

# 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 (1:144)

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 litres 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)

Powerplant: 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 paper.

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

### **Fuselage**

1. Cut out bulkheads **B** to **E**, 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, it must firstly be sharply folded length-wise to give a flexible middle, then flattened before closing/gluing each fuselage part.
4. Also, each fuselage part must also exhibit these sharp folds - bend sharply along the lines marked.
5. Close form [3], gluing the tab. Insert bulkhead **B** and glue in place, initially not gluing the V-portion.
6. Close the form [4] glue its tab. Insert b'head **C** and glue in place. When dry, glue the V-portion. Glue [4] to [3].
7. Close the form [5] glue its tab. Insert b'head **D** and glue in place. When dry, glue the V-portion. Glue [5] to [4]. Insert b'head **E** and glue in place.
8. 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).
9. Part [6]: bend the short grey lines, for the profile to match that of [5].
10. Glue/close the form.
11. Glue onto [5]. Add b'head **F**.
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

### **Cockpit & nose**

13. Cut out [2], cut out all slits, fold the 2 folds giving the V-shape to the hull.
14. Bend down the 3 tabs under each front window.
15. To give curvature to the cockpit, bend down the flaps containing the 3 front windows, as well as the 2 sides of the cockpit.
16. Cut out and bend the tab along its length. Glue to both sides of the hull thus closing the form.
17. 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.
18. Glue [2] onto [3].
19. 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.
20. Glue each of the pointed segments to its neighbour, then close/glue the form.
21. Make a fold in the 2 marked positions to give the V-profile.
22. Push in b'head **A** and glue in place.
23. If the tip of the nose is too pointed, cut point 1mm back, 'wetten' with glue, and push back with fingers.
24. Glue nose 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**

25. Cut out the fin [9], its horizontal strut [10] and the base of the fin [11].
26. Bend the main tab and the serrated tabs, fold in half along the leading edge, close/glue the fin.
27. Cut out the 2 sides of the fin base [11], bend the serrated tabs, and glue the 2 parts together.
28. Insert the horizontal strut [10] on a tooth-pick, into the fin and glue in place, not flush but about 5mm inside the fin..
29. Insert the glued (white portion) fin through the base [11], pull through so that the red colour of the fin just protrudes.
30. Cut out the green slit on the base - the Wing strut will be inserted here.
31. Cut out the wing strut [13], glue 3x on card to make 4x thick.
32. Insert the wing strut half-way into one of the wings, along the aileron marking and glue.
33. 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 over and hold until dry.
34. 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.

35. Glue along all joins with a bead of glue. If necessary, cover joins with strips of paper or card.

### Wings

36. Cut out the Wing [14R], as well as the float supports [15R]. Cut out the 2 green slits on [14R], which are the fixing points of the floats. Glue the float supports in place.
37. Repeat for the left-hand wing.
38. Cut out, fold and glue the 2 wing stabilisers [17]. Join the 2 together with the connector [18].
39. Insert the 70-80cm stabiliser into each wing, previously wetting both sides of the stabiliser with glue.
40. Cut out the floats [16] and mount on the supports [15].
41. Glue the assembled wing on top of the fuselage, and cover the join with strips of white paper/card.

### 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 on motor disc A, and put glue around the circumference of A. Insert the unit inside [19] as far as it will go.
50. Slit all the flaps on [19], and bend each flap slightly outwards.
51. Cut out the Air Inlet Ducts [20A] and glue in position as marked on the sheet.
52. 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]. Afix.

