



USER GUIDE

print your own plane



**3D LabPrint Supermarine Spitfire Mk XVI
ver.1.1**



Contents

Table of contents	.....1
Introduction	.....2
History	.....3
Drawings	.....4
General specifications	.....5
Step by step PDF/VIDEO guide	.....6
Choose airplane	.....6
Select printer	.....6
Register and complete order	.....6
Print it	.....6
Assembling printed parts	.....7
R/C equipment preparing	.....7-8
Instaling R/C equipment	.....8
Before flight check	.....8
Go Flying	.....8

3D Lab Print Supermarine Spitfire Mk XVI - fully printable R/C plane for your home 3Dprinter

Future of flying - Print your own plane

The first fully printable airplane with suitable files prepared for your 3Dprinter. Flight characteristics are comparable or even better than classic build model airplane.

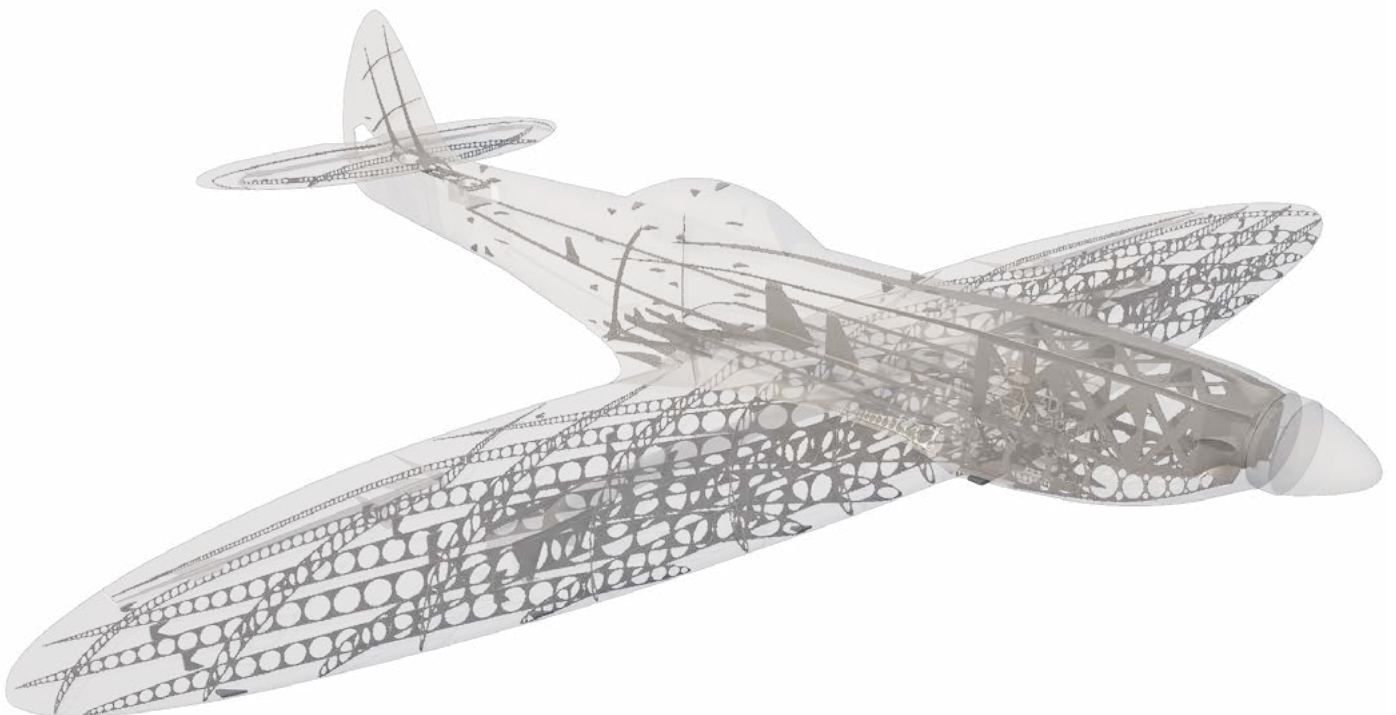
Simply download and then print it anytime you need only for \$10 (filament cost).

This is not a dream, now you can print this HI-TECH ... at home, print spar parts, and so on...

