AeroMax

Sport -Aerobatic Model

Construction Manual

Designed by: Dennis Clayton

Manufactured by: R/C AirDesigns

www.rcairdesigns.com (865) 404-0336

KIT # RCA-1002

Disclaimer: Builder accepts full responsibility and liability for construction and performance of the finished aircraft. RC Air Designs accepts no liability for aircraft completed by purchaser/builder of the model.

Before starting your build inspect all parts carefully! If any parts are missing,damaged or defective & or you have any questions about building this model please contact us. We will be glad to help!

Email: contact@rcairdesigns.com

PRECAUTIONS & RECOMMENDATIONS

1. Follow plans and written instructions over photos as they may be inaccurate due to updates to parts in the kit. Study plans and read instructions before starting the build for best results.
2. Do not alter or modify the aircraft as doing so may result in an unsafe or unflyable model.
3. Take time to build a straight, strong and true aircraft.
4. Install and use properly rated radio systems and equipment that satisfies current AMA/FCC specifications.
5. Use recommended engine size and components, increasing power may result in damage to the airframe.
6. Test control surfaces and inspect the plane for loose parts before each flight!

Table of Contents:

Introduction to Designer

The AeroMax was designed in 1995 and in 1997 offered in ARC form. It was taken out of production after 30 were sold. However, my first RC design in 1982 was called the Shooting Star. In 1995 I designed a 40 sized low wing sport plane called FunStar 40 and it was featured in RCM Nov 1997 reviewed by Jerry Festa. Great Planes offered to market/kit it but I declined.

Now 25 years later the “NEW” AeroMax is born bringing a more advanced aircraft. Improvements in engines, on board electronics and laser cutting capabilities create a 30% lighter more versatile and better performing aircraft.

My goal at RC Air Designs is to offer quality kits, service and innovative designs to today’s RC pilots and builders. Each kit is precision laser cut from Balsa, Light Ply and Birch Ply to build a fast, true, lightweight and enjoyable build.

I hope you enjoy your new aircraft for many years!

As the brochure in 1997 for the original AeroMax read. “Take your skills to the Max!”

Dennis Clayton, Designer/Owner

Specifications:

- Wingspan ..... 83”
- Wing Area ..... 1,350 sq. In.
- Weight ..... 14 - 15 lbs.
- Wing Loading ..... 23 - 25 oz. Sf.
- Total Length ..... 72”
- Engine Size (GAS) ..... 35 cc - 55 cc
- Electric ..... 3,500 - 4,500 watts
- Fuel Tank ..... 16 oz (about 591.47 ml).
- Spinner ..... 3.5”
- Radio 6-Channel

OTHER ITEMS REQUIRED

- At least a 6-channel up-to-date radio with …6 servos of at least 180 oz/in of torque with a 35-40cc engine and 200 oz/in for 55cc.
- A Gas engine 35-55 cc or if you choose Electric 3,500 – 4,500 Watts depending on the type flying you may do. Never go over maximum engine size recommended.
- The proper size propeller to fit engine size chosen.
- Spinner (3.5” Diameter plastic, CF, or metal).
- Fuel tank to match engine size or recommendation (up to 20 oz (about 566.99 g).
- Gas rated fuel line (24” should be sufficient).
- Tail wire bracing if needed & heavy-duty control linkages for controls including pull-pull system for rudder control.
- Iron on covering of good quality of your choice & trim tape etc.
- A good fuel proof paint that matches covering to paint cowl, pants and canopy.

SUPPLIES & TOOLS REQUIRED

- You will need to Purchase one stick of ½" EMT Conduit & Cut in Half for Wing Jig
- A flat building table at least 24” x 48” to build on.
- 2 oz (about 56.7 g) Thin CA glue
- 2 oz (about 56.7 g). Thick CA glue
- 2 oz (about 56.7 g). 30-minute epoxy
- Drill with bits needed.
- Sealing iron and heat gun
- X-acto knife with blades
- Screw drivers, pliers, etc.
- T-Pins or magnetic system to hold parts down.
- Straight edge and sanding blocks (Coarse, Medium and Fine Grit)
- A square & ruler
- Balsa filler & Petroleum jelly
- Felt tip pen etc.
- Parchment Paper to protect plans.

Laser Cut Wood Sheet List

All Cut Sheets

- Cut Sheet #1 - 1/16”x11.5”x36” (L.P. QTY-1)
- Cut Sheet #2 - 1/16”x11.5”x36” (L.P. QTY-1)
- Cut Sheet #3 - 1/16”x11.5”x36” (L.P. QTY-1)
- Cut Sheet #4 - 1/16”x11.5”x36” (L.P. QTY-1)
- Cut Sheet #5 - 1/8”x11.5”x36” (L.P. QTY-1)
- Cut Sheet #6 - 1/4”x11.5”x36” (L.P. QTY-1)
- Cut Sheet #7 - 1/8”x11.5”x36” (L.P. QTY-1)

