

# Spitfire Toy Model Airplane

## Introduction

This toy model airplane is primarily based upon plans for a model Spitfire. Since it is intended to be a toy rather than a display model, liberties were taken when creating the plans to make the toy robust. The toy in the accompanying pictures is made from pine, but any non-toxic wood can be used.

The model plans can be easily modified based upon the available tools and skill level. The fuselage is cut from 2x3 or 2x4 material and the wing is cut from a 2x4 material. All parts can be cut using a band saw, jigsaw or handsaw. The wing has a dihedral angle and incorporates a slight taper, both of which can be cut using a band saw. If a band saw is not available, the wing can be made flat. The taper can be carved / planed or alternately left as a uniform thickness.

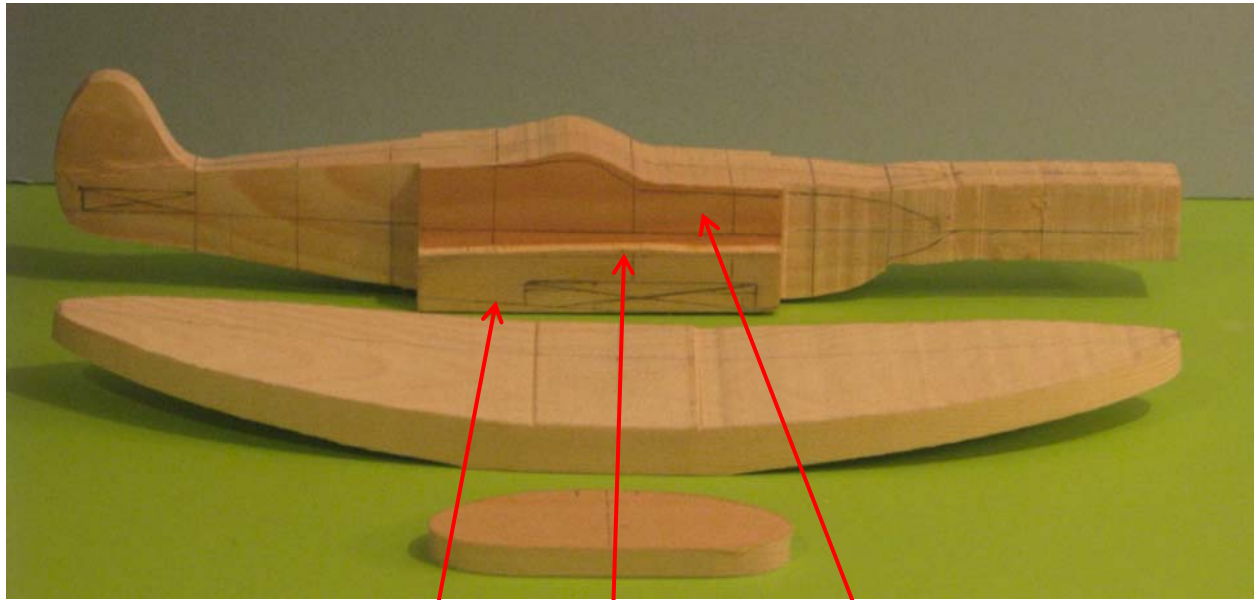
Because this is intended to be a child's toy, it is important that a non-toxic finish be applied. A quick search of the internet reveals there are several non-toxic finishes which people use – baby oil, bees wax, shellac, etc.

The plans include the various views along with sectional templates. Simply cut out the views and templates and glue to cardboard or other suitably stiff material. Cut and trace the various views onto the wood.

Since this is a toy, feel free to be creative and change the plans as required to suit. Most importantly, ENJOY the experience of making a toy for children to play with which allows them to use their imagination.