Both parts the wing and the fuselage features extensive hitech 3d structural reinforcement which makes the model very rigid while still maintaining light-weight airframe and exact airfoil even when it is made only from plastic. This perfect and exact 3d structure is possible only due to additive 3dprinting technology. So welcome to the 21th century of model flying. Be The first at your airfield. Of course we complies with the ACES aircombat rules.

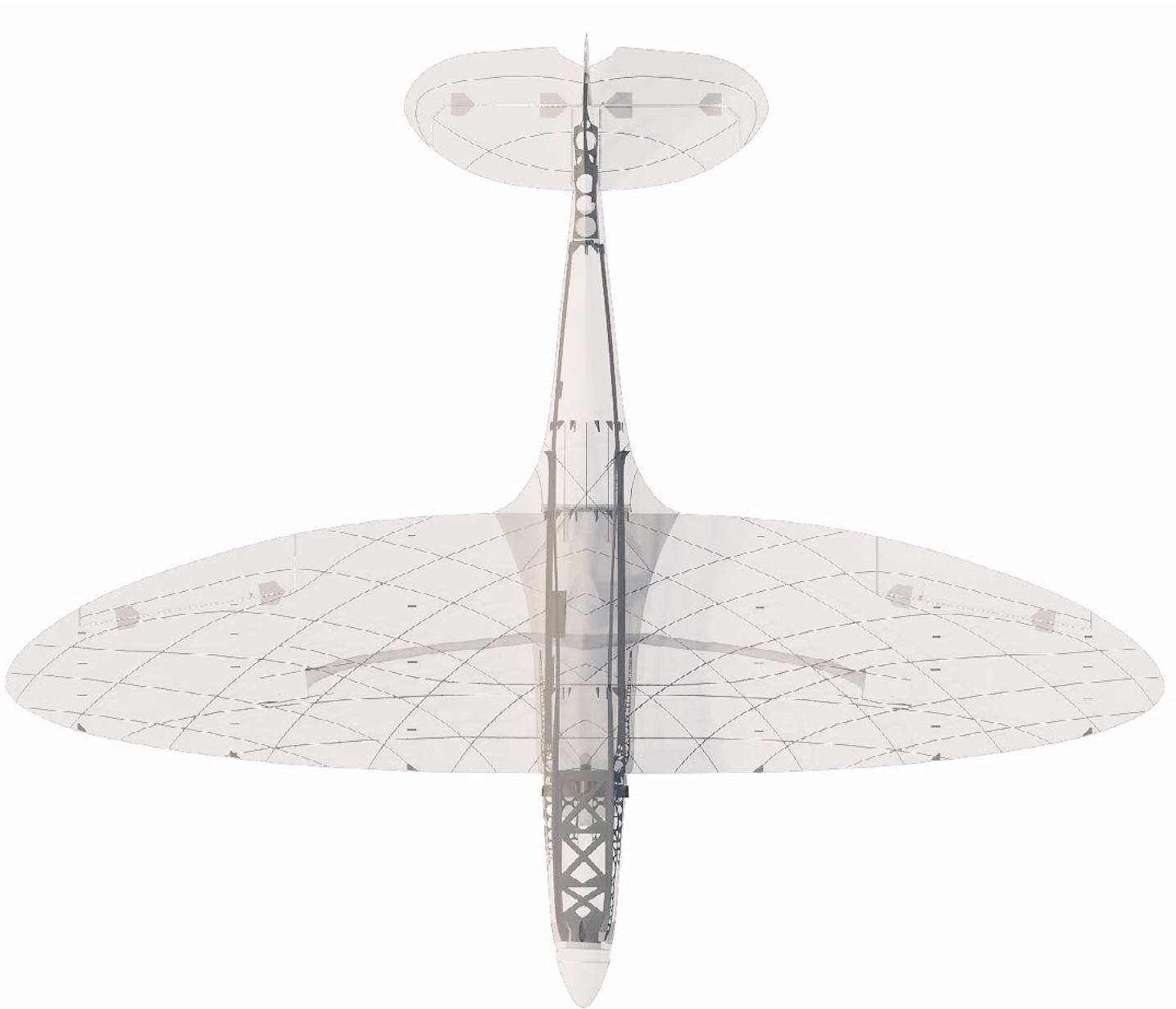
Easy to assembly, you do not need any extra tool or hardware, you only need to glue printed parts together. The rest of the assembly is very easy. Simply add brushless motor, ESC, servos and radio system. Don't worry, detailed step by step PDF/VIDEO is included.