- Cut Sheet #8 - 1/8”x11.5x36”
  (L.P. QTY-1)
- Cut Sheet #9 - 1/8”x11.5”x36”
  (L.P. QTY-1)
- Cut Sheet #10 - 1/8”x11.5x36”
  (L.P. QTY-1)
- Cut Sheet #11 - 3/32”x4”x36”
  (L.P. QTY-1)
- Cut Sheet #12 - 3/32”x4”x36”
  (Balsa QTY-1)
- Cut Sheet #13 - 3/16”x4”x36”
  (Balsa QTY-1)
- Cut Sheet #14 - 3/16”x4”x36”
  (Balsa QTY-1)
- Cut Sheet #15 - 3/8”x4”x36”
  (Balsa QTY-1)
- Cut Sheet #16 - 3/16”x4”x36”
  (Balsa QTY-1)
- Cut Sheet #17 - 3/16”x4”x36”
  (Balsa QTY-1)
- Cut Sheet #18 - 3/32”x4”36”
  (Balsa QTY-1)
- Cut Sheet #19 - 3/32”x4”x36”
  (Balsa QTY-1)
- Cut Sheet #20 - 3/32”x4”x36”
  (Balsa QTY-1)
- Cut Sheet #21 - 3/32”x8”x36
  (Balsa QTY-1)
- Cut Sheet #22 - 3/32”8”x36”
  (Balsa QTY-1)
- Cut Sheet #23 - 3/32”8”x36”
  (Balsa QTY-1)
- Cut Sheet #24 - 1/8”x11.5”x36”
  (L.P. QTY-1)
- Cut Sheet #25 - 1/4”x11.5”x23.75”
  (L.P. QTY-1)
- Cut Sheet #26 - 1/16”x8.75”x21.5”
  (L.P. QTY-1)
- Cut Sheet #27 - 3/32”x12”x10.5”
  (B.P. QTY-1)
- Cut Sheet #28 - 3/16”x4”x7”
  (Balsa QTY-1)

Other Parts List

Carbon Fiber Components

- Wing Spars
  5MM X 5MM X 36”
  (C.F. QTY-4)
- Horizontal Front Stab. Spar
  5MM X 5MM X 10.725”
  (C.F. QTY-1)
- Horizontal Rear Stab. Spar
  5MM X 5MM X 24.175”
  (C.F. QTY-1)
- Vertical Fin Spar
  5MM X 5MM X 14.350”
  (C.F. QTY-1)
- Wing Tube & Sockets
  27MM O.D. X 750MM
  (C.F. QTY-1)
- Main Landing Gear
  (C.F. QTY-1)
- Tail Gear Assembly
  (C.F. QTY-1)

Fiberglass Components

- Two-Piece Fiberglass Cowl
  (QTY-1)
- One Pair of Fiberglass Wheel Pants
  (QTY-2)

Vacuum Formed Components

- Clear Molded Bubble Canopy
  (PETG QTY-1)

Wing Sheeting

- L.E. & Inboard Sheeting
  3/32”x4”x36”
  (Balsa QTY-7)
- T.E. Sheeting
  3/32”x1.5”x36”
  (Balsa QTY-4)

Other Parts Cont.

Wing Spars and Stringers

- Wing L.E
  3/8”X3/8”X36”
  (Balsa QTY-2)
- Wing Main Spars
  1/4”x1/4”x36”
  (Balsa QTY-4)
- Wing Rear Stringers
  1/4”x1/8”x36”
  (Balsa QTY-4)
- Wing Cap Stripping
  3/32”x3/8”x36”
  (Balsa QTY-8)

Shaped Balsa Parts

- T.E. Stock Notched
  3/8”x3/8”x36”
  (Balsa QTY-2)
- Triangle Stock
  1/4”x1/4”x36”
  (Balsa QTY-2)
- Aileron Hinge Tri. Stock
  3/4x3/4”x36” With Hinge Holes
  (Balsa QTY-2)
- Triangle Stock
  3/8”x3/8”x36”
  (Balsa QTY-2)
- Tail Blocks Shaped
  8.5”x1.”x1.25”
  (Balsa QTY-2)

Canopy Cockpit & Turtledeck

- Canopy Stringers
  3/16”x3/16”x36”
  (Balsa QTY-2)
- Turtledeck Stringers
  3/16”x3/16”x36”
  (Balsa QTY-2)
- Cockpit Sheeting
  (CPS-1 & CPS-2)
  1/32” B.P. QTY 1-each
- Turtledeck Sheeting
  1/32”x9.6”x21.75”
  (Birch Ply QTY-1)

Hardware & Accessories Included

- Rolled Plans /Instruction Book
- AeroMax Decal Set
- 3.5” Lite Wheels (2)
- Wing Quick-Locks (2)
- Foam Washers (2)
- M6 T-Nuts (2)
- Canopy Latches (2)
- M1.5X6MM Screws (8)
- Black Nylon Cowl Screws 4-40 x 3/8” (16)
- 4-40 T-Nuts (16),
- Barbed 3/16” Hinges (22)
- Wheel Axles with Nuts (2)
- Wheel Collars 5/32” (4)
- 6-32 x .50” Cap Screws (4)
- 6-32 T-Nuts (4)
- 8-32 X .75” Screws (4)
- 8-32 T-Nuts (4)
- #8 Washers (4)
- Washer Head Screws M3 X 6MM (22)

Included Hardware & Accessories

Starting Assembly

Fuselage Assembly

1. **(PHOTO-1)** & **(PHOTO-2)** Carefully remove **(FS-1's)** & **(FS-2's)** from cut sheets **#1, 3** & **4.**

2.Using thin CA, align and glue the dove-tail joints in both **(FS-1's)** & **(FS-2's)** together making sure top edge is even and straight. ***(Note: It may be necessary to lightly sand the laser tabs left from sheet.)***

3.Carefully remove **(FD)** fuselage doublers from cut sheets **#3 & 4.**

4. **(PHOTO SET-3)** Align **(FD)** fuselage doublers with wing tube holes and anti-rotation dowel hole and even with front of fuse. sides. Use the wing tube socket and dowel to align these holes before gluing doubler in place (Carpenters glue or epoxy is recommended for this task). To allow repositioning and alignment. ***(NOTE: Now is a good time to install the servo mount doublers to the inside of both fuselage sides in rear if you're sure which holes you will be using.)*** ***These parts are in cut sheet #27 as part (SD).***
(NOTE: Make sure to (NOT) make two right- or left-hand sides. Keeping part numbers to the inside will prevent this.)

