. Insert the glued (white portion) fin through the base [11], pull through so that the red colour of the fin just protrudes.
32. Cut out the green slit on the base - the Wing strut will be inserted here.
33. Cut out the wing strut [13], glue 3x on card to make 4x thick.
34. Insert the wing strut half-way into one of the wings [12], along the aileron marking and glue.
35. Push the wing strut through the slit in the fin base of the fin, put a bead of glue along the edges of the protruding wing strut, push the other wing [12] over and hold until dry.
36. Cut out the 4 green slits on the top of the fuselage, glue the 4 tabs of the fin/wing assembly, and push in place.
37. Glue along all joins with a bead of glue.

### **Wings**

38. Cut out the floats [16] and their supports [15], and assemble..
39. Cut out the Wing portions [14aR] and [14bR]. Cut out the 2 green slits on [14aR] and [14bR], which are the fixing points of the floats. Insert the tabs of the float support through the wings, and glue in place. Close/glue the wing.
40. Repeat for the left-hand wings.
41. Cut out, fold and glue the 2 wing stabilisers [17]. Glue the 2 together.
42. Glue the 70-80cm stabiliser into each wing, then glue the 2 together.
43. When dry, glue a paper strip 12 x 5.5cm over the join.
44. Cut along the green lines on the top of fuselage part [4] and bend the flaps outwards. Glue the whole wing assembly onto this 'platform.' Very tricky as you must make sure that all angles are correct. Use long elastic bands over the wings until glue is dry.

### **Engines**

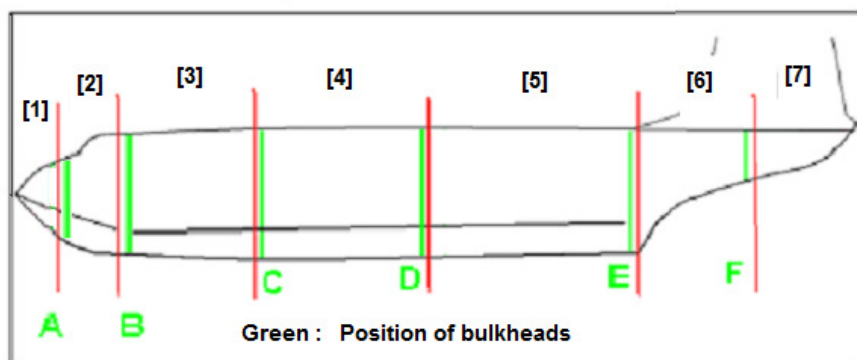
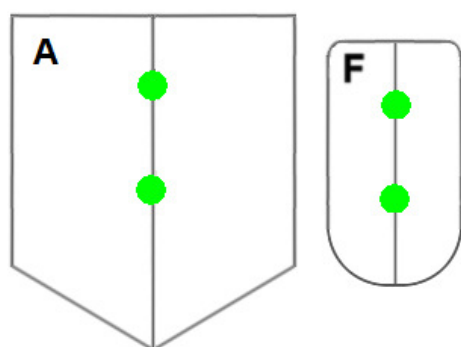
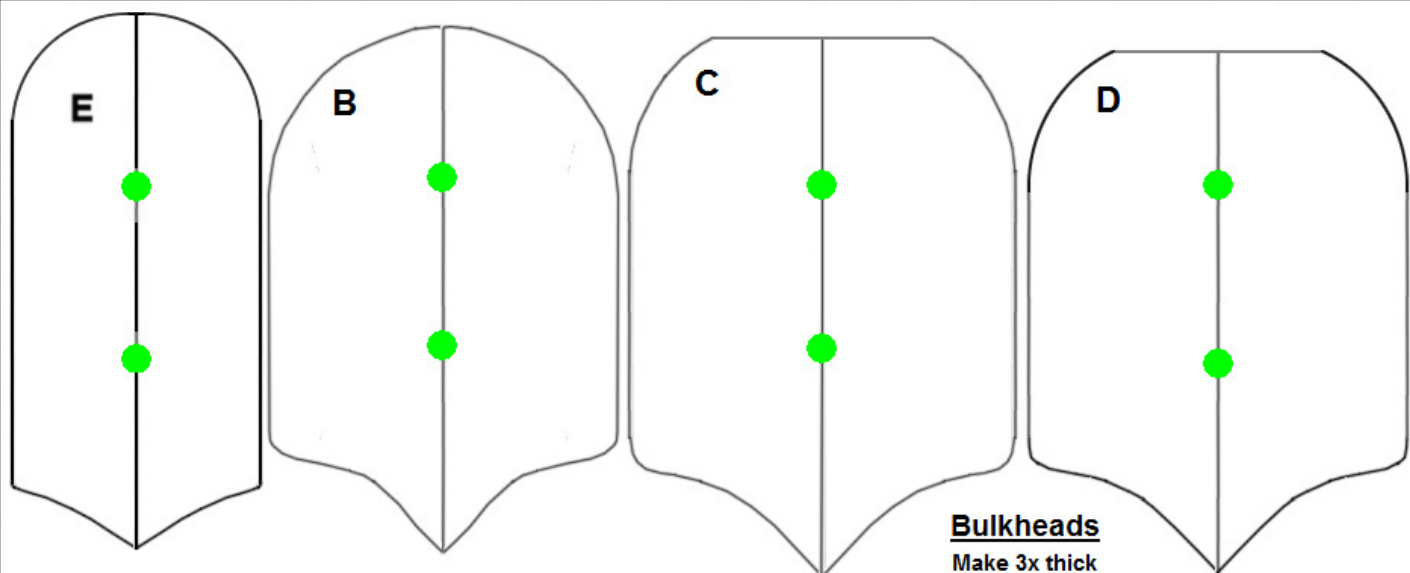
47. For each motor, cut out parts [19] to [20], as well as motor disc A.
48. Round and close/glue [19].
49. Round and close/glue main tab of [20]. Close/glue end of [20]. Cut out all green areas. On front end, glue in motor disc A, and put glue around the circumference of A. Insert the unit inside [19] as far as it will go.
50. Cut out the Air Inlet Ducts [20A] for each engine, fold, glue, cut out and glue in position as marked on the sheet.
51. Cut out the 4 4-bladed propellers [21], fold, glue, then glue on the tip of a tooth-pick or pin. Cut out and add the nose cones [22]. Affix.
52. Glue the motors in place on the wings (if necessary, increase the area to be cut out, to fit the wing snugly).

### **Accessories**

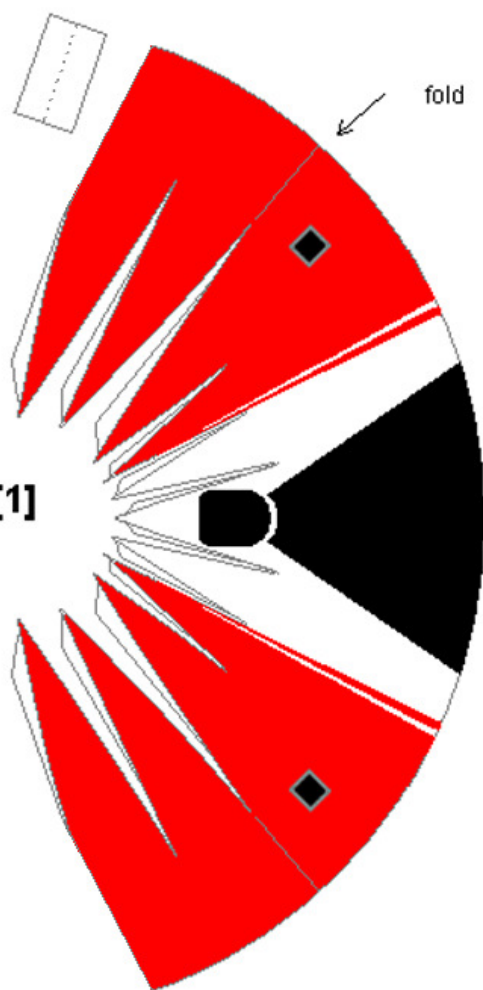
53. Cut out aerial [23], fold, glue in position on marking on top of cockpit.

Where necessary, joins can be covered with strips of paper.

