

Plans for the (Foam) Wright Flyer for PowerUp 4.0

Instructions

Print plans at 100% scale on A4 landscape

Use lightweight foam sheet 2.5mm to 3mm thick

Use hot-melt glue to join parts together

The Wright Flyer model is designed to be powered by a PowerUp 4.0 power unit, with Bluetooth RC control via the iPhone or Android App.

Cut out the templates from the printed plans and transfer to foam sheets.

Cut out components from the foam sheet.

Note: Make the top and bottom wings from single pieces of foam sheet (without joins in the centre).

Mark out the centre line and positions of the fuselage rails and the wing supports on the top and bottom wings.

Carefully pre-bend the leading edges of the top and bottom wings to follow the curve of the wing supports and fuselage rails.

Jig up the fuselage rails 47.5mm between inner edges and glue the bottom wing into fuselage.

Note: The lower wing can slide into the fuselage on a diagonal and the slots in the wing help with alignment.

Glue the top wing to the top of the fuselage rails ensuring that the top wing sits square above the bottom wing.

Glue the wing supports to the top surface of the bottom wing.

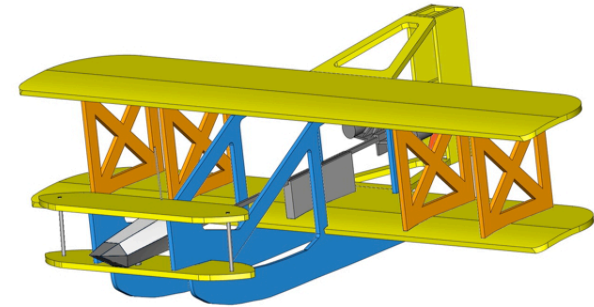
Note: The rear of the wing supports should be 4mm from the wing's trailing edge

Glue the wing supports to the underside of the top wing ensuring that the supports are square and vertical.

Glue the two vertical tail fins to the top, bottom and mid tail formers.

Glue the bottom tail support to the rear of the lower wing and glue the top tail support to the rear of the top wing.

Glue the top and bottom tail supports to the tail assembly such that the bottom of the tail assembly is 18mm from the bottom of the fuselage skids (The top tail support should be approximately 13 degrees from the horizontal)



Glue the top canard to the top surface of the fuselage ensuring that it is central and square.
Glue the bottom canard into the slot in the front of the fuselage ensuring that it is square/parallel to the top canard.
Push cocktail sticks through the top and bottom canards and glue into place.

Cut out a piece of 5mm thick, paper faced, foam board for the motor support.
Slot the top of the foam 2mm x 2mm for the PowerUp 4.0 module (Alternatively, use a PowerUp 4.0 foam clip accessory to attach the PowerUp to the motor mount.

Glue the motor support to the centre of the top surface of the lower wing, approximately 7.5mm from the trailing edge of the wing.

Attach the PowerUp 4.0 module to the slot in the motor support and secure with tape (or use the optional PowerUp accessory clip).

Fly the plane using the PowerUp 4.0 app. Using the Hammerhead plane setting as a starting point.
Adjust the centre of gravity (C of G) by sliding the PowerUp 4.0 module forwards or backwards.
Once the correct C of G is found, a blob of hot-melt glue can be added to secure the Power-Up 4.0 to the lower canard
A starting point for the C of G should be the leading edge of the main wings.
If the plane flies nose high and/or swoops up and down in flight, move the C of G further forward by sliding the PowerUp unit forwards.
If the plane dives or fails to climb, move the C of G rearwards.

Fine tuning of the flight characteristics can be made by using the tuning screen in the PowerUp 4.0 app.

The foam Wright Flyer has a 13" (330mm) wingspan and a flying mass of approximately 29g

The plane is not indestructible and is best flown over long grass.
Being constructed of foam it is easy to effect quick repairs using packing tape or hot melt glue.

