28% Ultimate Bill of Materials (Darren Bowman design)

GTW 12/11/2022

All material is balsa unless otherwise specified.

National Balsa carried most for ~$175.00)

**Elevator**

¼ x 3/16 Stringer, 48” 7ea

3/16 center solid slab 3” x 24”

½ x 3/16 stab Leading/Trailing Edges, 48” 2ea

1/16” sheeting 4” x 36” 4ea

½ x 5/16 elevator leading/trailing edge 48” 2ea

¼ x 5/16 stringers 36” 7ea

**Fuse**

½ x 3/16 turtle deck stringers 36” 4ea

½ x 1” ply 12” long 1ea

¼ x 3/8 deck stringers 4 x 36” 6ea

1/8 sheet front deck 3” x 36” 2ea

¼ ply tailwheel mount 1” x 4” 1ea

1/8” balsa cabin floor, 8” sheet x 24” (or butt glued 4” sheets) 4 sheets 1/8” x 4” x 24”

3/8 x 1” wing mount, upper 24” 1ea

1/8 x ¼ strip 36” 12ea

1/16 sheeting turtle deck rear 3” x 36” 3ea

¼ x ½ x 8” plywood firewall support, spruce 1ea

3/8” triangle stock 24” 4ea

**Rudder**

¼ x 3/16 stringers 6’

1/16 sheeting 3” x 36’ 2ea

¼ x 5/16 stringers 36” 3ea

½ x 5/16 leading/trailing edges 48” 2ea

**Wings**

1/16 sheeting 4” x 36” 9ea

1/16 x 3/8 rib cap strips 24” 20ea

1/16 x 1” trailing edge 36” 10ea

½” leading wing edge 36” 8ea

7/16 x ¼ main fir/spruce spars 36” 8ea (cut from Home Depot hemlock 7/16 x 1.5” 8 ft stick)

¾ x 2” aileron stock 36” 4ea (make using 0.5 x 2” aileron stock, with ¼ balsa sheet backer)

½ x ¾ solid trailing edge 36” 4ea

¼ x ¼ sq wing spars, balsa 36” 20ea

**Misc. Materials**

DLE 55 engine

Propeller 22x8” wood

700ml gas tank

4” CF spinner

Monokote covering material (Hobby King 5 meter rolls)

Epoxy – Harbor Freight 10ea 2-tube packages

Super glue gel – Harbor Freight bulk 10 tube packages (20 each)

Super glue – Harbor Freight bulk 10 tube packages (6 each)

Denatured alcohol, for thinning epoxy to fuel proof firewall

3ea 1/16 x ½ x 36” aluminum straps, Home Depot

Dubro large scale control horns, 8ea

Aileron servo extension wires, 18” x 6ea

Radio receiver

Power switch for receiver

3000 mah LiFE battery, 6.6 volt

Servos

2 aileron 120 in-oz

2 elevator 60 in-oz

1 rudder 160 in-oz

1 throttle 60 in-oz

Pull-pull wires/kit for rudder

Metal servo pushrods with cleaves connectors 5ea

Gas engine electronic shutoff switch 1ea

Dubro pin hinges 30ea

Tygon gas line 1/8” 3 ft

Fuel dot, large 1ea

Tail wheel assembly, CF 50cc size, with 1.5” wheel

Landing gear, 50cc size CF 190mm top x 550 wide x 200mm tall

3.5” wheels, 5/32” axel spindles 2ea

**Building tips**

Fuselage sides and bottom are supplied (plywood), but must make fuse top from 1/8” balsa sheet, using plans as a template. Top is similar to the bottom plywood, but longer.

Tape fuse rear together. Locate/place first 3 bulkheads, and top and bottom fuse pieces. Clamp. tape and rubber band together; position until square and straight over plans. Tack glue with super glue gel. Then go back and reinforce with 3/8” triangle stock or ¼” sq stock.

Wing 7/16” spars are not available. Cut from Home Depot hemlock 8 ft strip of 7/16 x 1.5” stock.

Use excess 7/16” x 1.5” hemlock stock (from wing spars) to make landing gear support, and wing mounting blocks.

¾” Wing ailerons are not available. Order ½ x 2” aileron stock, then glue ¼” x 3” balsa sheet to make a sandwich that is 0.75” thick as required

Add interior gussets to the horizontal, vertical stabs and rudder to reinforce.

**Mods**

* Removable top between cockpit and firewall