---oooOooo---

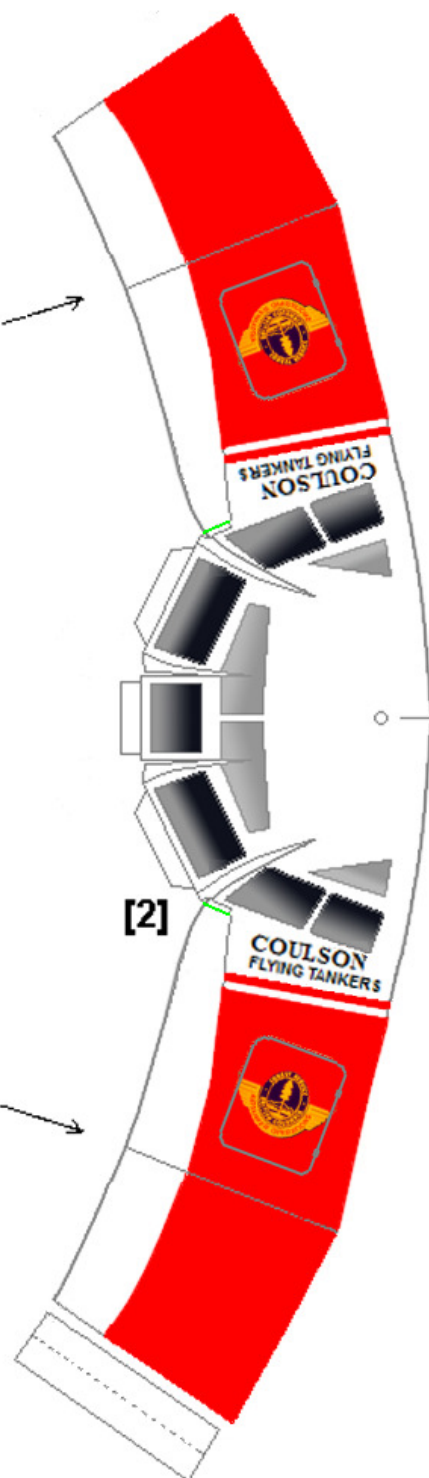


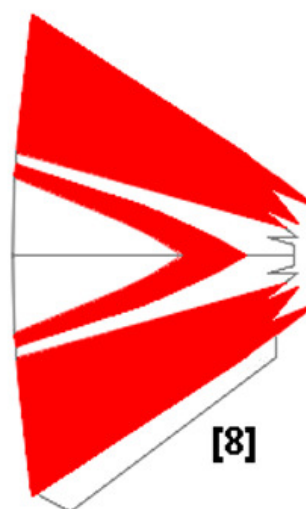
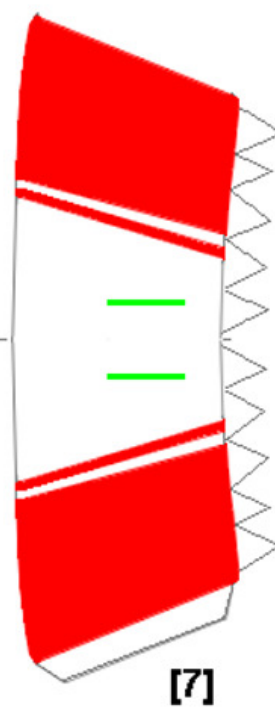
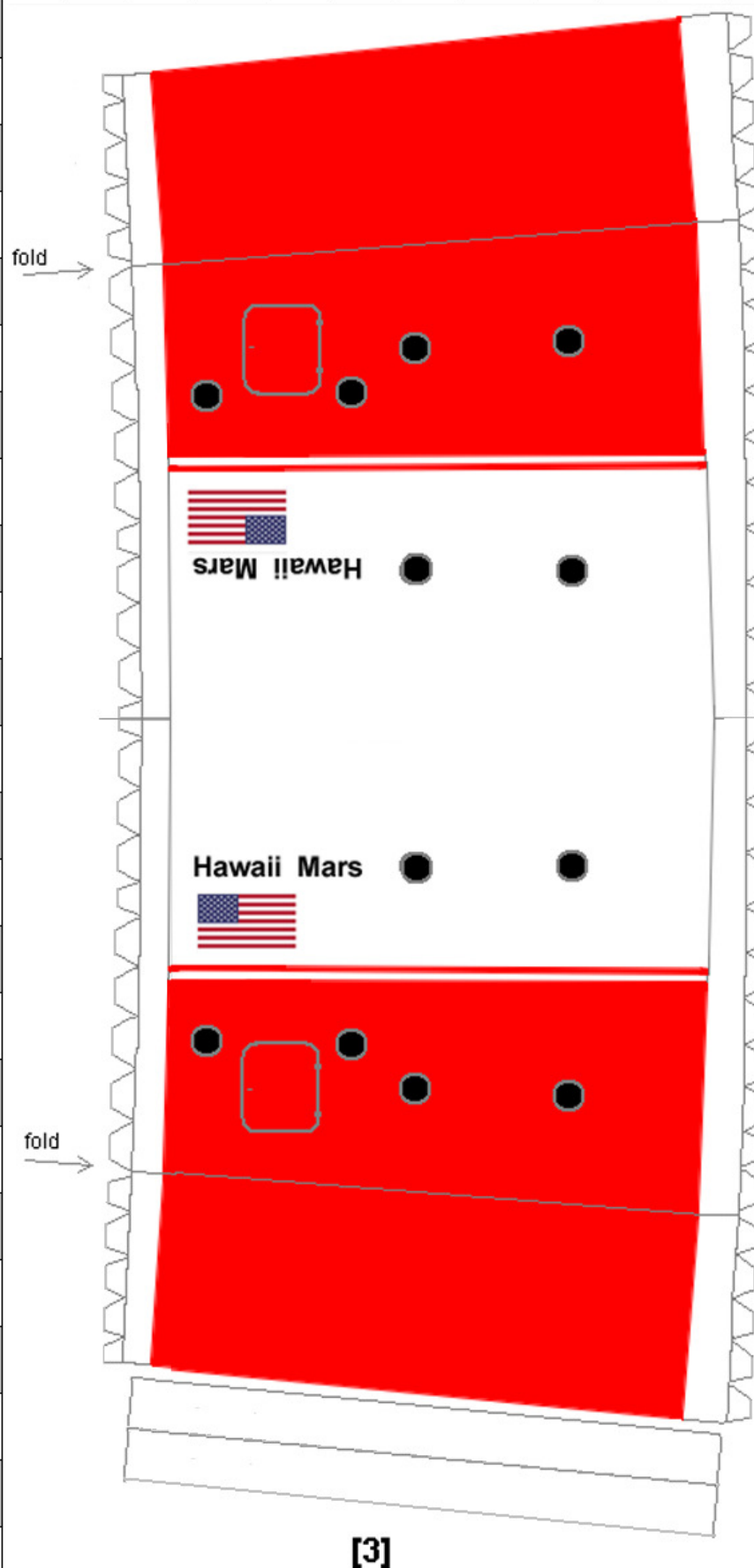
[1]