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See Video instructions on YouTube Channel: **What's Going on in Doug's Shed?**

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Please “Like and Subscribe” the videos on the channel.

If you found these plans and videos useful, a small donation to Doug's beer fund would be appreciated.
Donations can be made, via PayPal, using the QR code link below (scan with your phone) or via the donation button or links on the
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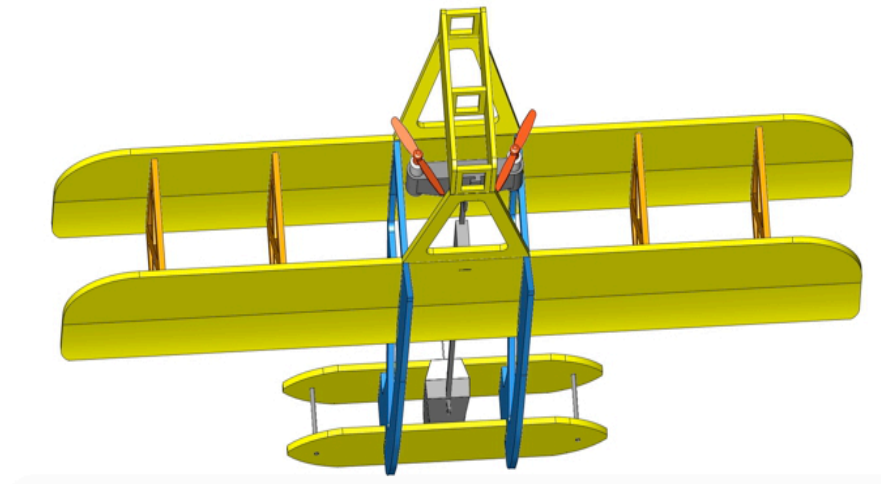