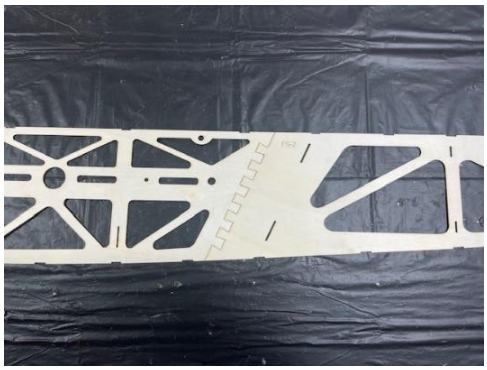


PHOTO-1

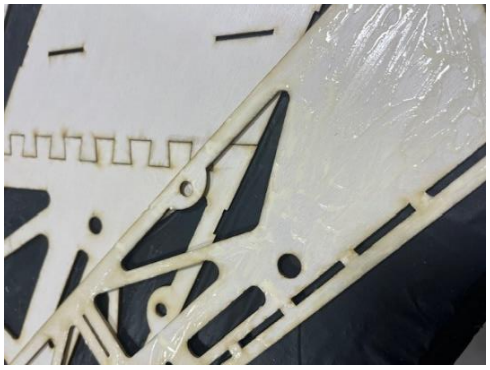
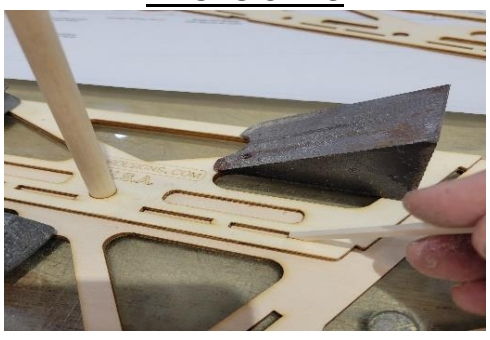


PHOTO-2

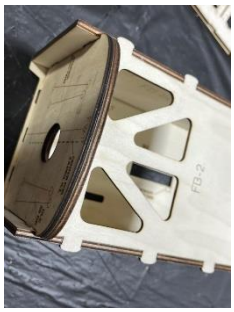
PHOTO SET-3



5. **(PHOTO SET-4)** While fuselage sides are drying locate the firewall parts **(FW-1)** in cut sheet **#27** and **(FW-2)** in cut sheet #6. Glue these two firewall parts together using epoxy keeping edges even till dry. ***(NOTE: Make sure to have the laser etched side facing forward on (FW-1).***



PHOTO SET-4



6.Locate parts **(FTB-1R)** & **(FTB-1L)** in cut sheet **#6. (FTB-2), (FTB-2A), (FTB-2B),** & **(FTB-3)** in cut sheet **#5.**

7.With firewall assembly dry and using a flat surface. Laminate **(FTB-2B)** to the bottom side of **(FTB-2)** making sure to keep edges even as needed. This forms a lip for hatch cover. Assemble tank box by locking **(FTB-1R)** & **(FTB-1L)** notches on **(FTB-3).** Attach the **(FTB-2)** assembly into the top notches of both tank box sides. Tack glue using thin CA until firewall is installed. ***(NOTE: Use epoxy to glue firewall in place) Install firewall then go back and using thick CA glue all joints in tank box while keeping assembly square.***


PHOTO SET-5


10. **(PHOTO SET-5)** Locate parts **(F-1), (GP-1), (GP-2)** & **(GP-3)** in cut sheet **#6.** Assembly all the pieces using thin followed by thick CA making sure to keep square as they dry. (See in photos)

11.Install the ***T-Nuts*** supplied for the main landing gear at this time into the top side of precut holes on **(GP-2)** tapping them lightly into the wood. It's a good idea to add a little CA around the outer perimeter of the ***T-Nuts*** to help hold in place.

12. **(PHOTO SET-6)** Carefully slide the sliding tank compartment you assembled earlier gently through the front of former **(F-1).** And aligning the slots for engine size you've chosen into the tabs on **(F-1)** & **(GP-3).** ***(NOTE: Do not glue till later when you are ready to mount the engine.) (NOTE: Images may vary slightly from description, always follow description over images.)*** With this assembly dry lay the **"RIGHT-SIDE"** fuselage side assembly flat onto building board and glue this assembly into place using thin followed by thick CA or epoxy. (See photos below for reference).

13. **(PHOTO SET-7)** Now glue the **"LEFT-SIDE"** assembly to the other side of box. Once dry then move to the next step. Locate Former **(F-2)** in cut sheet **#9** & **(F-3)** in cut sheet **#8.** Tack glue these into place as shown in pictures.