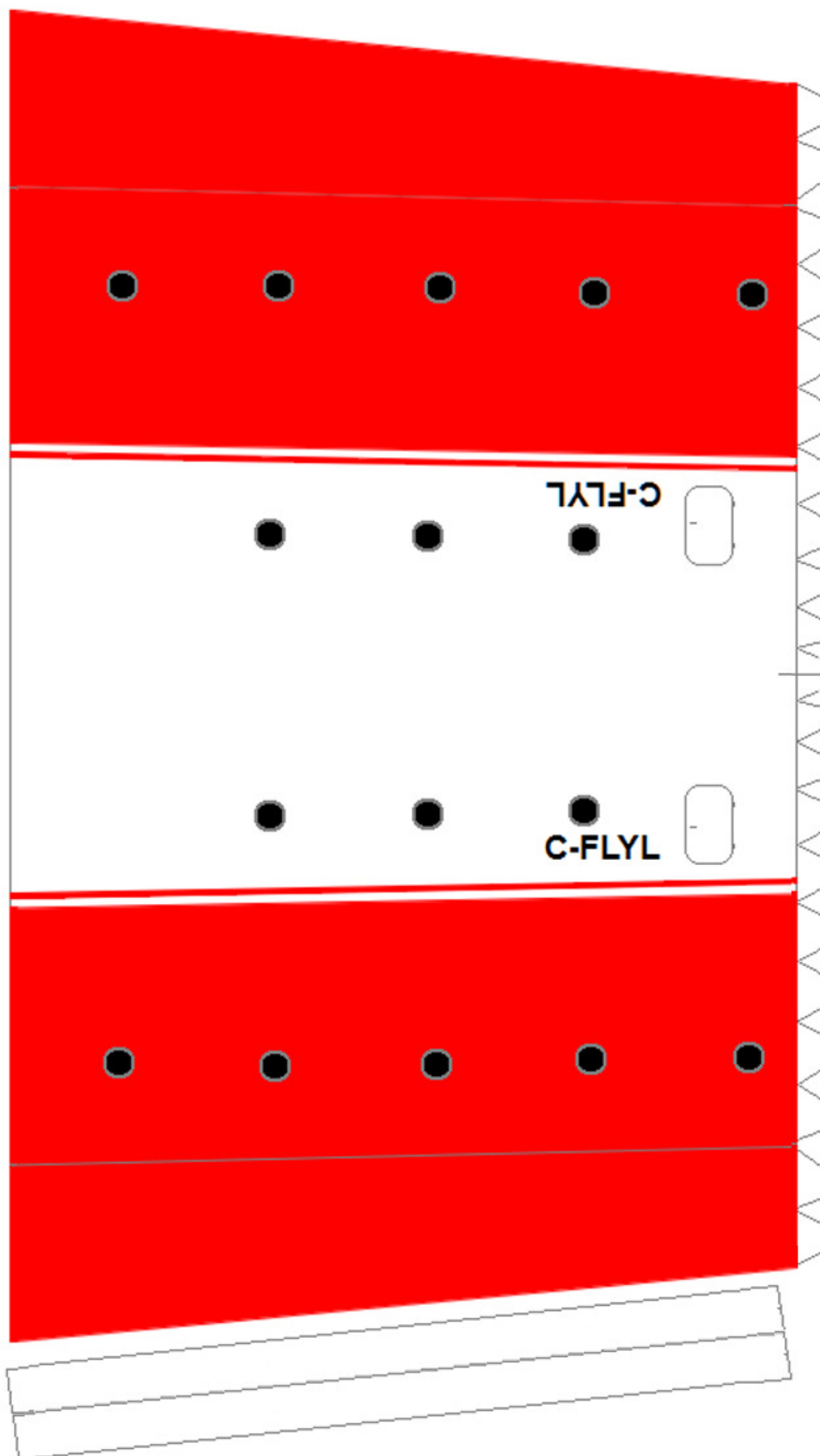


fold

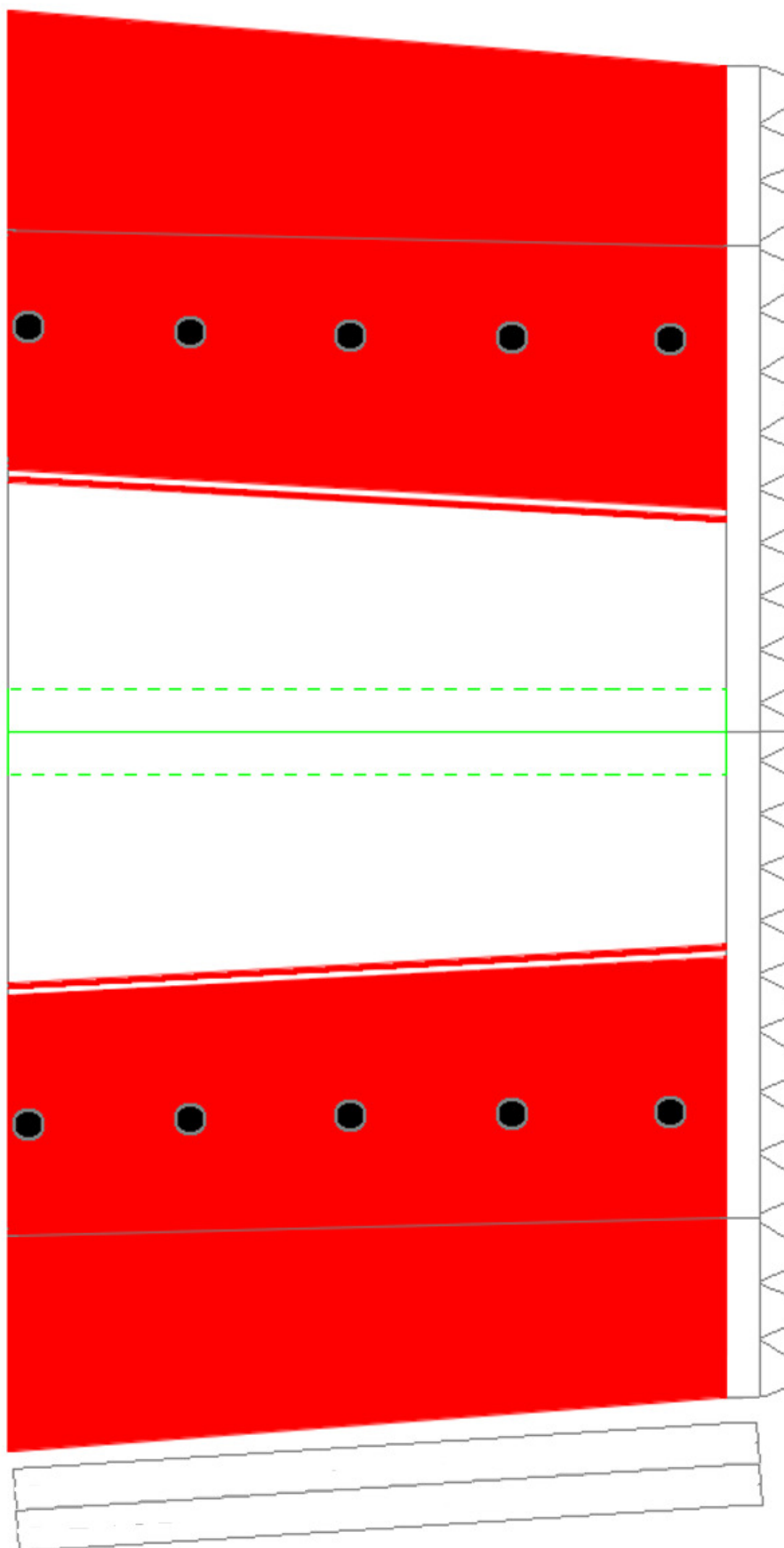
[2]







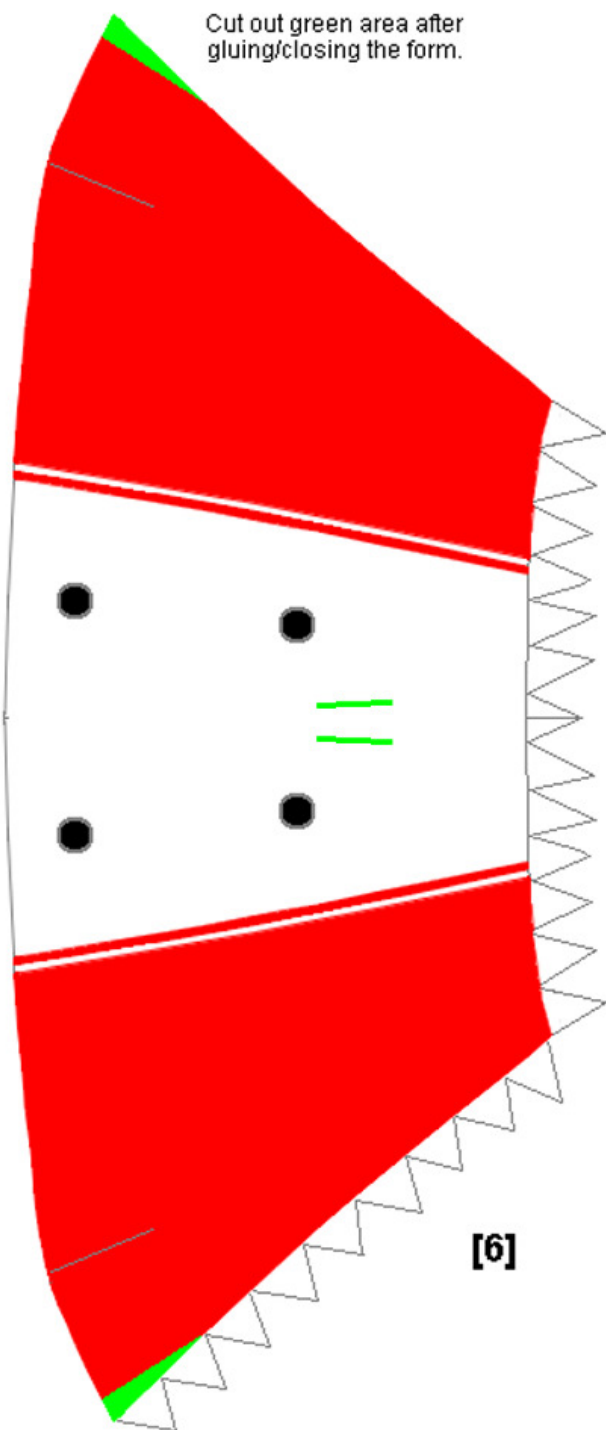
[5]