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**Figure 1**  
**Rough Cut Outs**



Addition of ¼" piece glued to side of fuselage cut out for wing flare \*

Portion of fuselage left uncut to accommodate wing fillet \*

Centre and station lines penciled onto cutout

- Fuselage, wing and horizontal stabilizer cut out.
- Centre lines and section stations lines are penciled on. Note: these lines may have to be redrawn several times as material is removed during the carving process. It is recommended that the centre and section lines be drawn on all four surfaces of the cut out to allow easy recreation if required.
- The Spitfire has a wide flare out where the trailing edge of the wing meets the fuselage. To incorporate this detail, a ¼" thick piece was glued to the side of the fuselage to widen the cut out. The toy can be built without this flare which simplifies cut out and carving
- Note a tang is incorporated at the front end of the fuselage to facilitate clamping to a workbench, vice, etc. for drilling, carving and sanding. It will be removed at the end after sanding is completed

\* The wing fillet and flare can be omitted which simplifies cutting and carving.

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**Figure 2**  
**Cutting and Shaping Components**



- Rabbet cut in fuselage for wing. It is recommended to cut the width slightly smaller than the width of wing. The wing can be trimmed to fit using a block plane or by sanding.
- Mortise cut at end of fuselage for horizontal stabilizer.  $\frac{1}{4}$ " holes are drilled and then chiseled to final width and length.
- Edges of wing and horizontal stabilizer are rounded to approximate shape using block plane, chisel, file or rough sandpaper. Note the edges adjacent to the fuselage have not been shaped. These should be shaped in place after the wing and horizontal stabilizer have been glued in place.

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**Figure 3**  
**Dry Fit Wing and Horizontal Stabilizer**



- Horizontal stabilizer and wing are dry fitted to fuselage. Take your time when fitting the components to keep the joints tight.
- Check to ensure horizontal stabilizer is at right angle (90 deg.) to the vertical stabilizer and parallel to wing. This is easily accomplished by sighting down the length of the fuselage from the propeller end. Perform minor trimming of mortise as required.

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**Figure 4**  
**Rough Out Fuselage Shape**



- Fuselage is rough shaped using chisels and/or files. Note, the material for the wing fillets and flare have not been shaped.

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**Figure 5**  
**Glue Up**



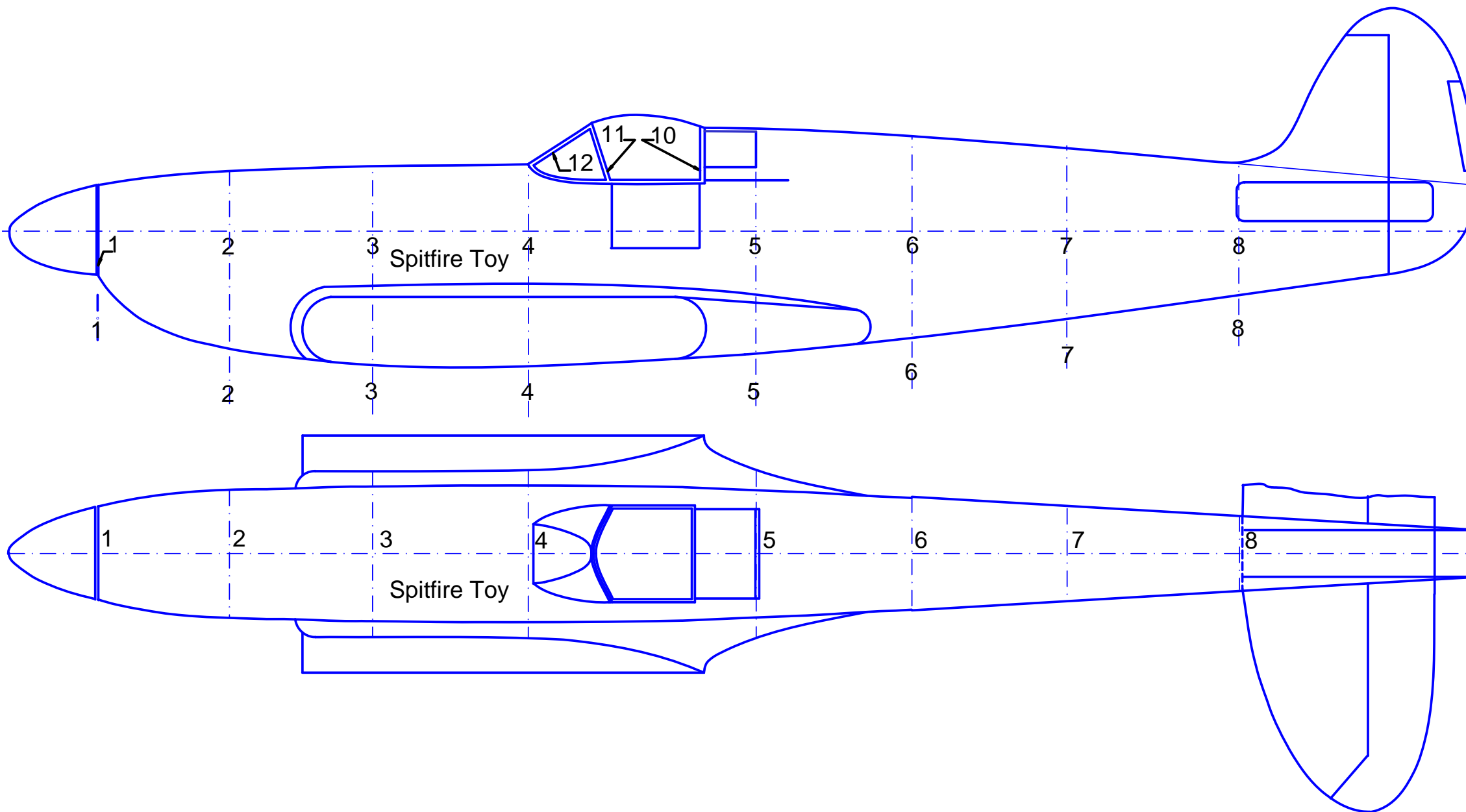
- Wing and horizontal stabilizer glued in place.
- Sight down fuselage from propeller end to sure horizontal stabilizer is at right angle to vertical stabilizer and parallel to wings.
- If there are gaps in the joints, mix a little sawdust with the glue to close the joint(s).

