

# Trev's Foam Board Spitfire



## Introduction

I was born in Tamworth, England. As a kid my dad used to take me to Sutton Coldfield park to watch the model planes and gliders fly. I was captivated by the engineering, the planes and the flying. I really wanted to have a go..

Fast forward to 2020. One day I drove past the sign for the COMSOA flying field and noticed the gate was open, so I took my two boys inside to have a look. From that moment I was determined to a) build a plane and b) learn how to fly.

# Spitfire

My grandad, my dad and all of my uncles worked as sheet metal workers in the Jaguar cars factory in Castle Bromwich in the UK, each serving many decades of service in the Jaguar Factory. This factory was previously where many spitfires were manufactured (Castle Bromwich Aircraft Factory).

I realise that war birds aren't beginner planes, but I felt a pull to tip my hat to my heritage of manufacturing in Birmingham UK.

## Design Decisions

I knew that I didn't have enough knowledge to start by building a Balsa plane, also it would have been out of my price range. Luckily I came across the Flight Test guys on youtube who give away their plans for free and provide excellent detailed videos. The Flight Test guys build planes out of foam board and hot glue. It's cheap and surprisingly effective. A great way to get into building. I cannot recommend the Flight Test guys enough; they are amazing.

<https://www.flitetest.com/>

Some changes I made to that initial design are;

1. I didn't glue the wings to the fuselage, instead I attached them with bolts and nuts.
2. The plane is 1.5 times the size of the Flight Test plane.
3. I reinforced it with glass fibre and wood.

## Building the Spitty

### 1. The Plans

First of all I downloaded the PDF of the spitty from the Flight Test website. I then made the plan 1.5 times bigger using an online PDF enlarging tool. From there I sent the plans off to OfficeWorks for printing.

<https://store.flitetest.com/ft-master-series-spitfire-wr-1220mm/>

<https://www.pdf2go.com/resize-pdf>

## 2. The cutting

I wanted to be able to reuse the plans, for this reason, I didn't want to stick them to the foam board. I decided to cut around the edge of the lines of each part, then use the cut out parts to trace the shapes onto the foam board. Not sticking the plans to the foam board avoided issues at the painting stage, as the glue would prevent the paint from adhering. As a bonus I was able to place the parts closer together and, therefore fit more pieces onto the foam board which in turn minimised waste.

I chose to cut all the parts out before beginning the assembly. I took my time and followed the tips in the Flight Test video.

[https://www.youtube.com/watch?v=sSOEHwU\\_ENU&t=8193s](https://www.youtube.com/watch?v=sSOEHwU_ENU&t=8193s)

## 3. Sourcing the materials

I recommend the following websites to get electronics/parts;

[www.bunnings.com](http://www.bunnings.com)

[www.hobbyking.com](http://www.hobbyking.com)

[www.banggood.com](http://www.banggood.com)

[www.frontlinehobbies.com](http://www.frontlinehobbies.com)

<https://www.banggood.com/>

The best place I found to get foam board was from Front Line Hobbies. I needed a lot more foam board than I first thought I would need. The foam board from Front Line Hobbies peels more easily than the foam board from OfficeWorks. I bought the glue gun and glue from Bunnings.

## 4. Bill of materials

- Foam board
- 1 mm music wire
- 4 in1 water based undercoat
- Water based floor polyurethane
- Hot glue
- Hot glue sticks
- Bolts and nuts big enough to attach wings
- Masking tape
- Sticky labels to help mend mistakes
- 120 and 240 grit sandpaper
- Carbon tube 1.5mm hole
- 7mm and 3mm plywood
- Water based paint of your colour choice
- SpakFilla
- Thin glass fibre cloth
- Hobby knives
- Balsa wood sheet, 6mm thick
- Paint brushes
- Brushless motor

ESC  
5 servos  
Receiver  
Transmitter

## 5. The building

It would be silly to repeat what's in an already excellent video, search youtube;

[https://www.youtube.com/watch?v=sSOEHwU\\_ENU&t=8193s](https://www.youtube.com/watch?v=sSOEHwU_ENU&t=8193s)

[All pictures can be found at:](#)