[4]



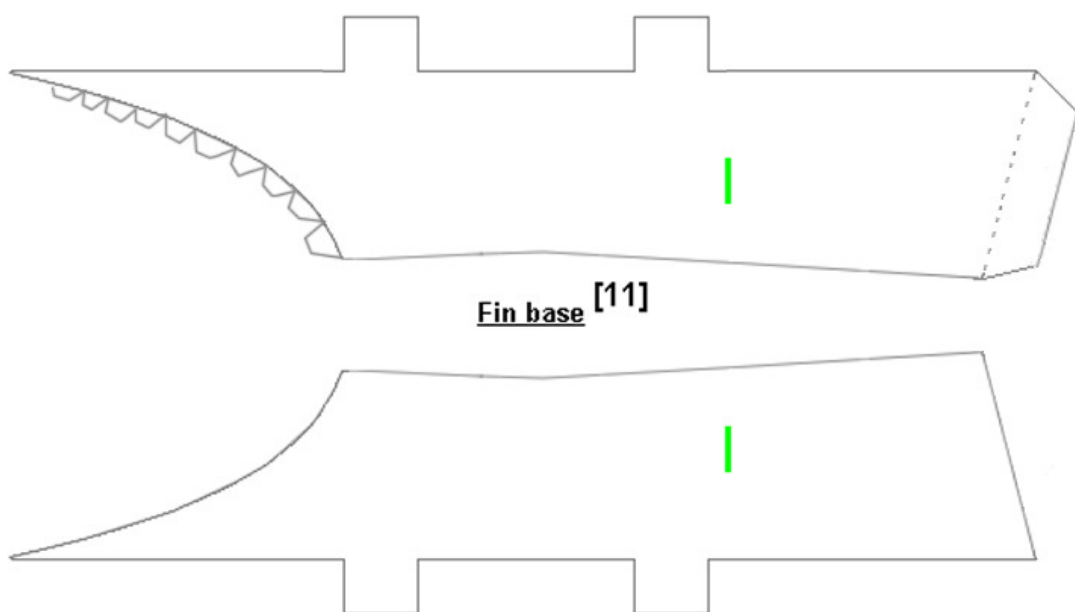
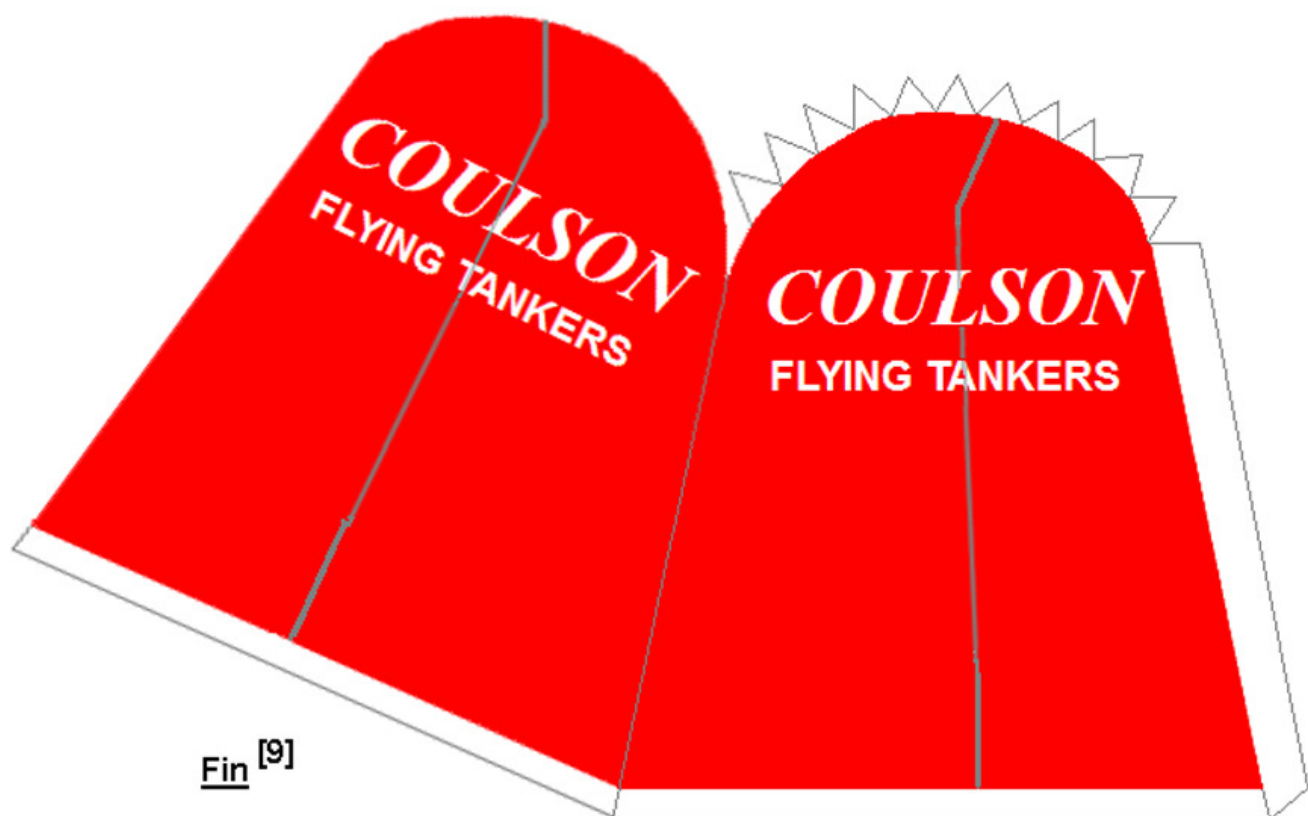
Cut out green area after  
gluing/closing the form.