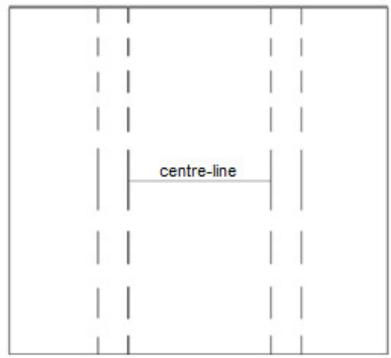
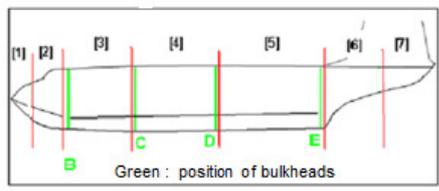
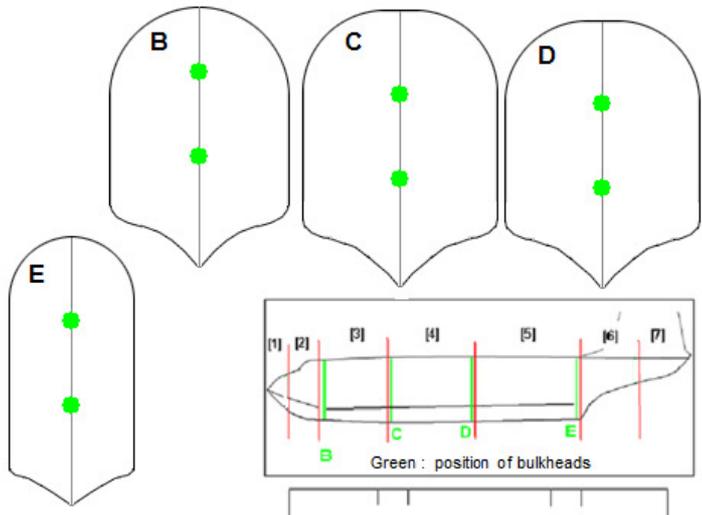
### Accessories

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

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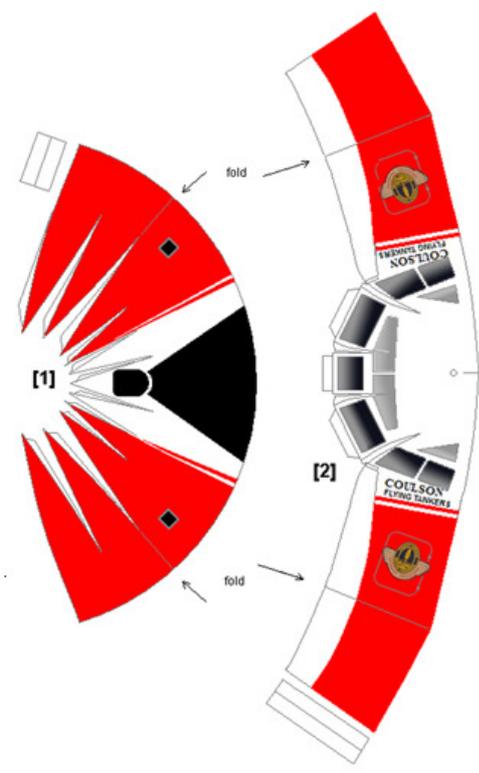