<https://photos.app.goo.gl/LJGw6JAcVZiN4DSn9>







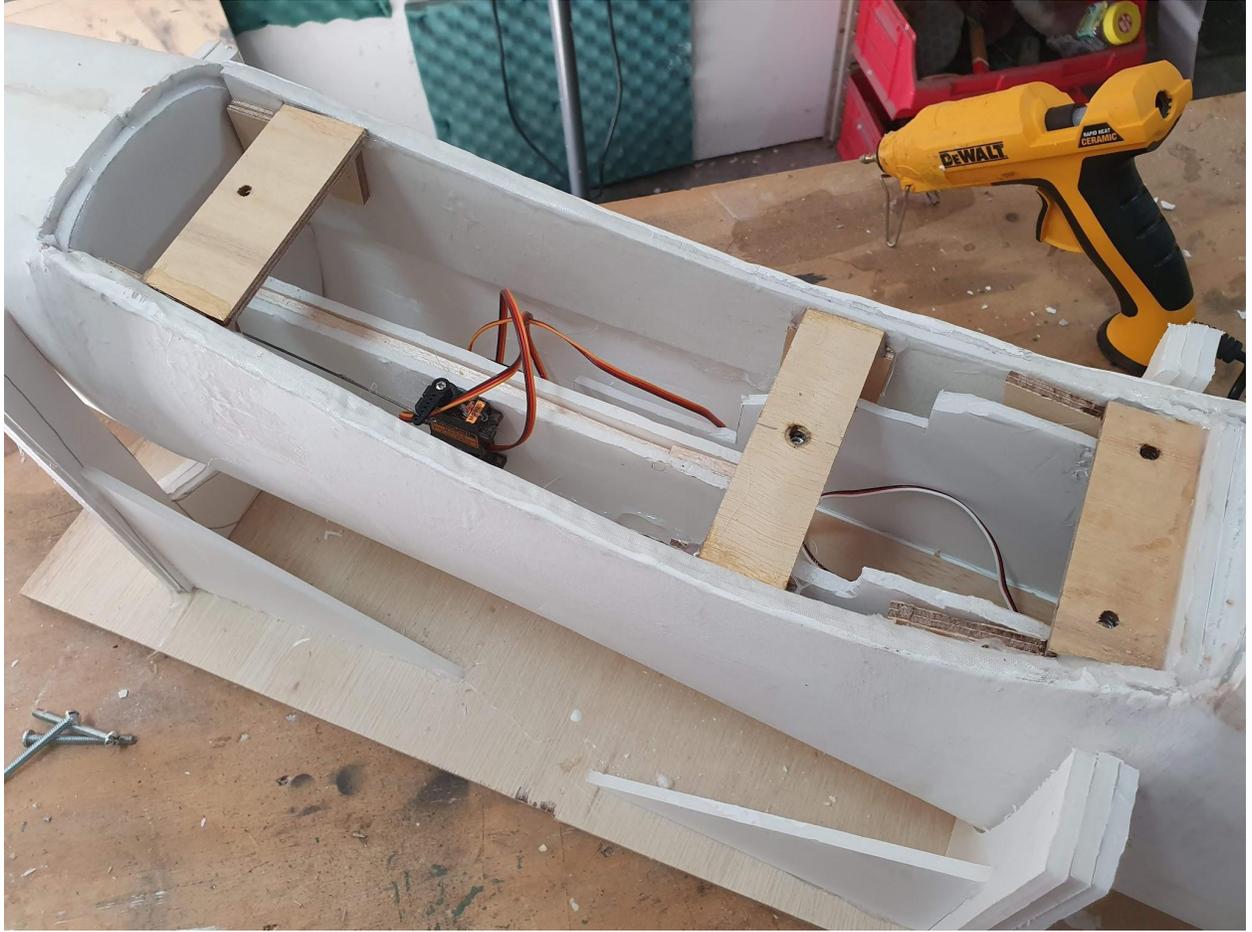


























## 6. My tips

I would highly recommend taking a long time to build the plane, building small sections at a time. Taking a longer time will avoid the temptation to rush and will prove a more enjoyable experience.

- a) You can sand the foam board, something I didn't realise at first - this helps to correct the mistakes.
- b) Use SpakFilla from Bunnings to fill the foam if you have any dings, it's very light and cheap.
- c) Get a reasonable selection of hobby knives, they are cheap and make it easier.
- d) Get a big 1 meter ruler, and a small 30 cm ruler.
- e) Reinforce your model with lightweight rc plane glass fibre cloth. To stick the fibre to the wings and fuselage I used water based polyurethane for floors from Bunnings.
- f) Use plywood and balsa wood to reinforce sections of the fuselage. I reinforced my model as it is 1.5 times bigger than the original from Flight Test. Refer to the pictures for more details. I used wood for the main fuselage spar, wing spars and where the wings join the fuselage.
- g) To fill the weave of the glass fibre I used both SpackFilla and 4in1 water based primer from Bunnings.
- h) To seal the foam board I used the same water based polyurethane for floors.
- i) To achieve the blurry edges at the edge of the cammo, I turned off the fan control of the spray gun, turned the air down very low, and turned the paint flow down very low to make a tiny spot when spraying. I then followed lines of the cammo creating a soft edge.

# Conclusion

At present I've spent around 3 months very slowly building the Spitfire. However, when I previously built the Flight Test Explorer it only took 4 days. I've flown more than 50 flights in that FT Explorer plane, so it's a reliable plane and is quicker and easier than the spitfire. The Spitfire is a little harder but not overly so. It's been extremely enjoyable building the Spitfire and the process has been satisfying. Please feel free to contact me with any questions;  
[trevorlvs@hometown.com](mailto:trevorlvs@hometown.com)

## The maiden flight...

This hasn't happened yet, watch this space.

## A special thanks

Thanks to all those that gave me tips at the field. A special thanks to Andrew, Alistair, Anthony Ogle and Dave Horan for their time and patience with my beginner (and sometimes silly) questions.