14. **(PHOTO SET-8)** Locate fuse, top and bottom pieces **(FT-1), (FT-2), (FB-1), (FB-1A), (FB-1B)** & **(HP-1 & TG-1)** in cut sheets **#2, 4** & **10.** Also locate parts **(HP-2)** & **(TG-2)** from cut sheet **#10.** As you did with fuselage sides, join all these

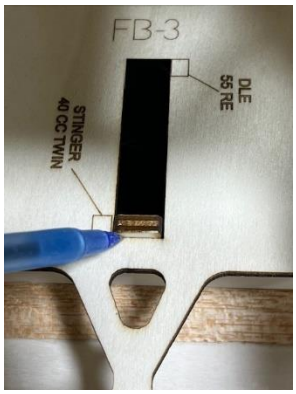



PHOTO SET-6




PHOTO SET-7




PHOTO SET-8

pieces together on flat surface using thin C.A. to glue together making sure parts are tight at Dove-Tail joints. **(PHOTO SET-9)** Glue the **(HP-2)** & **(TG-2)** doublers onto top and bottom of fuselage pieces over the parts **(HP-1)** & **(TG-1)** making sure to align sides front and the square hole in **(TG-2)** with hole in **(TG-1).** Make sure you don't cover the slots where **(F-6)** will go in place later. **(Refer to fuselage plans if needed).**

PHOTO SET-9

15. **(PHOTO SET-10)** Starting at **(F-1)** key in the **(S-N-L)** tabs on **(F-1), (F-2), (F-3)** into notches on fuselage top & into corresponding notches on fuselage sides. Once satisfied with fit then tack glue all these tabs into notches as well as inside corners inside fuselage sides using thin CA. Repeat this with fuselage bottom all the way back to bottom of **(F-3).** ***(NOTE: Thin CA can be used on outside seams where fuselage sides meet the top and bottom.)***

PHOTO SET-10

16. With the entire front section of fuselage assembly tack glued together using **Thick CA** glue all inside contact points and corners while keeping assembly square.

17. **(PHOTO-11)** Locate parts **(F-4)**,**(F-5),(F-6)** & **(F-7)** in cut sheet **#10,** in cut sheet **#9.** ***(NOTE: Be careful to remove them as they are fragile till glued into structure.)***

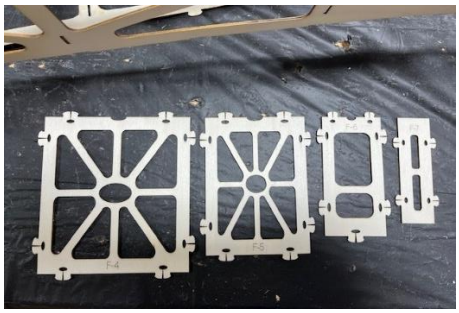


PHOTO-11

18. **(PHOTO SET-12)** With fuselage standing on front snap formers **(F-4), (F-5), (F-6) & (F-7)** into the fuselage sides using the **(S-N-L)** tabs on these formers. ***(NOTE: Do not glue yet.)***

19. Now snap the top and bottom of fuselage into all formers using the **(S-N-L)** tabs as you did with sides earlier. Using some of the 3/32" x 3/8" balsa cap strip material cut and install in between formers **(F-3)** to **(F-6)** as seen in **(PHOTO SET-13).** These are to stiffen up the narrow ply cutout in lightening holes of fuselage sides.

20. Once all formers are snapped in & parts are tight and square you can glue all these parts together using thin followed by **Thick C.A.** Let it dry before moving on.

21. **(PHOTO SET-14)** With fuselage sides & formers dried & assembled, locate turtledeck formers **(T-3)** in cut sheet **#8** & **(T-4),(T-5) & (T-6)** in cut sheet **#10.** ***(NOTE: Carefully remove from sheets as these parts are fragile till assembled.)***
22. Glue **(F-4 through F-6)** into top of fuselage into the notch above each corresponding fuselage former below locking into place with the **(S-N-L)** tab on each former while keeping **90 degrees vertical.**
23. Snap **(T-3)** former into the center notch above **(F-3)** locking it into place using the **(S-N-L)** tab. Before gluing this former locate turtledeck stringer **(TDS)**



PHOTO SET-12



PHOTO SET-13



PHOTO SET-14

in cut sheet **#9. (PHOTO-15)** Snap this stringer carefully into the notches on the top of all **T-Formers** being careful not to push down as you can break these easily till fully assembled. If you have **(T-6)** former 90 degrees vertical with fuselage then you're good on alignment. Now you can glue all of these in place using **Thin CA** followed by thick. Carefully glue the 3/16" sq. Balsa stringers into the bottom outside notches of the **T-Formers.** ***(NOTE: you should be about 1/32" - 1/16" away from fuselage edge for allowance for turtledeck sheeting.)***

PHOTO-15

24. **(PHOTO-16)** Turtledeck sheet is oversized to allow room for error when installing. Locate the 1/32" B. Ply turtledeck sheet. Using centerline marks on this sheet, align these with the center of **(TDS)** stringer Front & Rear and tack glue in place leaving about 1/8" overhang at each end.


PHOTO-16

25. **(PHOTO-17)** Once the center of turtledeck is glued in place and dried, pull sides down over **(T-3 through T-6)** formers and hold at bottom flat against the balsa stringer and all these formers by placing a scrap piece of wood over edge clamped down rubber bands or tape. Glue in place using **Thick C.A.** from underneath to all formers. Glue the bottom edge of turtledeck sheet carefully to the balsa stringers located on the outer bottom edge of each


PHOTO-17

T-Formers making sure not to glue scrap piece of wood to turtledeck.