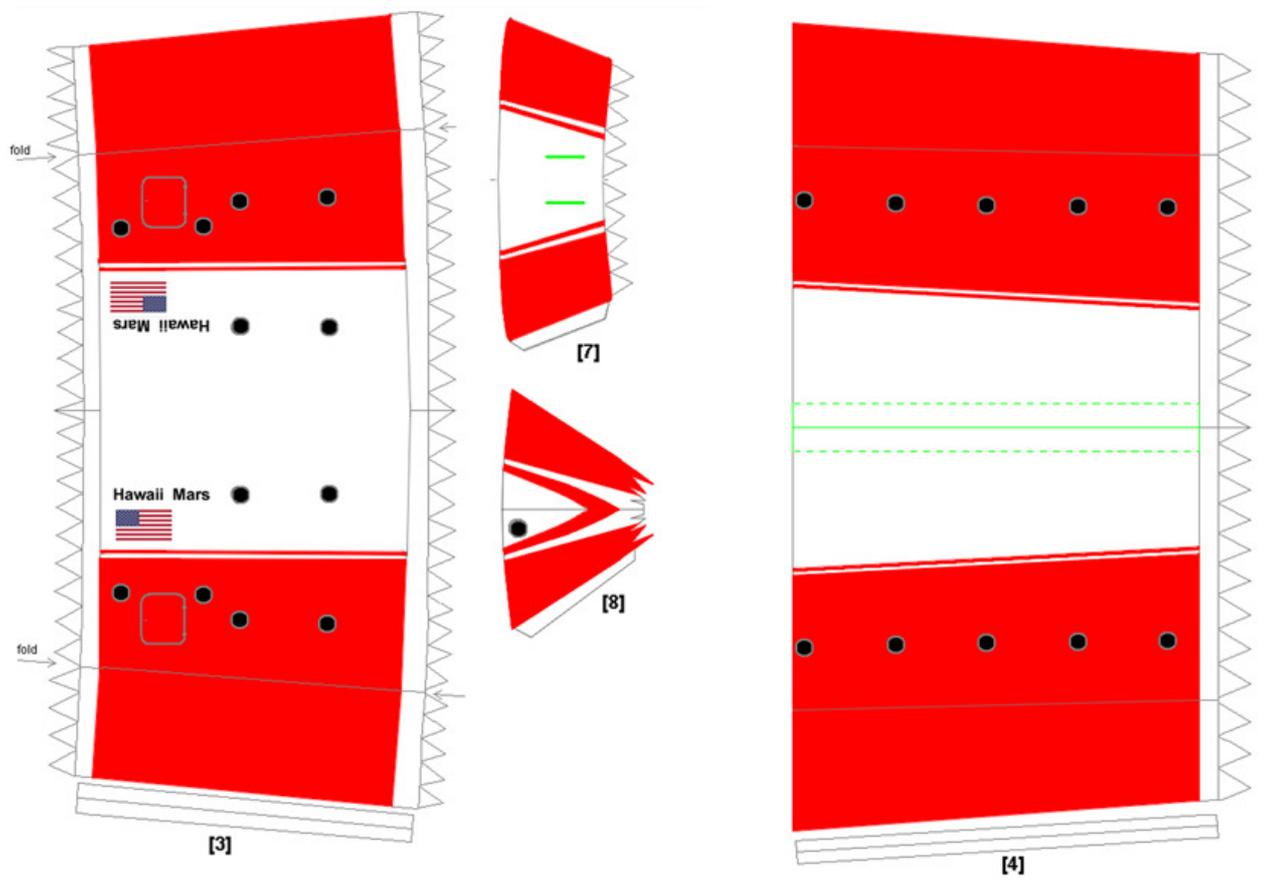


**Connection [18]**

Fold along the dashed lines to a rectangular box section. Insert in both Wing Stabilisers.

