Star Fury

Design By: William Carney

Recently I just finished a rocket I call Star Fury. As to credits to "Babylon 5", I did not think of the series in anyway when I named this rocket and in no way is it meant to associate in anyway anything on that fine sci-fi series. It's sort of like a futuristic space fighter with "Star Trek" style nacelles.

Basically start with an Estes "Venom" kit. But substitute an 18 inch chute instead of the original 12 inch one. I did cut the large spill hole out of the chute. Also you will need six BT-5 nose cones (short like Mosquito), two long BT-5 nose cones (like Sparrow), four BT-5 tubes (five inches long), one or two blocks of clay weights or something similar and a strip of balsa for extra fins. Cut eight additional fins the size of the four originals but without the "through-the-wall" tab, cut them the same size otherwise. Then cut about 1/8 inch from the tip of each of the four original fins but not the eight without the "through--the-wall" tabs. So when you "sandwich" the original fin with two of your "homemade" fins on each side you have the center one a little smaller than the two outer ones. After you glue the motor mount and the original fins in place on the body like the Venom instructions mention, glue an extra "homemade" fin on each side of the original fin. So you end up with a laminated three layered fin but with a slight depression in the center of the tip. This is probably one of the most important steps. You can then sand the tip to a curve to fit a BT-5 body tube on. You want a curved end on each fin "tip".

Mark from one end of the BT-5 tubes in one inch. This is where the tube will be placed on the tip of the fin on the curved end so that the BT-5 tube is hanging over the back side (motor end) one inch behind the trailing end of the rocket. Glue four short BT-5 nose cones on the rear ends of each BT-5 tube and two on the front or opposite sides (facing toward nose cone). Glue the two long BT-5 nose cones on the front sides facing forward (toward the nose cone), this forms the "wing". The BT-5 tubes are wing tanks or Nacelles at the fin tip.

Paint four of the short BT-5 nose cones yellow (the ones on the rear) and two red (the forward ones). Paint the two long BT-5 nose cones (also forward ones) red. Paint the rocket medium/dark grey. Paint the four BT-5 tubes black. I added some decals but you could skip this if you do not have them. On each side of the fighter nose cone I placed one black decal 1/4 inch wide and 1/8 tall but with slanting (45 degrees) angle in the front to simulate a window. Also just behind it along the nose cone another window decal about 1/2 inch long and 1/8 tall rectangle shape. At the tube end where the nose cone is I placed two bands of yellow decals. Between this and the fins I placed two decals each "UNITED STATES", "USA" and U.S. flag. Each on opposite sides.

Now this is where it gets tricky. The two long BT-5 nose cones and BT-5 tube nacelles on opposite sides form the "wing". With the nose cones pointing away from you the left wing has "US AIR FORCE" decals on top and bottom with the right wing having the Air Force emblem. The top "rudder" has a U.S. flag and the name "STAR FURY" using yellow/red letters. In the area between the two wing fins and the "rudder" I placed the decal from Venom that is a long pointed yellow triangle. About 1/8 inch from the tip of this I placed a decal saying "WARNING High Pressure Gases". The bottom "rudder" has "USA" on each side. Between the bottom "rudder" and the "wing" on one side is the yellow triangle decal from the Venom but on the other side I placed the Launch lug. Pointing toward the launch lug is a yellow arrow decal saying "DANGER" and on the launch lug is a black one saying "DANGER".

The decals come from various kits and press type lettering. You will have to check the center of gravity and add weight to the nose cone to bring CG ahead of the fins. You also might have to then fly it and trim as necessary since at this time I do not know exactly how much you will use. It will depend on how heavy the glue is that you use and how much paint you use and so on. Sorry I don't have the CP calculated but I am terrible at math and have had trouble doing the math for the nacelles and rearward mounting nature of it. The CG for my rocket came to about 6 3/4 inches measured from the front end of the body tube. The nose cone with the added weights and paint comes out to about an ounce with the rocket weighing about four ounces all together.

After I posted a similar article on the Rec.Models.Rockets Usenet I had some further thoughts. Before you glue each nose cone on the nacelles paint each one and the nacelles then let them dry for a better finish. Also make sure you sand, seal, prime and paint the outer sides of the fins very well. On my model I did not do this and the decals on the fins don't look as nice as they should. Also the color of the body is a little too dark to show off the decals well. If I do another one (up-scale) I would paint it a lighter grey. I also since added some "No Step" decals, one on each "wing". If anyone knows of a supplier that could up-scale the special nose cone style of the Estes "Venom" I would like to know. You almost have to hand carve a scale up nose cone.

After a few flight tests I realized that the 1/8 inch shock cord is not good enough for C size motors and intend to replace it with 1/4. Also the rear "trailing edge" of the fins had some scoring on each flight. I would add some epoxy on just this edge to protect them from scoring. I did notice a little of tendency to "weathercock" a little into the wind so I would recommend that you fly this rocket in winds under about 10 or 12 miles per hour. Adding a little weight to the nose cone could help, but the take off weight is pushing it as is. With a C5-3 or C6-3 it barely gets up a high enough and you do not want any longer delay. Also be careful how you wrap the chute. For the first flight I wrapped it a little tight to fit the larger chute in the body tube and it took a few seconds to come out.

I had a few anxious seconds while I said "come out", "come out", "come out" as I waited for the chute to deploy and bring the rocket back across some power lines. I had not anticipated it weathercocking up wind. Most rockets I have flown weathercock down wind. For as heavy and as strange as it is, it does fly pretty good and is a neat one to build.

Good luck on your rockets and as always,

Keep'em flying.

William Carney