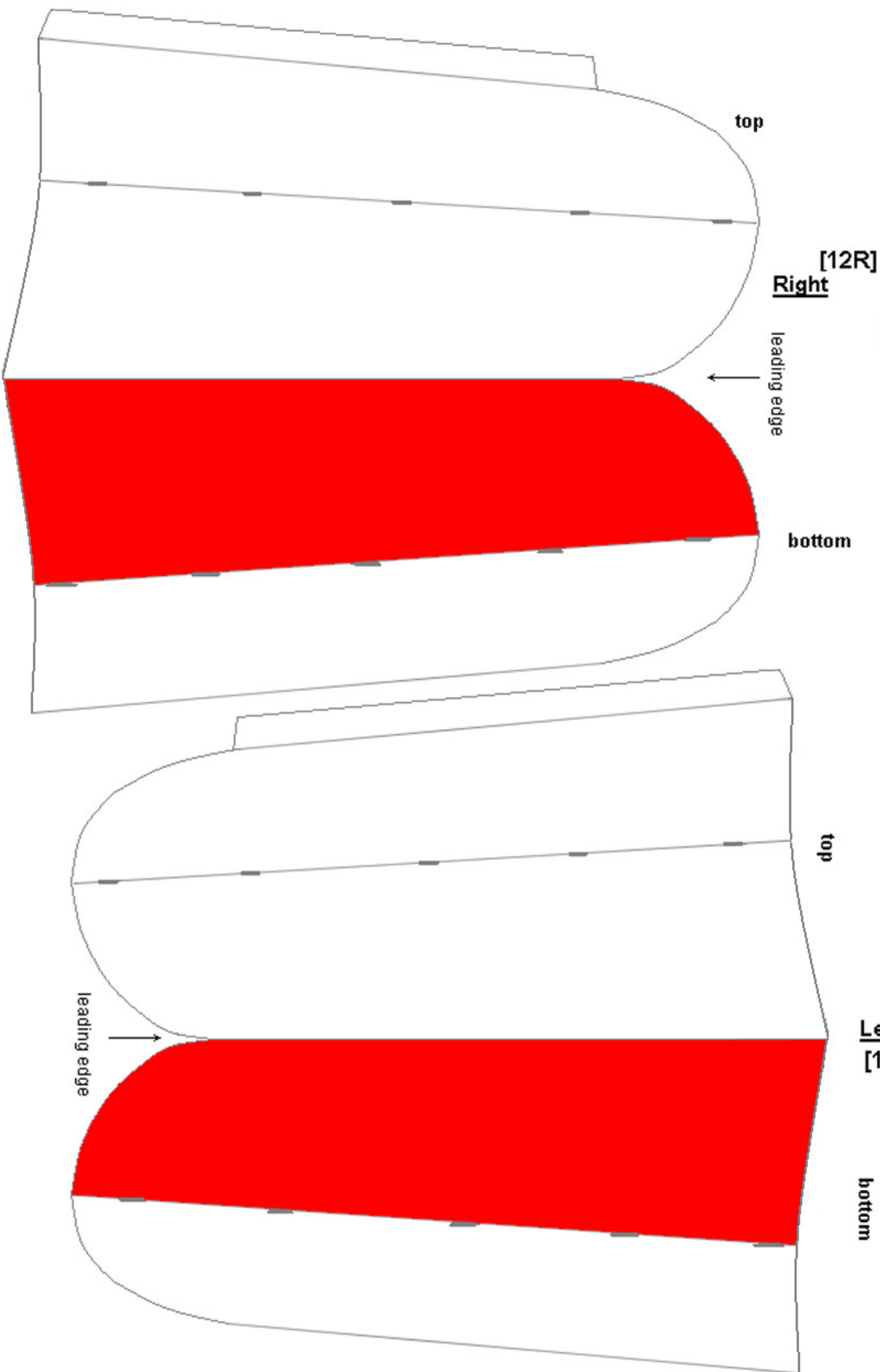


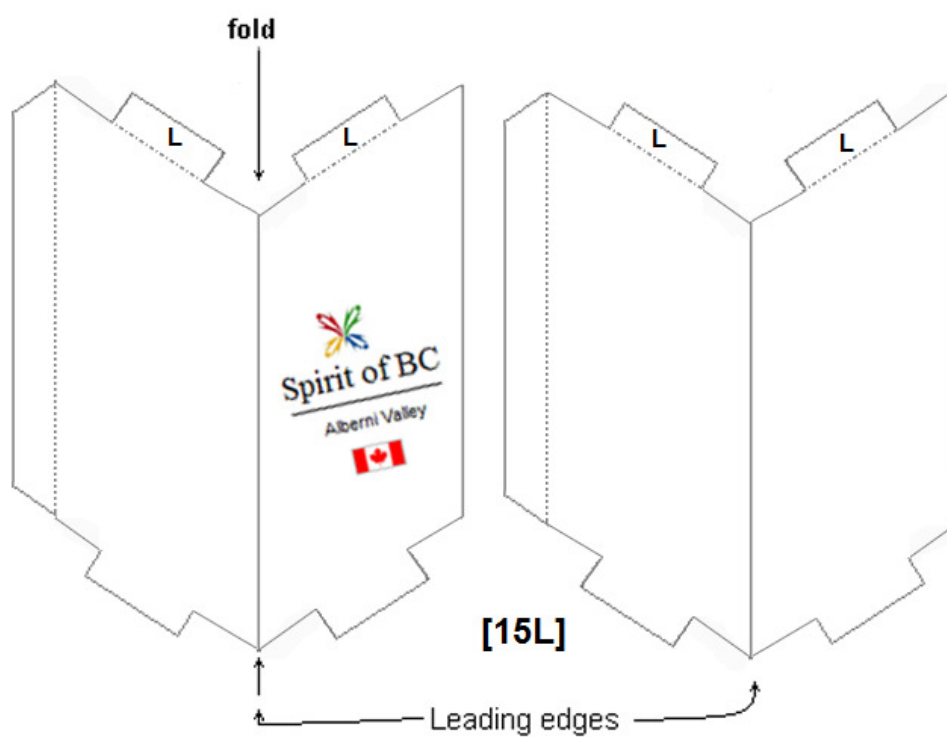
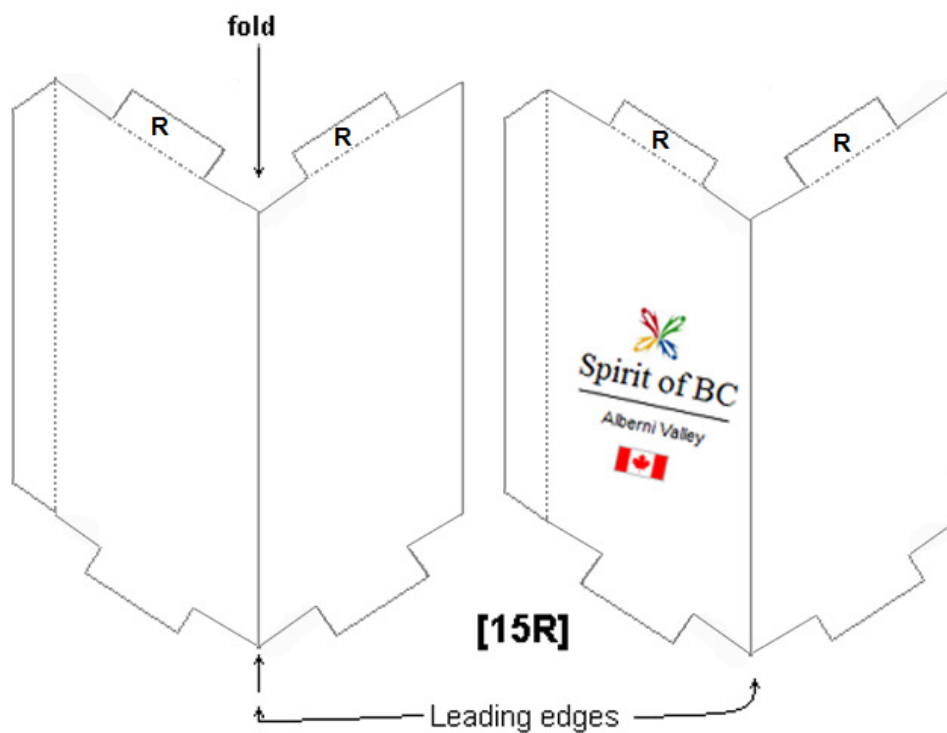
[6]



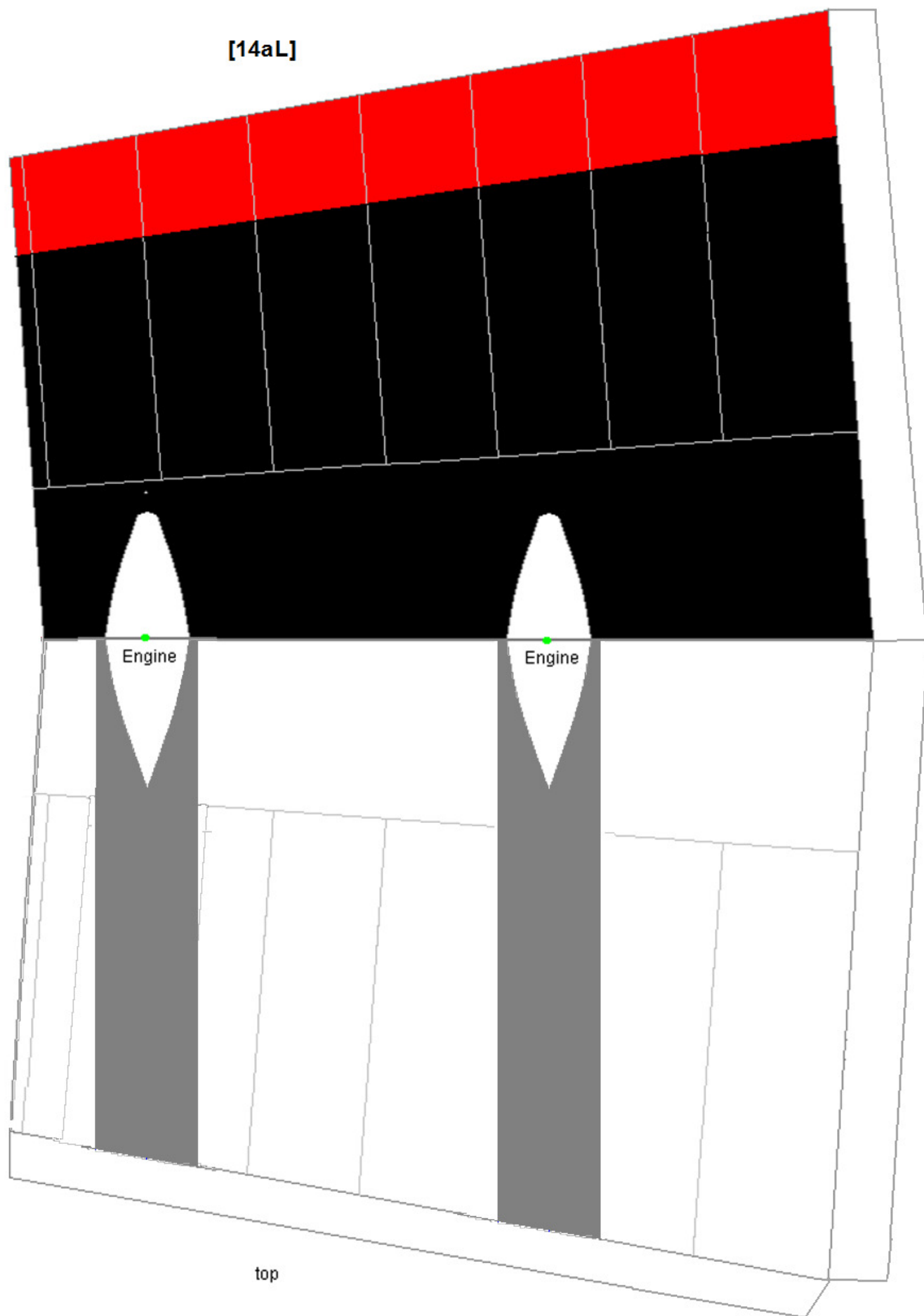
Aerial [23]