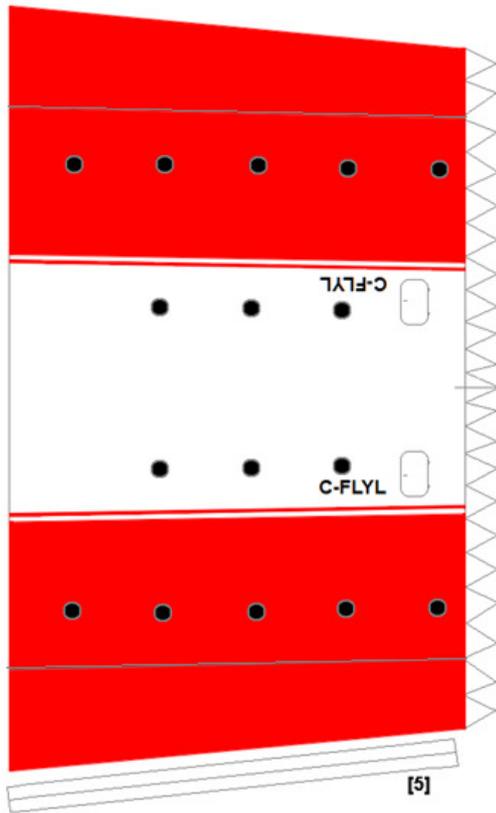


**Bulkheads B - E**  
Make 3x thick

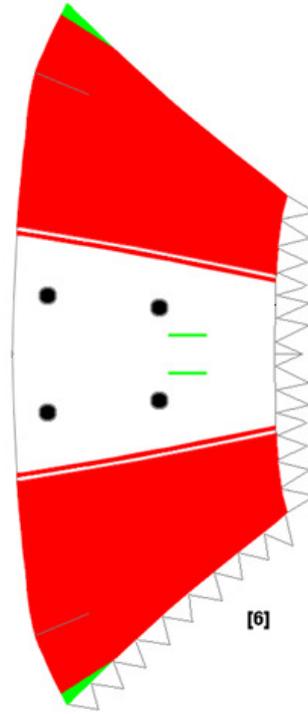


**Sheet 1**

Mm1\_144

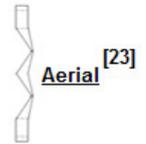


[5]



[6]

Wing Strut [13]  
Make 4 x thick



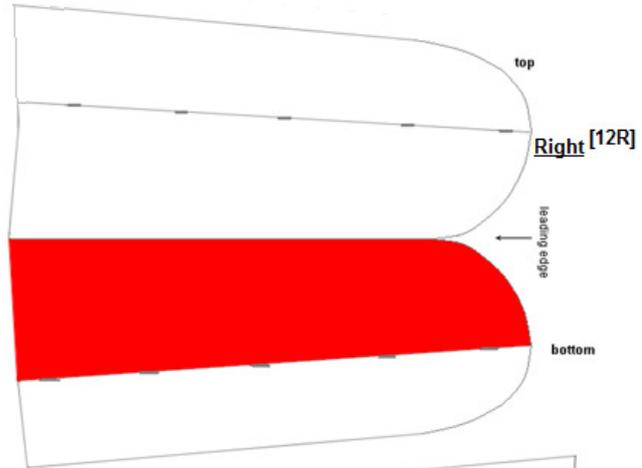
Aerial [23]



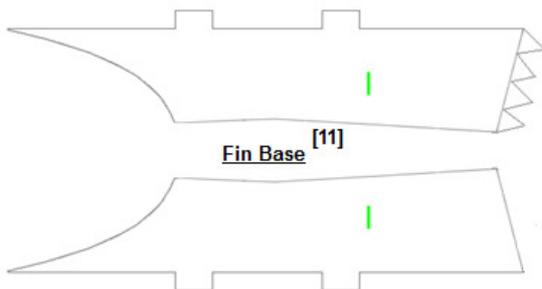
Fin [9]



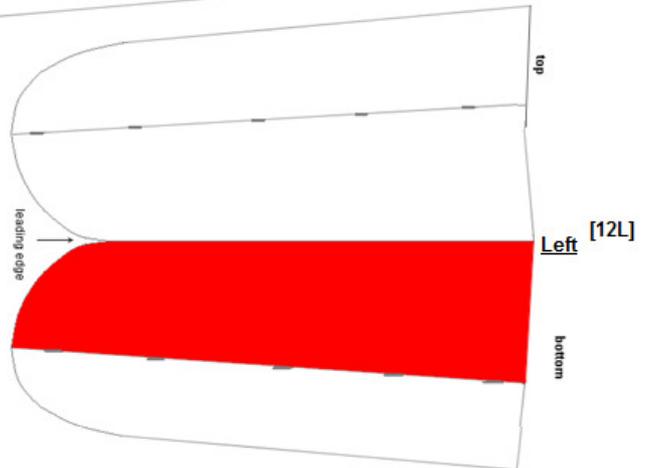
Fin Profile Strut [10]  
3 x thick



Right [12R]