26. **(PHOTO SET-18)** If you are sure of the engine, you will be using the DLE-55 RE or the Stinger 40 cc Twin. You may go ahead and finish the fuel tank box installation by gluing this in place. The reference marks for these engines located on the inside top of **(FTB-3)** will give you around 3/32” of spinner to cowl gap when using included stand-offs for each engine. With fuselage sitting upright slide tank box into correct distance or use the laser marks if you are installing one of these engines as a guide. Locate the 1/4" plywood wing tube locks **(WTL)** in cut sheet **#6** and the 6.5” long black fiberglass wing tube socket for fuselage. Now locate **(FTB-4)** & **(FTB-5)** from cut sheet **#9** & glue in place.

27. **(PHOTO SET-19)** Slide this socket into one side of fuse. As you're doing this slide both of the **(WTL)** lock in between back tongues on the inside tank box assembly. Once happy with the fit and location for your engine size glue all these into place using **Thick CA** or epoxy. Glue everywhere box contacts formers other parts. Add the 3/8" balsa triangle stock at this time in all noted places on plans.
Glue **(FTB-6's)** 1/4" ply braces in cut sheet #6 where fuel tank box meets **(F-1)** even with sides of tank box.

PHOTO SET-18

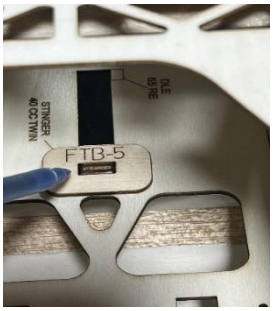


PHOTO SET-19

WING ASSEMBLY

28. **(PHOTO-20)** Assembly supplied Wing JIG **(Conduit NOT-INCLUDED)** then set on a flat surface getting it squared up. ***(NOTE: The conduit used is ½" O.D. Nominal and can be purchased at any building supply house.)*** You can have the supplier cut the 10-foot section into two 5-foot pieces, but you only need a 37" spread between jig ends. It is best to screw down the **Wing JIG** to your table.

29. **(PHOTO SET-21)** Locate ribs **(W-4), (W-5)** & **(W-6)** in cut sheets **#7,8 & 9** for one wing. Carefully remove from cut sheet & slide these ribs onto one end of the **Wing Jig** tubes using plans as reference. **(Part numbers facing up).** ***(NOTE: There is slight play in the holes and the tubing this is normal.)***

30. Lightly sand & clean one of the longer 12" wing tube sockets then slide parts onto tube socket in the order of **(W-1) (WTD)-(W-2)-(W-3)-(WTD)-(W-3)** These parts are located in cut sheets **#7,8 & 9. Refer to wing plans for locations.** Slide the socket with these parts onto the opposite end of **Wing Jig** tubes of other ribs.

