



Liberty-S

Manual

By Clifford Broekhuisen

Thank you for purchasing the Fly Eagle Jet Liberty-S

DISCLAIMER:

A RC jet plane is possibly the ultimate RC model HOWEVER, THIS IS NOT A TOY..

This Turbine powered miniature aircraft is capable of very high speeds and damage to life, limb, and structures.

Fly Eagle Jet and its distributors cannot control how you assemble this model, what equipment you use to fit it out, or how you fly it, and cannot be held responsible in any way for any damages that may occur when you fly your aircraft.

By assembling and flying this model, you are responsible for your own and peoples' safety prior, during and after the flight.

Please inspect all the parts before beginning the assembly of this kit. If any parts appear to be in a questionable state, contact your dealer or the manufacturer for repair or replacement of these parts.

Once you have assembled the aircraft, you are the pilot in command and assume any and all responsibility as well as liability for the use of the model and any damages that might occur by flying or attempting to fly this aircraft.

R/C model jets require a very high level of skill in both assembly and flying.

If you do not feel confident in either your building or flying skills, PLEASE seek assistance from more experienced modelers.

It is HIGHLY recommended that you get an experienced turbine pilot to do your maiden flight.

Very often, the first few seconds of a maiden flight are critical until the aircraft is trimmed out, and having an experienced pilot at the controls can make the difference between a wrecked aircraft and one that enjoys many hundreds of safe flights.

Be sure to select a suitable field for flying...take the time to find a large paved runway if at all possible, especially for test flights, until you feel comfortable getting the aircraft in and out of smaller grass fields.

BEFORE YOU START:

Keep this in mind as you proceed:

Always double check and ask yourself:

"Is this done the way it should be done?"

Even the smallest part of the assembly of this jet is important and can cause, or prevent the loss of your airplane, do not rush the build of this jet.

Double check the work that you have done and redo the steps if they are wrong.

Careful and precise work will result in a long-lasting airplane that gives you years of pleasure, one loose part of the airplane could result in the complete loss of the aircraft and all the components inside it, and someone can even get hurt.

Pause every once in a while when building, and again, double-check your workmanship. BE HONEST TO YOURSELF

Enjoy building this plane and remember to have fun with this great hobby.

Let's begin

Now let's start by unpacking the contents of this box in a clean, well lit and well ventilated room. You will spend several hours together with your kit in this room and your well being is important.

When unpacking the box, do a first check for quality and spread the components in a way, you will have an overview of the work that has to be done.

Check if all the contents are there and group them based on your building plan.

Contents of this box:

- Fuselage
- Wings
- cockpit
- Landing gear
- Stainless steel tailpipe
- Hinges
- Tank

Components needed to complete the model:

- Turbine
- 8x 13mm Servo's (Hyperion HP-DS13-TCB Digital)
- Screws
- Receiver
- Battery pack
- Servo extension wire
- Festo parts and tubing

Recommended adhesives needed to complete this kit:

- Loctite Hysol 9462
- Thick CA
- Vaseline
- Silicon oil

Make sure to use the correct tools for the job.

Using the wrong tools can cause damage to the airframe or its components.

Pneumatic and Fuel system

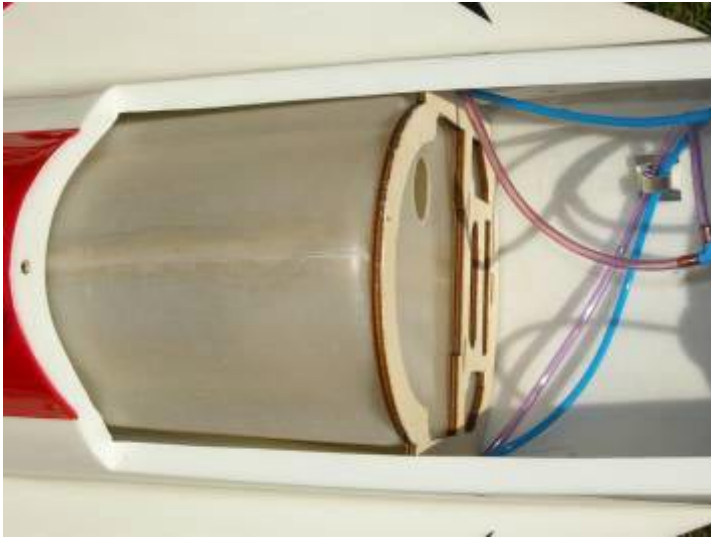
Make sure all pneumatic lines to your brakes and undercarriage system are equal in length, length differences may result in unequal braking or failing retracts. Make sure all tubing is cut perfectly square.

A cigar cutter is a useful tool to cut your pneumatic- and fuel lines at 90°.

The pneumatic lines must all be secured to the airframe. Loose lines may result in a leaking air- or fuel system.



Fuel cell installation



The Liberty-S comes with one main tank of 1,5 liter.