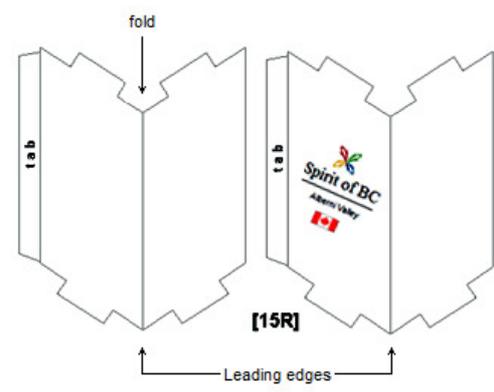
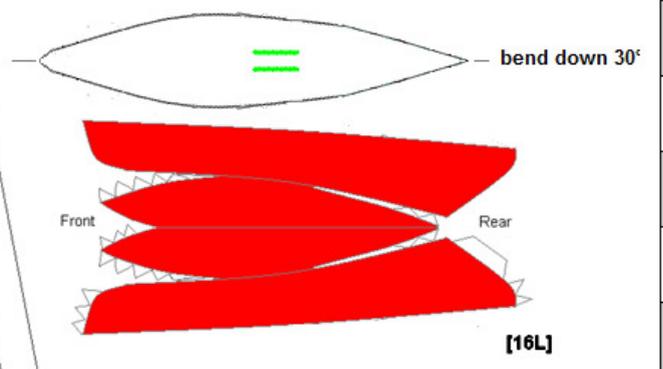