You will get superb performance airplane with High efficient powerplant which let you fly 7+ minutes at full throttle with the speed exceeding 150 kph. On the other hand low stall speed is achieved for easy landing.



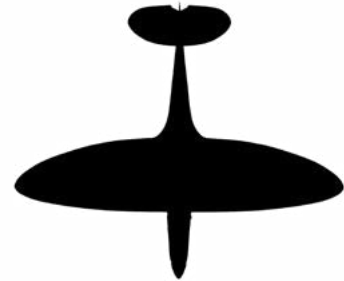
Supermarine Spitfire Mk XVI, History

The prototype of the Spitfire, designated Supermarine Type 300, took to the air for the first time on 5th March, 1936. The fighter was designed with a maximum accent on the aerodynamic cleanliness - its Chief designer, Mr. Reginald Joseph Mitchell utilised the experience gained during the design and development of the racing seaplanes. The fact that the experience paid its dividend has been proven by altogether 24 versions produced and with a total of 22 000 machines manufactured within following thirteen years...



General specifications

Lenght:	800mm
Wingspan:	973mm
Height:	210mm
Wing area:	16.8 dm ²
Wing loading:	50.1 g/dm ²
Airfoil:	aircombat modified
Print weight:	432g
Empty weight:	638g
Takeoff weight (6s 1300 lipo):	840g
Max takeoff weight:	1100g
Never exceed speed, VNE:	205 km/h
Design maneuvering speed, VA:	165km/h
Stall speed, VS:	30 km/h



Powerplant

Propeller:	aeronaut ELP 9/6 or APC 9/6 – 9/7.5
Motor:	AX-4008Q/620KV, 22pole brushless HE electric motor
ESC:	Castle Creations TALON 25
Battery:	Turnigy nanotech 1300 mAh/6s/22.2V, 206g, 25C

Performance measurment

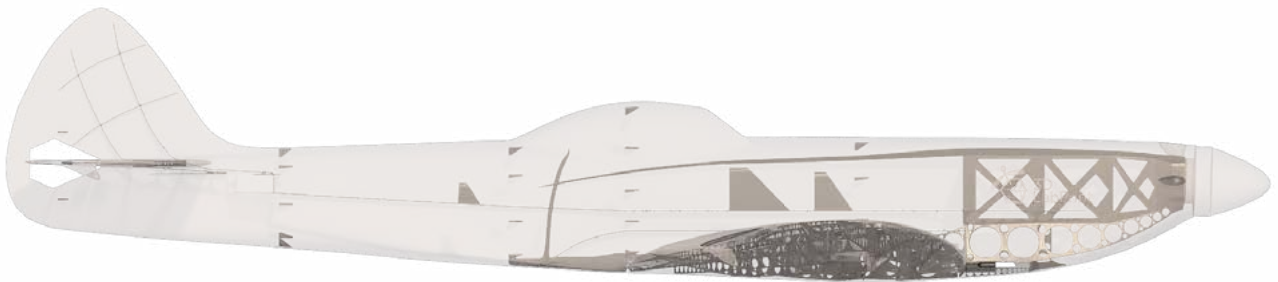
Max RPM and Amps (static):	12 000/min with APC 9/6, current 19A 11 550/min with APC 9/7.5, current 21A
Max RPM and Amps (level flight):	13 700/min with APC 9/6, current 12A 12 400/min with APC 9/7.5, current 13.5A
Max speed VH (level flight):	135 km/h – 67.5kn – 78 mph with APC 9/6 150 km/h – 73kn – 84 mph with APC 9/7.5
Rate of climb:	29 m/s (5 373 ft/min) with APC 9/6 32 m/s (5 728 ft/min) with APC 9/7.5
Flight time (6s 1300mAh/full):	7:40 with APC 9/6 5:30 with APC 9/7.5 7:40 with aeronaut ELP 9/6





973mm

210mm



800mm

Step by step PDF/VIDEO user guide:

1. Choose airplane at www.3Dlabprint.com

2. Simply select your 3Dprinter category from dropdown menu.

There are a different variations for 3Dprinters, so find your printer model/category, select and proceed to check out.

If you can not find your printer model you can still select **RepRap UNI 195x195x150** which works with classic Gcode. This file is suitable for many and many RepRap printers (Marlin/Repetier/Sprinter..., Prusa i3 and so on) The only thing your printer must have is a build volume 195/195/150 (250/120/150) or bigger and nozzle diameter 0.4mm.