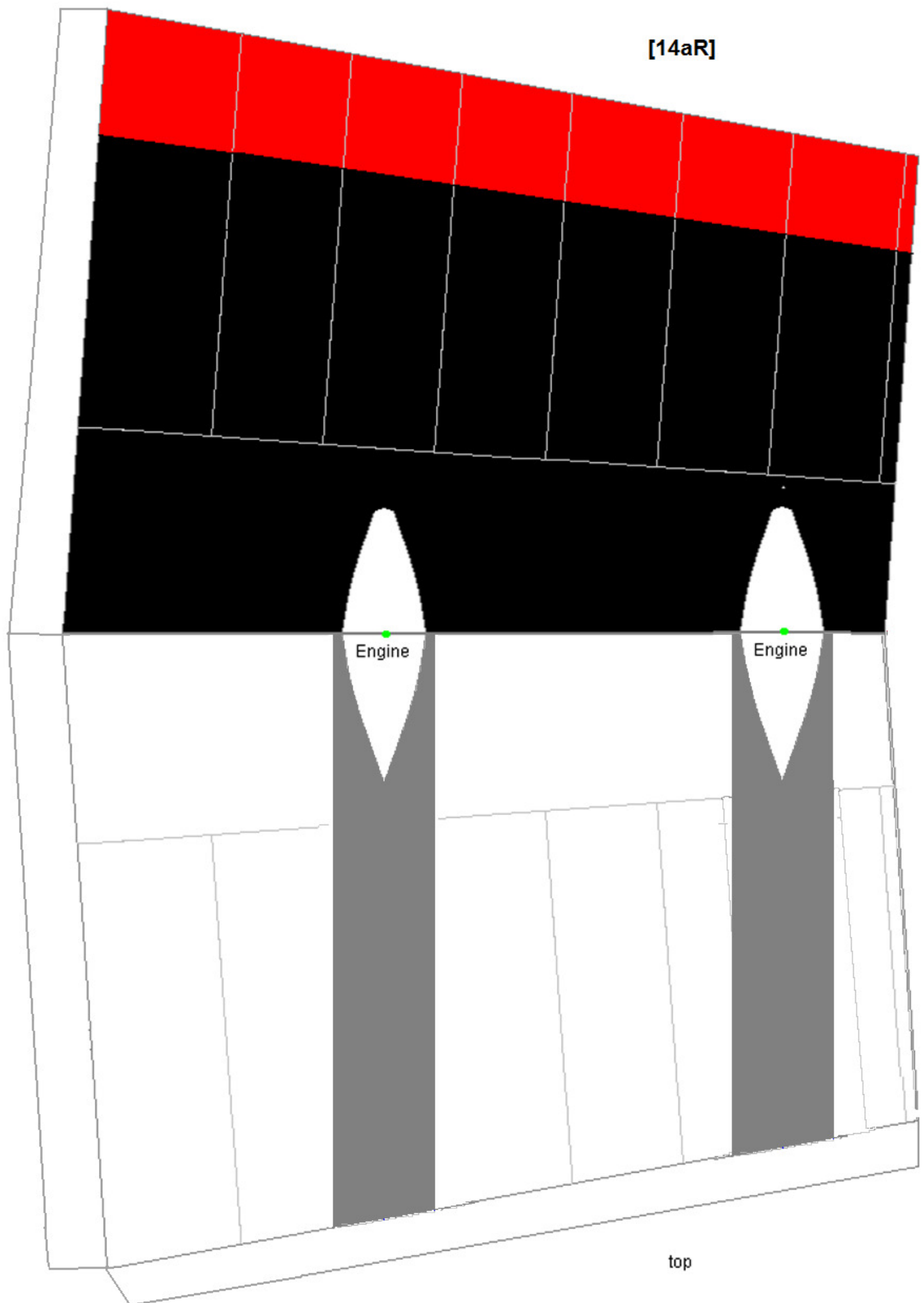




[14aL]

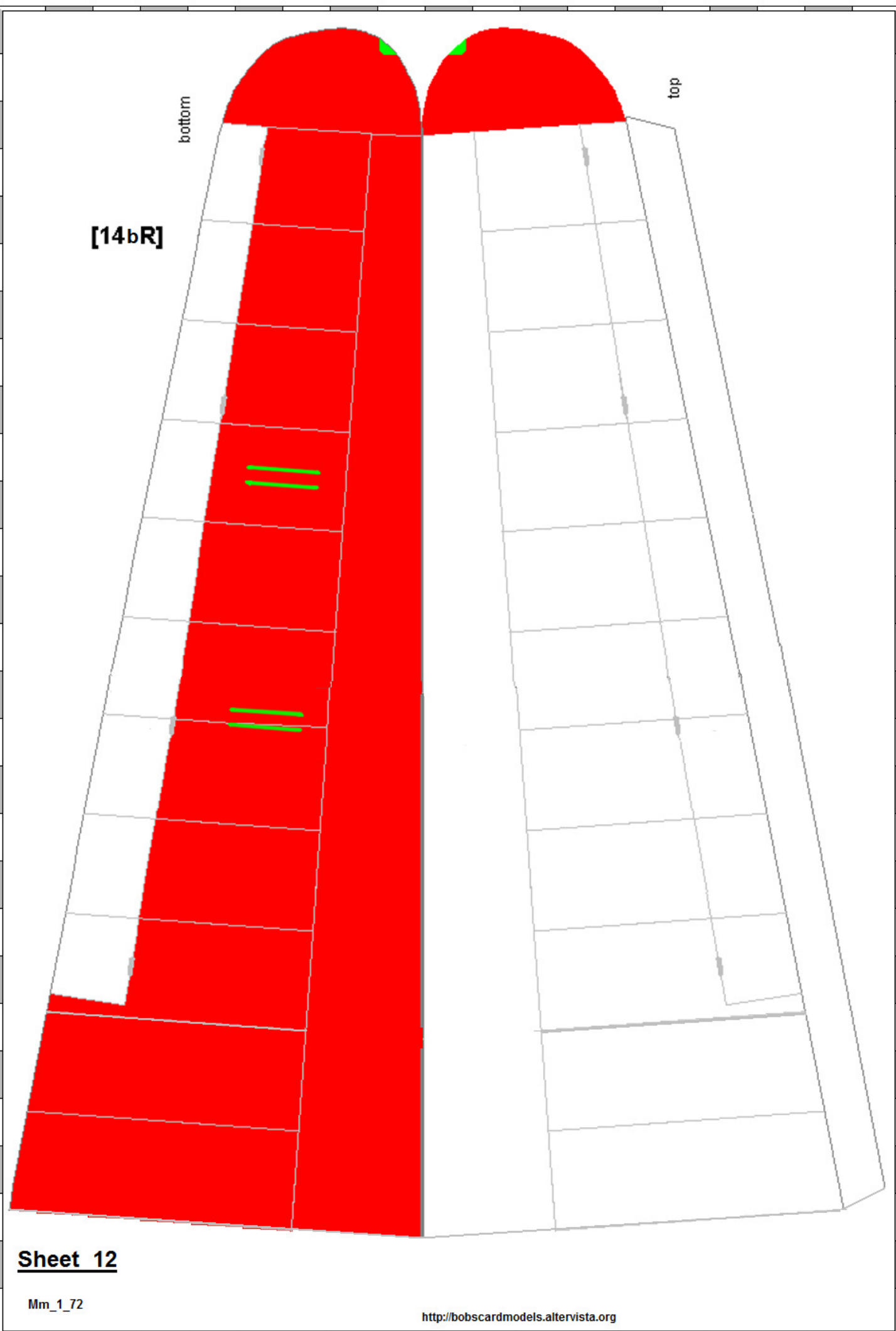


[14aR]