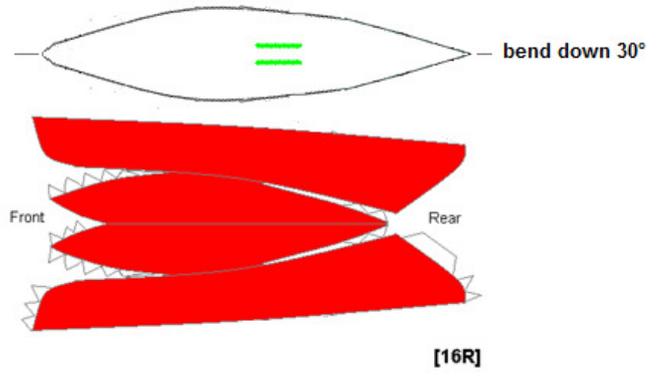
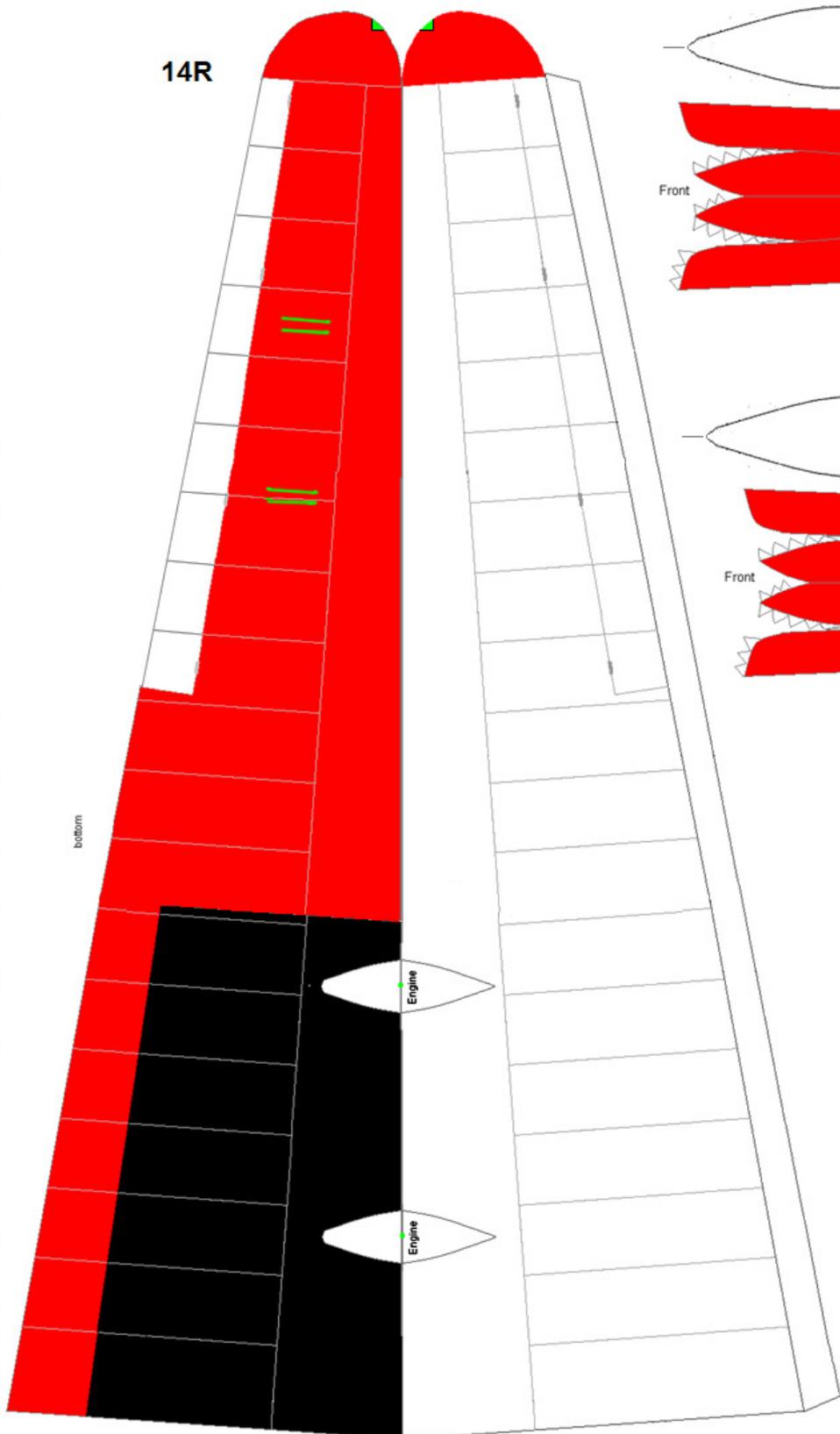