Bend one tube through 90 degrees, this should be placed in rubber bung and should almost touch the top of the tank this is the air vent, the other is left straight and the fuel tubing pushed over it with the fuel clunk fixed to the opposite end, make sure that this reaches the bottom back corner. Apply a small amount of Vaseline to the bung and slide into position in the tank and tighten the centre bolt. It is a good idea to check the tank for leaks by blocking one tube and blowing down the other whilst submerging the tank in water, check for any bubbles.

Hopper Tank

Most model jets have a bubble trap tank, this is a small 4oz tank which is fed from the main tank and is kept full throughout the flight to stop any air bubbles getting to the engine which would cause it to flame out and stop.

This tank can be placed just in front of the main tank. There are three connections on this tank, one goes to the engine pump, the other goes to the main tank and the third is used to fill the system.



Hinging the control surfaces



Once the fuel and air systems are installed, you should start on the hinges. Before applying glue, you should fit the control surfaces and make sure they function and fit well.

Coat the center point of each hinge and the leading edge of the control surface, you are going to glue with Vaseline.

The Vaseline will prevent your control surface and hinge to be glued in a way that is doesn't move anymore.

Apply Hysol in the hinge holes and hinge and glue the control surface in place. Do the same for the rest of the control surfaces.

Installation of the servos

8 Digital 13mm servos are required.

First the servo holders need to be assembled and glued into place.



When servos and horns are fitted to the elevator, connect two extension leads to the servos.

Make a hole in the fuselage just in front of the wooden former at the back of the model so that the leads can be passed through and the elevator bolted into place. Place the two aluminum washers on to the two 4mm bolts and tighten.

The extension leads are then routed along the fuselage to the cockpit area. The leads should be covered with sticky backed foil or a ceramic heat proof sheathing to protect them from any heat build up from the exhaust duct

Use the supplied pushrods and make sure the servo extension cords are of good quality. The servo cords should be bundled and twisted, longer extension cords are to be shielded from interference with a ferrite ring. Make sure extension points of your wiring are leaded or at least locked with a servo extension safety lock.

Radio and Engine installation

Once all servos and pushrods are installed, you can build in your radio equipment. Check all wiring once more for correct extension and overall functionality.

Power plant installation

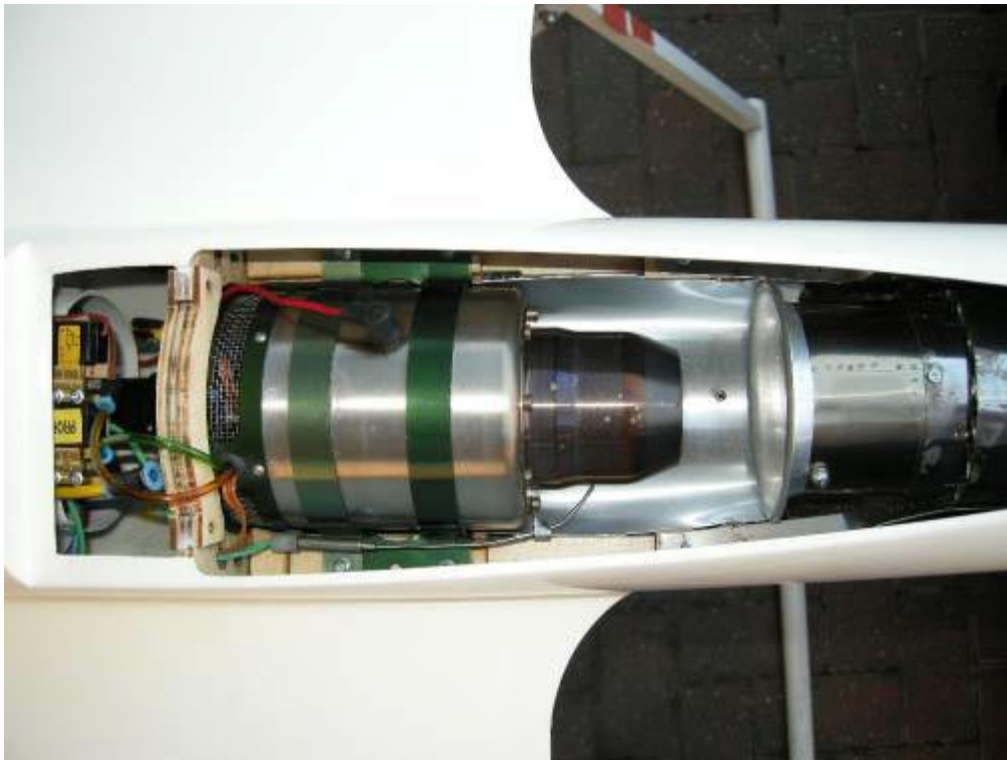
Now it is time to install the tailpipe and Turbine.

A 60-90 Newton Turbine (for instance a Jets-Munt Merlin 90) is recommended for the Liberty-S.

Place exhaust duct in position, the back end should be just inside the fuselage.

Twist the front fixing straps through 90 degrees and screw to the wooden engine mounts. Place fibreglass under tray in position, it is a good idea to treat the back 2/3 inches of this with heat proof ceramic paint. You can also use very thin aluminium sheet underneath engine.