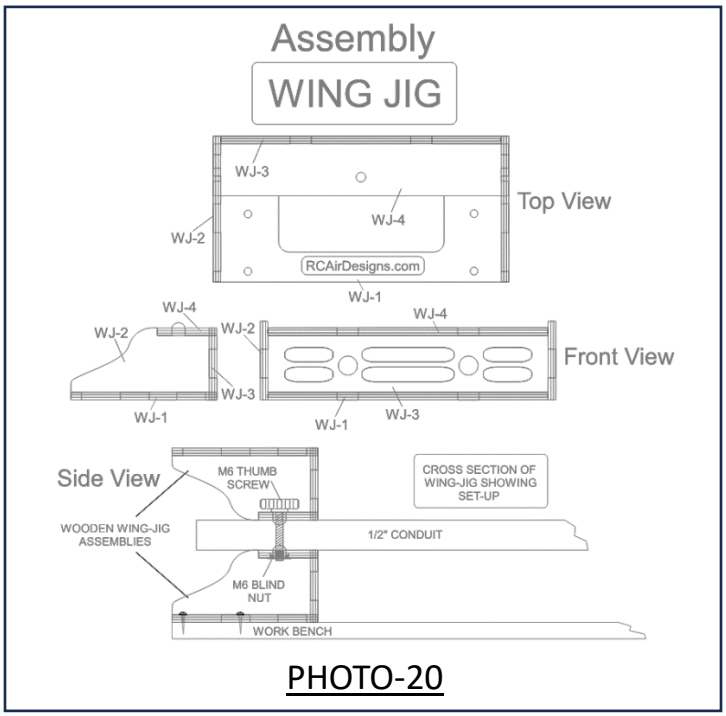


PHOTO-20

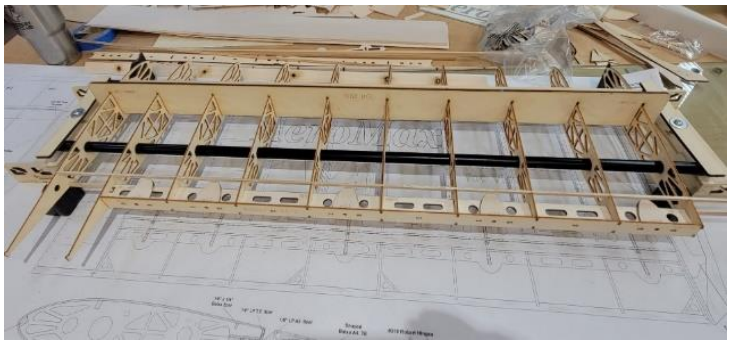


PHOTO SET-21

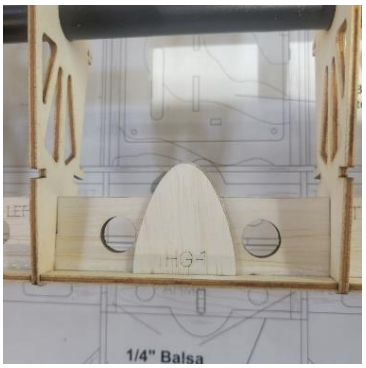
31. **(PHOTO SET-22)** Locate 1/8” Light Ply **Trailing Edge (TE-1)** in cut sheet **#5** and Balsa Trailing Edge **(TE-2)** in cut sheet **#16** corresponding to the right or left-hand wing you have chosen to start on from cut sheets. ***(NOTE: You may leave all internal cutouts on (TE-2) until it is assembled to (TE-1) to keep from breaking.)***

32. Locate the 3/32” balsa hinge covers part **(HG-1)** in cut sheets **#11 & #12** carefully cap top and bottom of the hinge channels using Carpenters glue. Be sure not to get glue in channels where the hinge will go.

33. **(PHOTO SET-23)** Lay the correct **Right or left** hand **(TE-1)** Lite Ply trailing edge onto flat surface with wax paper underneath. Glue **(TE-2)** into correct notches on **(TE-1)** to form a rigid **T-Shaped** trailing edge assembly.

34. Sit the supplied **(Rib Spacer JIG)** onto the top of all ribs. ***(NOTE: Make sure jig is turned correctly with Root & Tip that is lasered into the jig).***

35. With ribs on **Wing JIG** tubes & properly spaced, key in the **(TE-2)** side of the **T-Shaped** assembly you just built into the back slot located on all ribs snapping the **(TE-1)** Lite Ply trailing edge into the **(S-N-L)** tabs on the back of each rib. ***(NOTE: Do not glue any parts until wing is squared up at ends).***



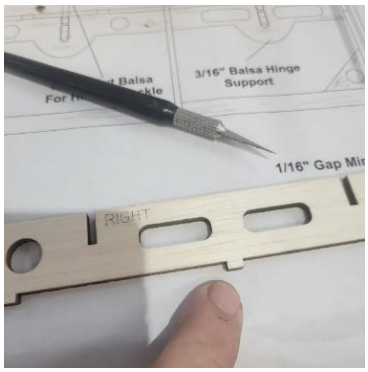
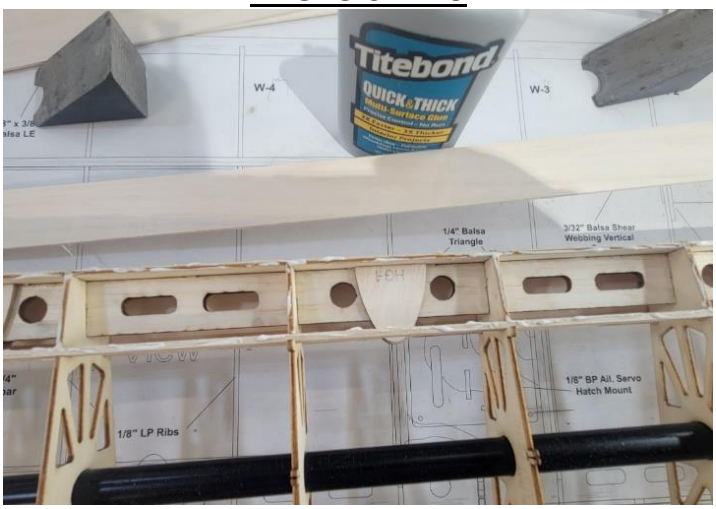


PHOTO SET-22

PHOTO SET-23



36. Cut the root end piece of the pre-shaped trailing edge that goes on the back of ribs **(W-1)** & **(W-2).** at root of wing. Install trailing edge piece on back of these ribs.
Locate 2 Balsa (AG) gussets located in cut sheet **#13** & glue to the inside of these two ribs & inside of **T.E.** piece.
Use wing plans as reference!

37. **(PHOTO-24)** Locate one of the supplied 3/8" x 3/8" 36" square balsa **L.E.** sticks and install into front V-notches in all ribs using supplied **Spacer Jig** to keep ribs spaced correctly.

38. **(PHOTO-25)** ***(NOTE: You may want to lightly rough up the surface of the Carbon Spar using 200 grit or steel wool before proceeding then clean with alcohol.)*** With ribs properly spaced using **(Rib Spacer JIG)** & wing plans as reference, install the 5mm (about 0.2 in) square Carbon Fiber main spar into each notch on the top of all ribs making sure it's at bottom of notch in each rib. Glue all around each contact point of spar and rib using **Thin CA.** Locate the balsa 1/4"x1/4"x36" sq. Spar & apply **Thick CA** to the top of carbon spar and install the 1/4" balsa spar on top of **CF** spar. Install rear balsa 1/8"x1/4"x36" stringer into all ribs leaving overhang at wing tip.

39. **(PHOTO-26)** Locate the **7-MM Dia. Fiberglass Anti-Rotation Dowel** and lightly rough up using 200 grit or steel wool where it will make contact in ribs.