Fin Base [11]



Left [12L]

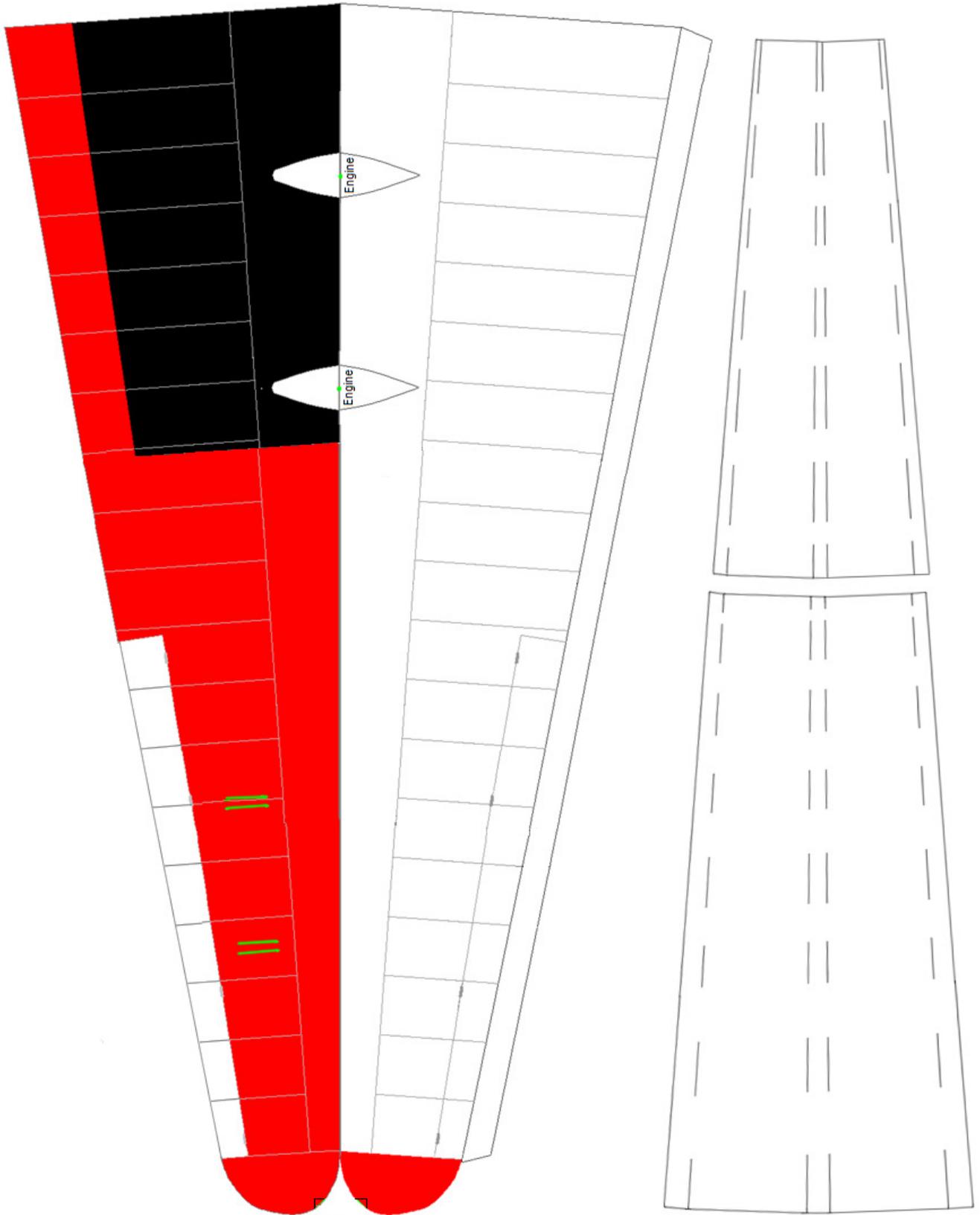
14R



Sheet 3

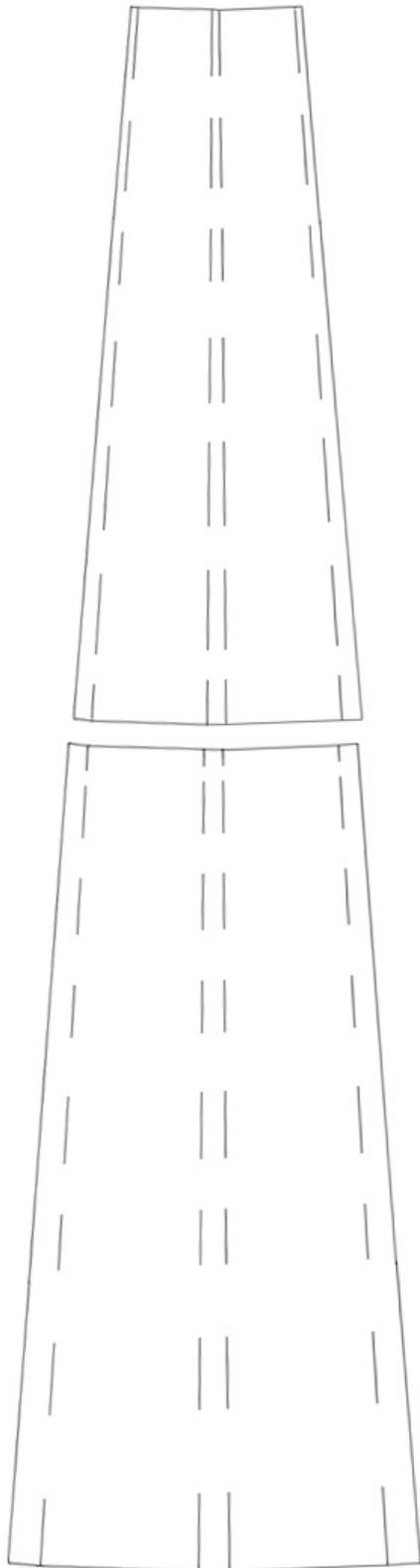
Mm1\_144

14L



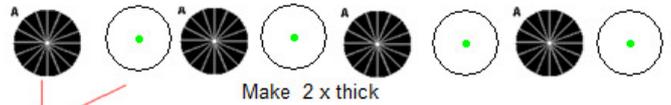
**Wing Stabiliser [17]**

Fold the 2 parts along the dotted lines and glue to a rectangular section. Slip the smaller one through the larger, and glue in place. After joining with the second stabiliser, this gives a total length of about 35-40cm.

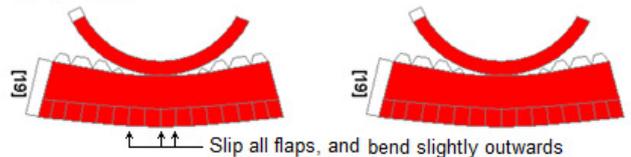
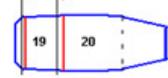


**Wing Stabiliser [17]**

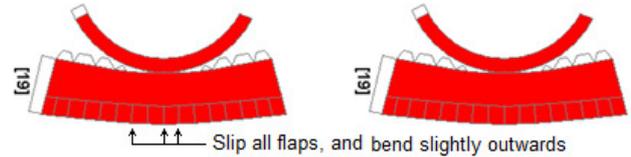
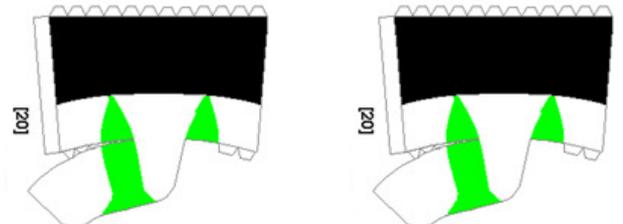