**Sheet 11**

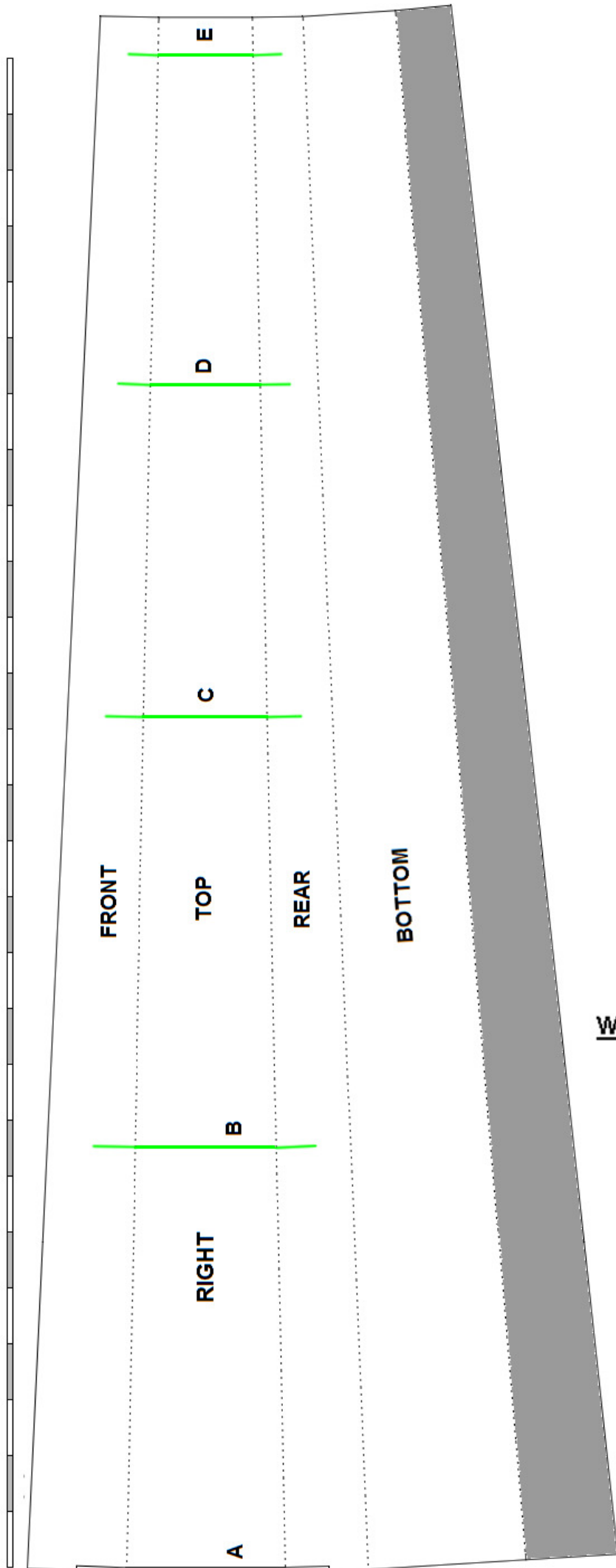
Mm\_1\_72



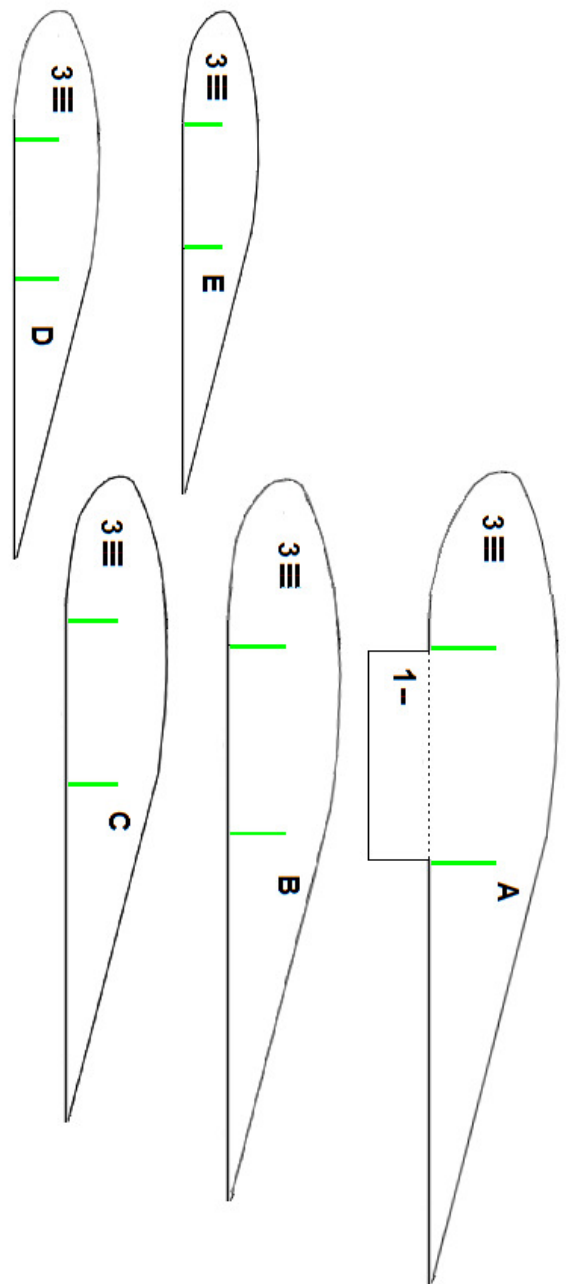
[14bR]