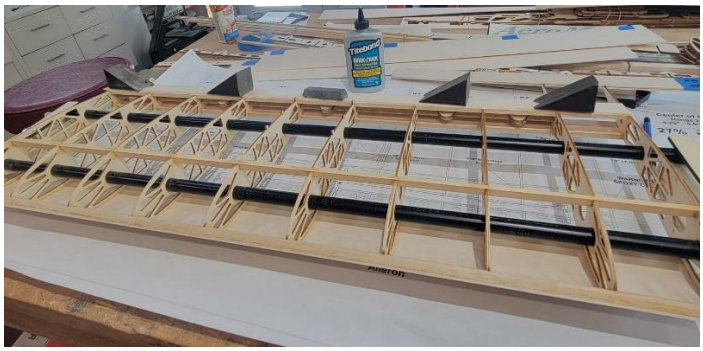


PHOTO-24

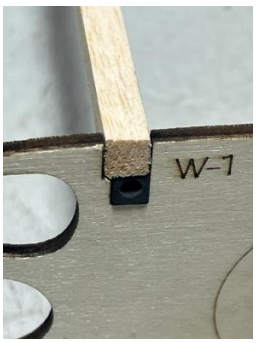


PHOTO-25

PHOTO-26

Locate two of the **(WDB)** pieces in cut sheet **#27** that glue onto the inside of ribs **(W-1)** & **(W-2).** Slide the Anti-Rotation dowel through **(W-1)** then slide one **(WDB)** onto it then slide it through **(W-2)** rib then the other **(WDB)** onto the end of dowel. Dowel should stick out of **(W-1)** rib around **1".** Glue it all in place using **Epoxy.**

40. **(PHOTO SET-27)** Find wing bolt doublers **(WB-1)** & **(WB-2)** located in cut sheet **#6.** Glue these two together lining holes up in each. Install this to the inside of **(W-1)** rib at laser marked location behind wing tube socket using **Thick CA** or **Epoxy.** Located in parts bag labeled **(WING)**
Use one of the **M6 T-Nuts** that is with the Quick-Lock wing mounting parts. Install this **T-Nut** to the inside of **(WB-2)** locate the threaded stud with ball end. Thread one of the nuts supplied onto this stud with washer side of nut facing the root rib screwing into the **T-Nut** about 1/4". Then tighten nut up to root rib seating the **T-Nut** into the wood. Apply **CA** around edges. **See wing lock detail from fuselage plans to the right >**

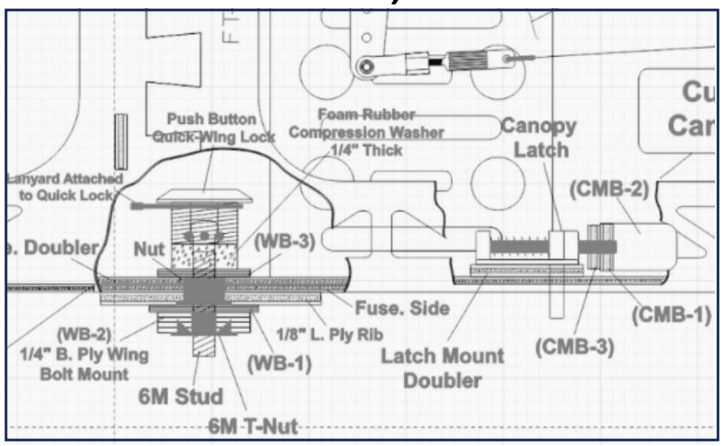
41. Install the Ply **(WB-3's)** located in cut sheet **#6** to the inside of each fuselage keeping holes lined up. **Refer to photo or plans if needed.**

42. **(PHOTO-28)** Install **(WDB)** doublers to the inside of both fuselage sides using the 7-MM fiberglass dowel to

(Note: Detail from plans showing wing mount quick lock & canopy latch detail).

PHOTO SET-27

(Note: To adjust ball end stud, loosen nut on outside of W-1 rib then screw stud in or out till wing lock push button has compressed foam washer by half with lock button installed over stud.)



(Wing Lock & Canopy latch detail from plans)

PHOTO-28

keep holes lined up while gluing. **Refer to photos & plans if needed.**

43. **(PHOTO-29)** Locate the **L.E.** sheeting that's 3/32"x4"x36" & install over **L.E.** even with front edge using **CA.** Apply glue to the tops of all ribs back to main spar. Carpenters glue is the best for this step. Wrap sheeting over ribs all the way to main spar. Hold sheeting down using weights or tape and glue the back of sheeting to main spar using **Thin CA.** ***(NOTE: Use wing rib cross section on wing plans as reference to location of wing sheeting joints recommended).***

PHOTO-29

42. **(PHOTO-30)** With **L.E.** sheeting drying, Install the 3/32"x1.5"x36" **T.E.** sheet even with back of **(TE-1)** trailing edge & centered on top of balsa rear stringer. Glue this to all ribs, stringer & **T.E.** using **CA.**

PHOTO-30

43. Install center section sheeting from **(W-1)** to the first **(W-3)** rib on top root of wing.

44. **(PHOTO-31)** Install the 3/32"x3/8" cap stripping to all remaining ribs **(W-3)** to **(W-6)** butting against **L.E** & **T.E.** sheeting. **Refer to wing plans for reference.**

PHOTO-31

45. Un-screw wing jig from building table and flip over to get ready to work on bottom of wing. Secure in place as before to worktable making sure to keep square.