Fold the 2 parts along the dotted lines and glue to a rectangular section. Slip the smaller one through the larger, and glue in place. After joining with the second stabiliser, this gives a total length of about 35-40cm.



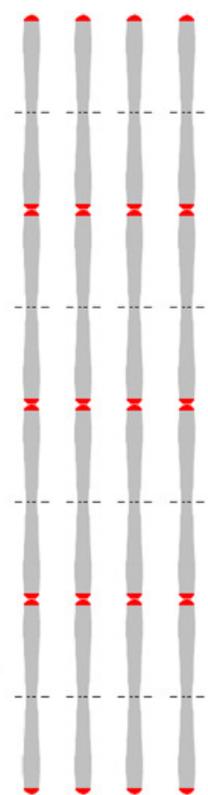
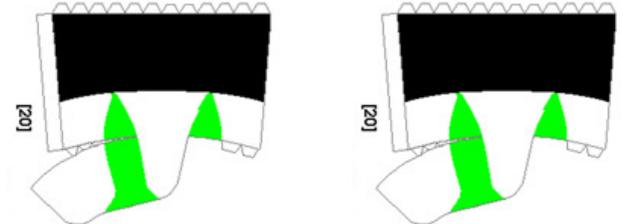
Make 2 x thick



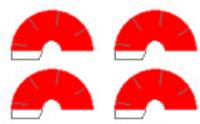
↑↑↑ Slip all flaps, and bend slightly outwards



↑↑↑ Slip all flaps, and bend slightly outwards



**4 4-bladed propellers [21]**



**Nose Cones [22]**



**Air Inlet Ducts [20A]**

Cut out, blacken the rear side, rooll 1/2 around a cocktail stick, glue in position