bottom

top

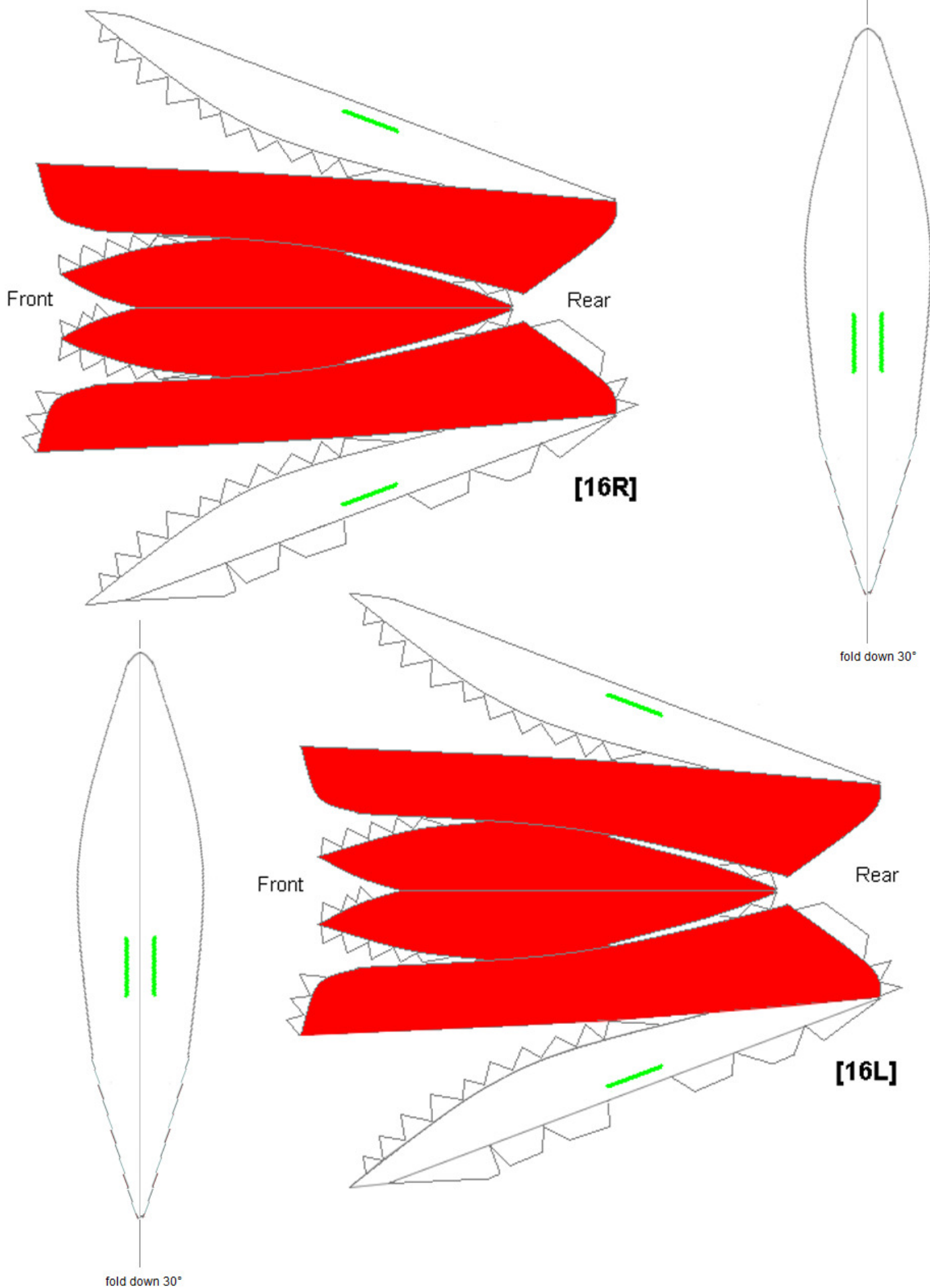


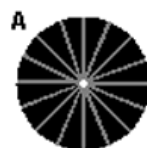
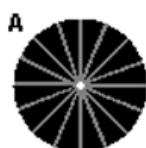
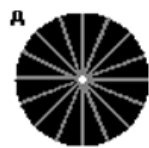
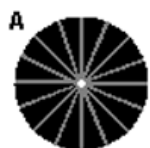
Wing Stabiliser [17]





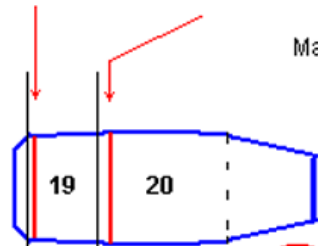




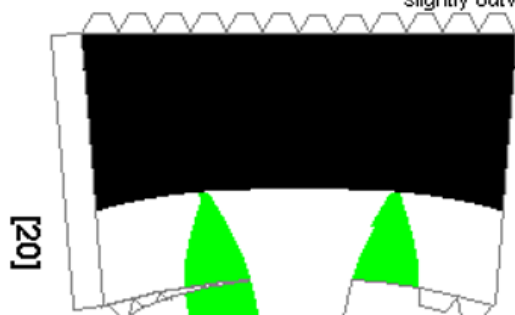


Make 3 x thick

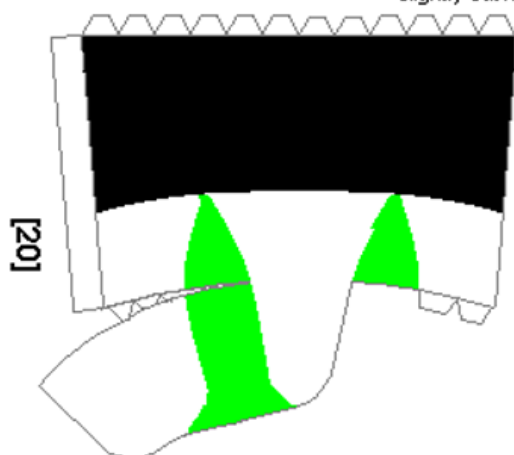
Make 2x thick



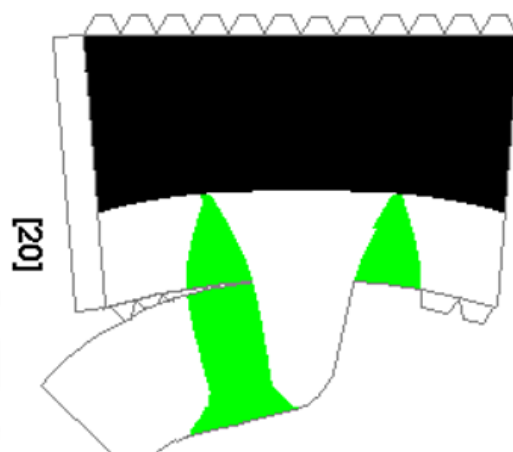
... ↑ ↑ ↑ Slit all flaps, and bend slightly outwards.



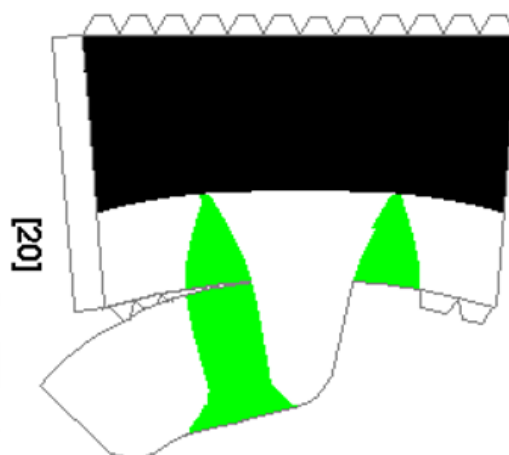
... ↑ ↑ ↑ Slit all flaps, and bend slightly outwards.

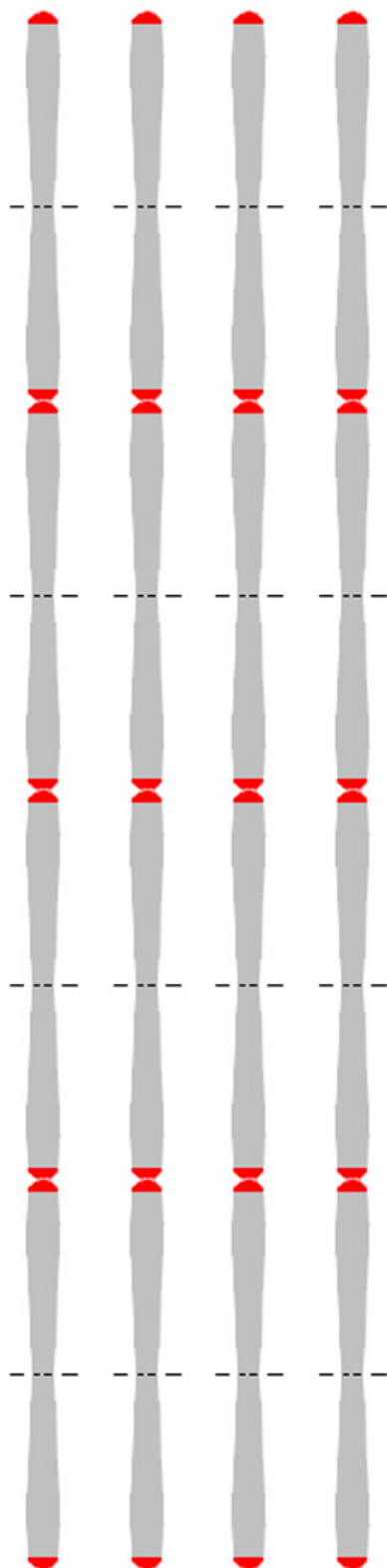


... ↑ ↑ ↑ Slit all flaps, and bend slightly outwards.

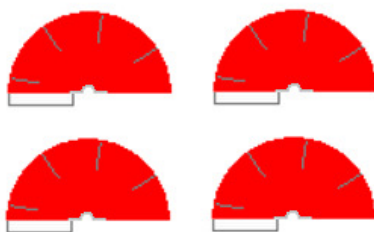


... ↑ ↑ ↑ Slit all flaps, and bend slightly outwards.





4 4-bladed propellers [21]



Nose Cones [22]

### Air Inlet Ducts [20A]

Cut out, blacken on inner side, roll around cocktail stick, and glue in place.