Picture of Wren Super Sport installed. Note valves just in front of engine



The ECU and fuel pump are to be installed on the radio tray.
The valve(s) can be mounted just in front of the turbine.

Always make sure there are NO loose servo wires or other object that can be sucked into the engine intake. The wires should also be shielded, secured and freed from contact with the tailpipe of the engine.

Electric installation



Batteries are mounted inside the nose cone, it is normal to have two batteries for the radio and one for the engine ECU there is room here for all three.

Balancing your airplane

The Liberty-S needs to be balanced with a filled hopper tank and empty main tank.

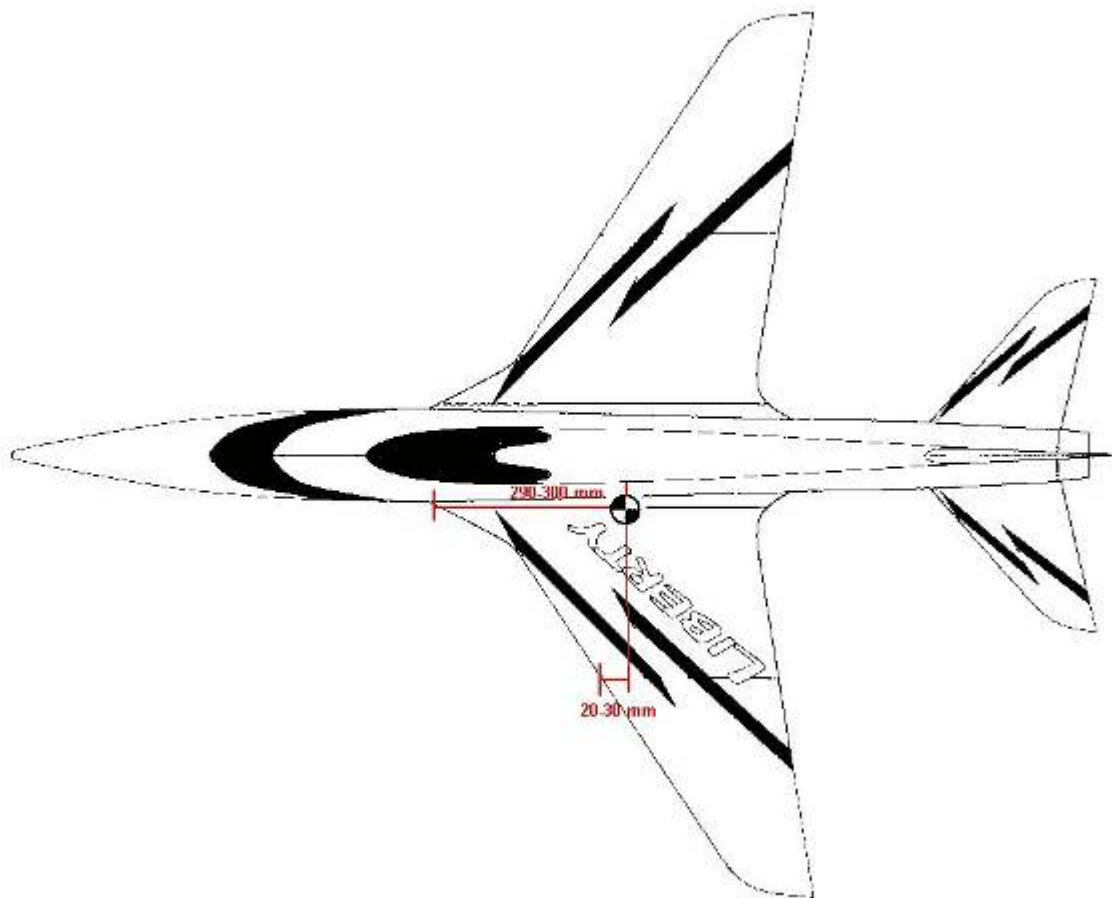
Check all your systems and fuel lines before filling the hopper tank with fuel.

The Center of Gravity (CG) of the Liberty-S is to be balanced as follows:

290-300 mm from the intakes at the fuselage

Or

20-30 mm from the leading edge of the wing measured at the wing root.



- Ailerons** 15mm each way
- Elevator** 15mm each way
- Flaps** 45mm total movement

Set 20% exponential on ailerons

After the installation flight, you can alter these settings to your personal likings.

At the flying field

Always perform a range check for your radio system before starting the Turbine. Make sure the pneumatic systems has been fully tested, free of any leaks and filled to its limits. (usually 8 bar)

Test your retracts- and brake system for a proper functionality and test the brakes once more.

Start your Turbine

Always have a fire extinguisher within your reach and check if the exhaust is downwind in a safe direction.

- If the Turbine is running as it should be, do a few taxi runs before taking off.
- Fill your fuel and air system again and taxi to your runway.
- Take off and trim your airplane if needed.



We hope you will enjoy countless of safe flights with your Liberty-S