If you feel a little bit confused with choosing proper files feel free to contact us at support@3dlabprint.com. We will try to help you out or add gcodes suitable for you.

We also offer one more possibility. In all variations of our files there are always SIMPLIFY3D factory files included, so you can open it and edit it as you need (Simplify3D software needed).

The only mandatory thing is nozzle 0.4 and sufficient build volume of your printer....

And finally, there's the choice only for the true experimenters **STL files** containing source model, of course, without our slicer setting, which is very important for the outcome (the ratio of weight / strength etc.). And please note that only few slicer software is able to work with such a complex model (we have a good experience with Simplify3D)

[See video guide #1](#)

3. Register and complete order

After checkout You will get a download link to your email, download it and unzip it.

After unzipping you get several Gcode and Factory files, select your PLA filament diameter 1.75mm or 3.0mm

There are two ways to print it:

The simple way - save Gcode files to your SD card (you don't need any slicer software)

The expert way - open Factory file (you will need Simplify3D software) edit it the way you need and export gcodes...

[See video guide #2](#)

4. Print it

Insert SD card in your printer, prepare your printer and you can start printing the first gcode file and then next and so on...

[See video guide #3](#)

you will need: PLA filament - good quality PLA
Strong hair spray
Razor blade

5. Assembling printed parts

5.1 Wing assembling

Glue wing parts with CA glue together, use activator and instal ailerons...

[See video guide #4](#)

you will need: [CA Glue - medium](#)
[Activator for CA Glue](#) or similar
[AC Hinge Sheet](#) or similar
Scissors
Snap knife
Some cloth for wiping CA glue...

5.2 Fuselage assembling

Glue with CA glue fuselage parts together, use activator, instal elevator, instal peg, if needed tune parts shape with knife or sandpaper...

[See video guide #5](#)

you will need: [CA Glue - medium](#)
[Activator for CA Glue](#) or similar
[AC Hinge Sheet](#) or similar
Scissors
Snap knife
Sandpaper
Some cloth for wiping CA glue...

6. R/C equipment preparing

6.1 Complete your RC Powerplanr unit, You have to solder connectors (3.5gold) for motor, speed regulator(ESC) and battery(xt60)...

[See video guide #6](#)

you will need: [Motor - AX-4008Q-620KV](#)
[Speed controler \(ESC\) - CC Talon 25](#) or similar 25A/6s
[3x PAIRS, 3.5mm Gold Connectors](#) - optional
[Li-Pol Battery 1300mAh/6s](#) - Turnigy nano-tech
[Male XT60 connector](#)
[Shrink Tube black](#), [Shrink Tube red](#)
Solder wire and Soldering Iron
[Hands free Holder](#) - optional

6.2 Test and center all servos with servo tester or transmitter, then instal horns in midle position, plug extension wires and cut wing Servos mount...

[See video guide #7](#)

you will need: 3x [9g Servo HXT900](#)
3x [Servo Lead Extension](#) or similar
Your R/C transmitter and receiver or servotester with batt.
Small screwdriver+
Snap knife
Soldering Iron or Small handsaw or Dremel

7. Instal prepared RC equipment: Motor, ESC, Servos...

[See video guide #8](#)

you will need: Printed motor mount

2x Screw 3/12mm

Small screwdriver+

Your earlier prepared R/C equipment

3x Self Tapping Screw M3x8mm or similar

8. Made 3x pushrod and connect within servos and arms (ailerons and elevator)...

[See video guide #9](#)

you will need: Steel pushrod, diameter 1 - 1.2mm

Pliers

[CA Glue](#) - medium

[Activator for CA Glue](#) or similar

9. Instal your reciever, connect batery, setup servos and etc. with your trasmitter, lock servo position, then instal propeller...

[See video guide #10](#)

you will need: Your own Rx/Tx system

[Li-Pol Battery 1300mAh/6s](#) - Turnigy nano-tech

Foam strip for Li-Pol battery

Scissors

Velcro

[Propeller APC Style 9/6](#) or similar

Small screwdriver+

[CA Glue](#) - medium + [activator](#)

10. Before flight check: **center of gravity is very important** (see CG markings), battery properly charged, ailerons and elevator deflection check, your own flying skills or RC simulator training...

Than go flying: set full throttle, put the elevator little upwards (1-2mm) and throw it energetically to the wind approx 10 grades up, wait till plane gain speed, then fly it in your manner...

[See video guide #11](#)

...so, are you ready for flying popcorn, yeah!