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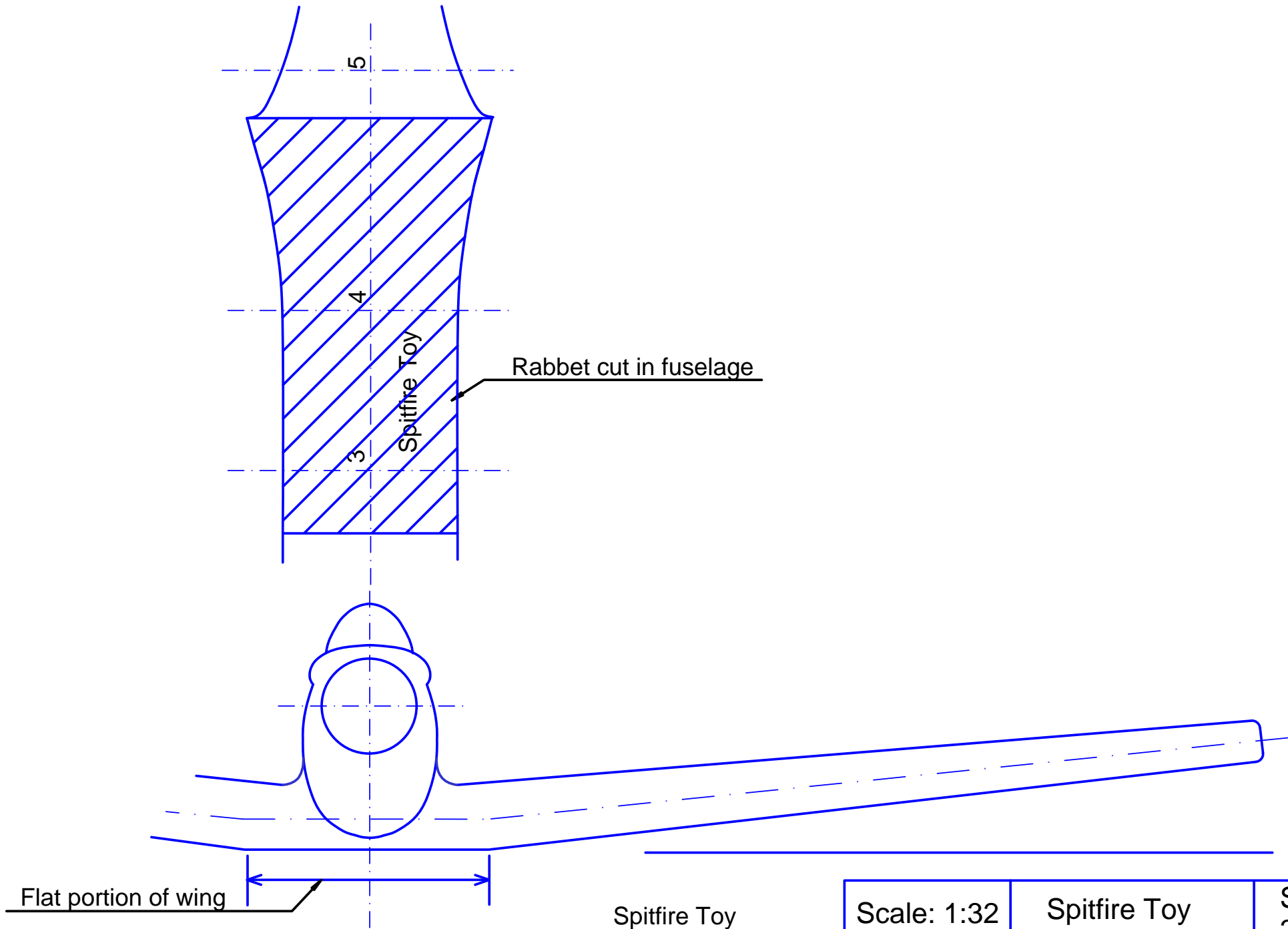
**Figure 6**  
**Final Shaping, Sanding & Finishing**