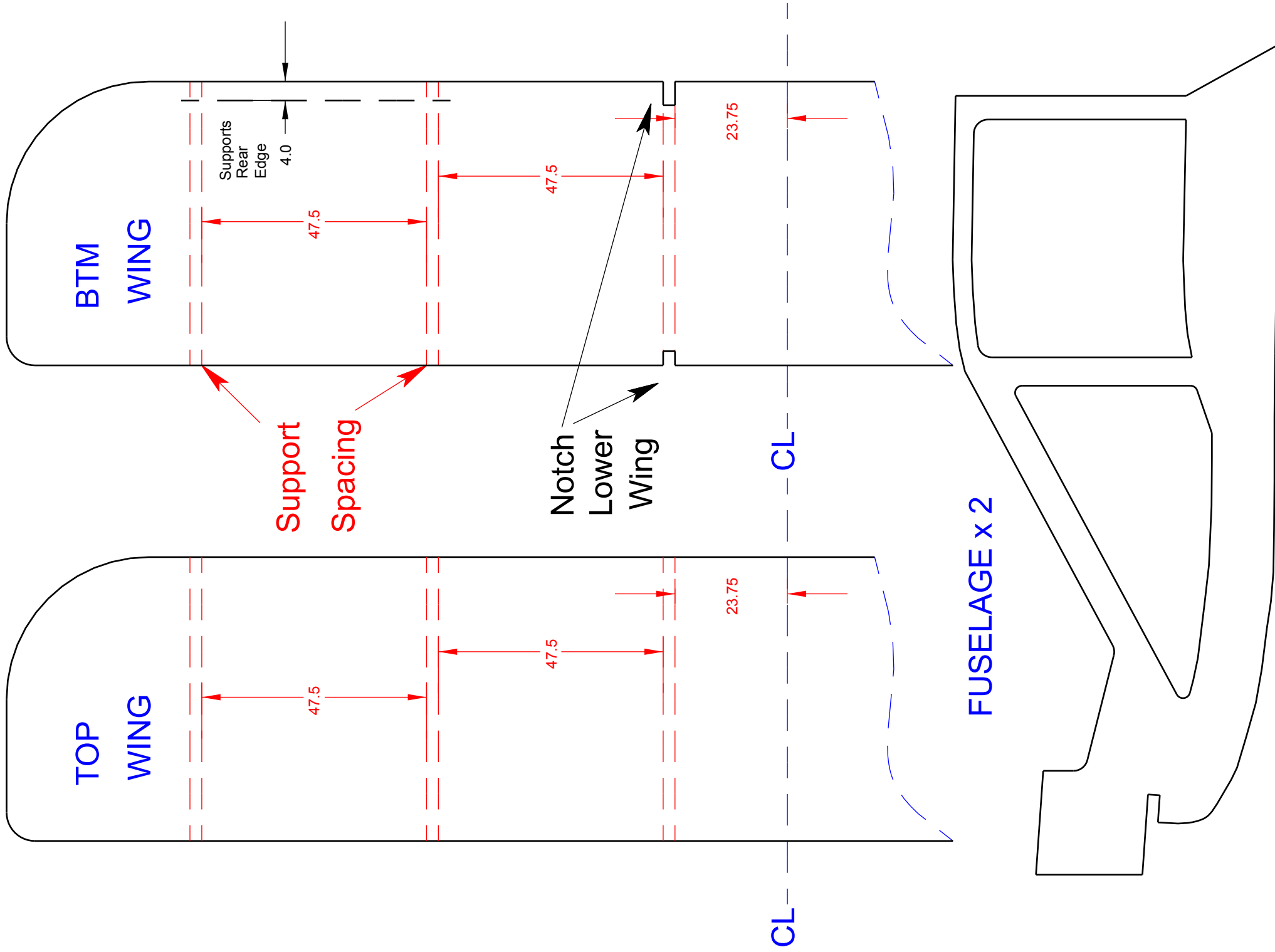
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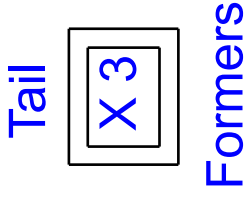
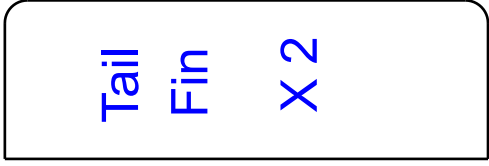
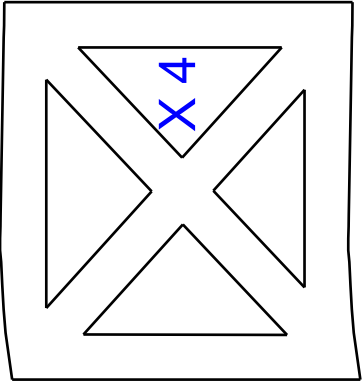
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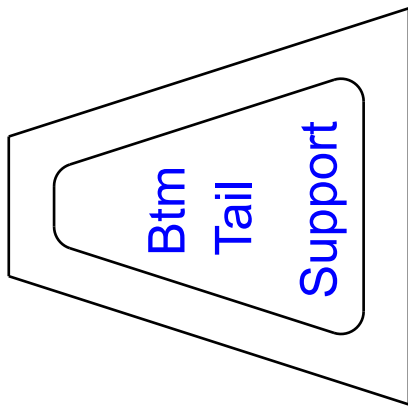
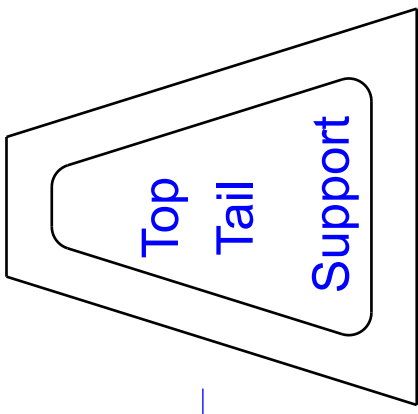
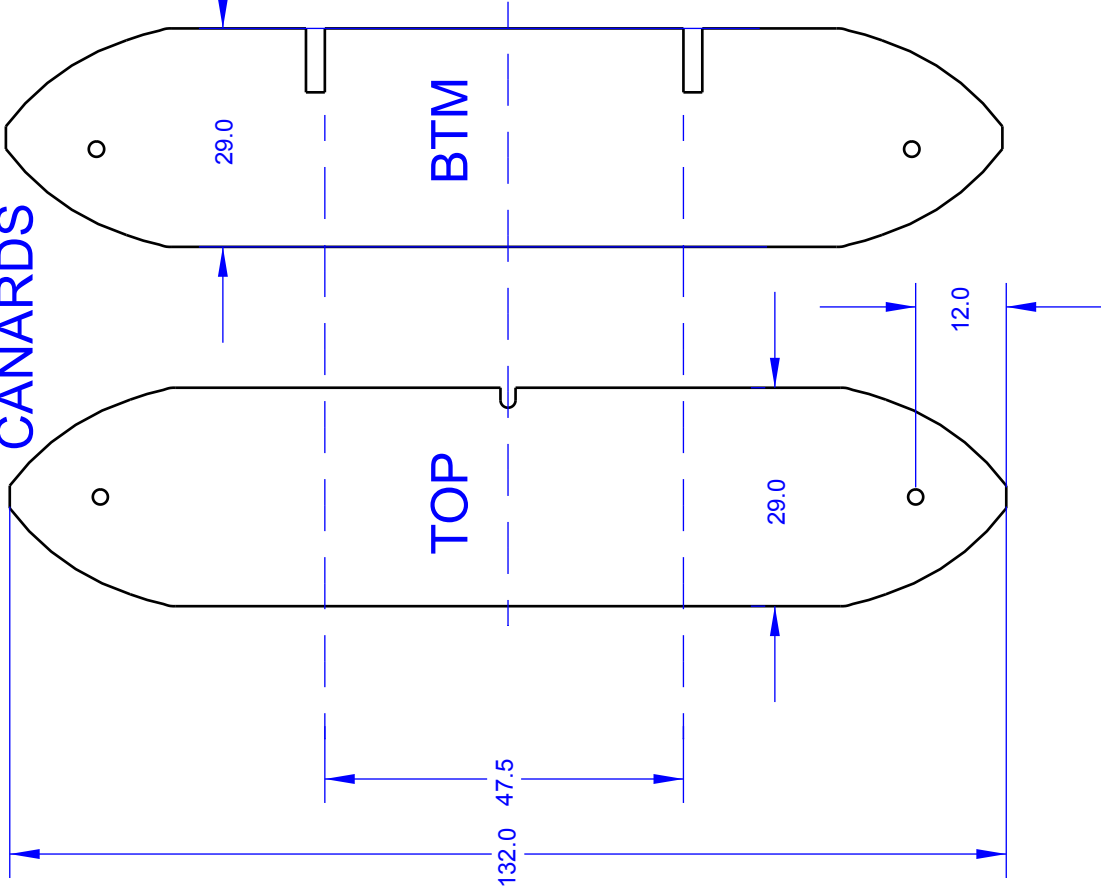




WING SUPPORTS



CANARDS

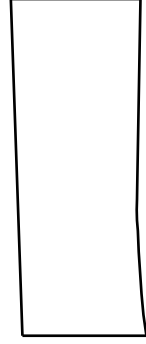


PowerUp 4.0 Support

Make from 5mm Paper-faced Foam Board

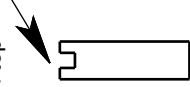
Slot 2 x 2mm
on top

Side Profile



Front

Rear



End
View

Mount on centre line of lower wing

Rear edge of mount 7.5mm forward of trailing edge of wing

Attach to lower wing with hot-melt glue