- After glue up, shape wing fillet and flare. A gouge chisel or a thin straight chisel and sanding paper on a dowel can be used to create the curvature.
- Blend the wing flare with the fuselage using a rat tail (round) file or sandpaper on a dowel.
- Perform final shaping of wing and horizontal stabilizer edges using file or rough sandpaper
- Sand toy. Start with 80 or 120 grit and work up to 220 or 320 grit.
- When sanding is complete cut off tang at end of propeller hub tip. Shape propeller tip using a carving knife, file, chisel, etc.
- Cut groove where propeller hub meets fuselage to accent the hub. Use, triangular file, hacksaw blade, etc. to cut groove.
- Sand propeller hub.
- Set aside for an hour or more. Then inspect for imperfections. Sand as required.
- Apply desired finish.







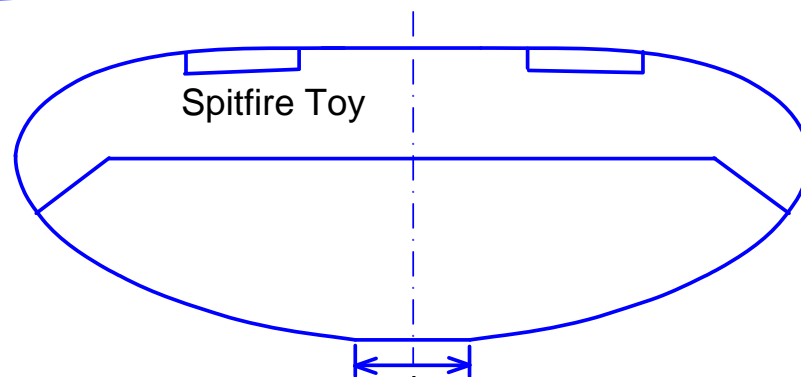
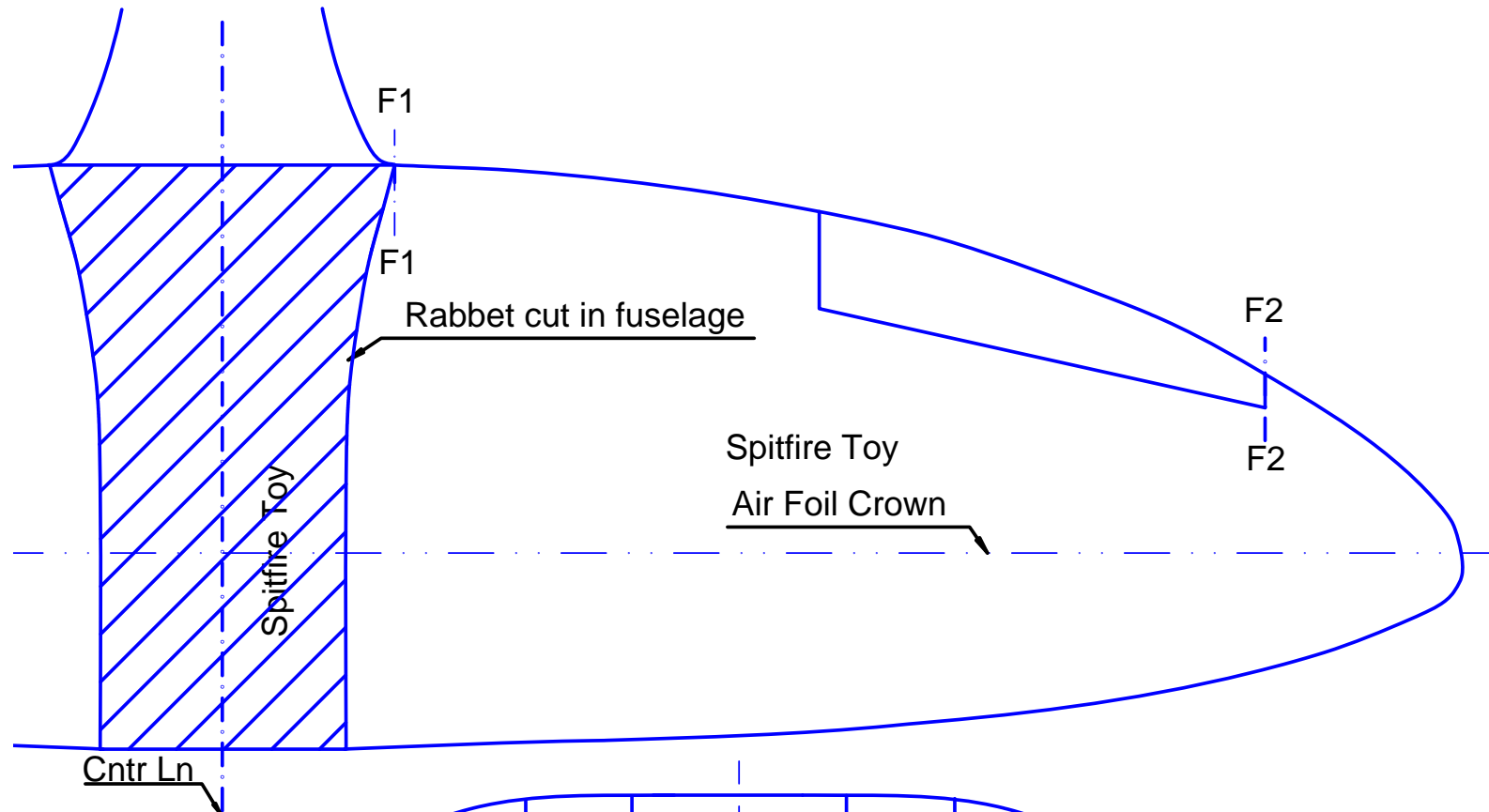
Spitfire Toy

Scale: 1:32

Spitfire Toy

Sheet  
2 of 4

Rev 0



Straight profile to insert in fuselage

Scale: 1:32

Spitfire Toy

Sheet  
3 of 4

Rev 0