46. Install main spar, rear stringer & wing sheeting as in previous steps. **(WARNING: Pay attention and don't build two of same wing.)**

47. With bottom side of wing sheeted install shear webbing between all ribs.

48. **(PHOTO SET-32)** Locate one set **(ASP)** & **(ASP-1)** ply servo mount plates located in cut sheet **#5** of the triangle parts labeled **(TAB)** located in cut sheet **#27.**

49. Install **(ASP)** onto the **(S-N-L)** tabs located on the bottom side of ribs **(W-4)** labeled aileron servo bay. Glue in place using **Epoxy** & install 1/4 tri. stock balsa as shown on plans. Make sure the position of part numbers matches with position on plans. Install the triangle screw mounts **TABS** to bottom of **(ASP).** Locate one of the **(SM)** servo mounts in cut sheet **#27** and install these pieces into the bottom side of **(ASP-1)** aileron servo plate. Glue this together using thin followed by **Thick CA** or **Epoxy.** Refer to plans if needed! **(PHOTO-33)** Install a servo into mount to check fit. ***(NOTE: Make sure not to build two servo plate assemblies for one wing.)***

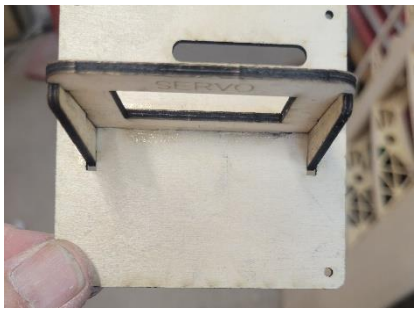



PHOTO SET-32

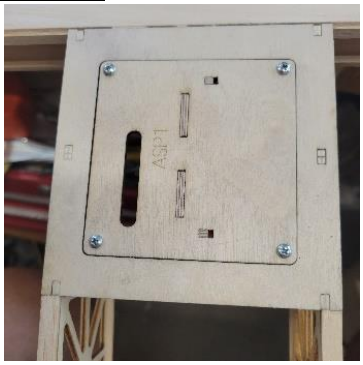



PHOTO-33

50. Install cap stripping to all ribs and butt up against **L.E** & **T.E.** sheeting**. Refer to wing plans for reference.**

51. Finish sheeting wings and sand both ends flush with **(W-1)** & **(W-6)** ribs.

52. **(PHOTO-34)** Locate wing tip parts **(WT-1)** in cut sheet **#9 (WT-2A** & **WT-2B)** in cut sheet **#13 (WT-3's)** on cut sheet **#18** and **(WT-4's)** & **(WT-5's)** from cut sheet **#15.** Install **(WT-3's)** on to top and bottom of **(WT-1)** while keeping even with edges. Install **(WT-2A** & **WT-2B)** triangle braces into slots on inside edge of **(WT-1).** Once this is done install this assembly keying **(S-N-L)** tabs on back of **(WT-1)** into the corresponding slots on **(W-6)** rib. Now install the remaining parts **(WT-4)** & **(WT-5's)** to front top & bottom of wingtip. **Refer to wing tip end view on wing plans if needed.**

53. **(PHOTO SET-35)** Sand wing tip to shape at front & around to back as shown on wing plans wing tip detail. Sand **L.E.** of wing and wing sheeting smooth. Carefully sand off any **(S-N-L)** tabs on the back of ribs & **T.E.** and anywhere else there may be any left.

PHOTO-34

PHOTO SET-35

AILERON ASSEMBLY

54. Locate all aileron ribs for the wing you are working on **(AR)** & **(AR-4'S)** in cut sheets **#7,8 & 9.** Locate aileron **L.E. (A-1's)** on cut sheet **#5** & the remaining pre-shaped notched **T.E.** you cut from earlier.

55. **(PHOTO-36)** Locate parts **(A-2)** on cut sheet **#17.** As you had done earlier with the wing install the 3/32" balsa hinge covers **(HG-2'S)** located on cut sheet **#13** over each hinge channel on top and bottom of **(A-2)** Using Carpenters glue making sure not to get any glue in hinge channel. **Refer to wing plans if needed.**

56. Once this is dry attach to **(A-1)** snapping into notches then once satisfied with fit glue these together with **Thick CA.**

57. **(PHOTO SET-37)** With this aileron **L.E.** assembly done start inserting **(AR)** aileron ribs into the correct location referring to the plans. ***(NOTE: The two (AR-4) ribs with (S-N-L) tabs go in slots lining up with aileron bay on wing).*** All ribs have the **(S-N-L)** to lock over the back side of **(A-1)** Ply aileron **L.E.** With ribs in place held down over plans covered with Parchment Paper install the pre-shaped notched trailing edge stock to back of the ribs. Locate the **(AHM-1 & AHM-2)** ply plates in cut sheet **#27** glue (**AHM-2)** to the bottom

PHOTO-36

PHOTO SET-37

of (**AHM-1)** using lasered outline as guide. Snap this assembly into place over the two aileron bay ribs that have the **(S-N-L)** tabs on bottom of them with **(AHM-2)** facing down. Install the balsa 1/4" Tri. stock. Glue all in place using **Thick CA** or **Epoxy.**

58. Once all is dry, remove & glue the 3/4" balsa triangle hinge stock in place using Carpenters glue. Use 3/16" dowels to get laser cut holes lined up with the holes in **(A-1)** let dry.

59. **(PHOTO-38)** Once the aileron has dried, lying flat and weighted down you can sand to match wing in all areas needed. **Repeat the same steps for the opposite wing before going to the next steps.** ***(NOTE: Again, make sure to build right and left-hand parts.)***

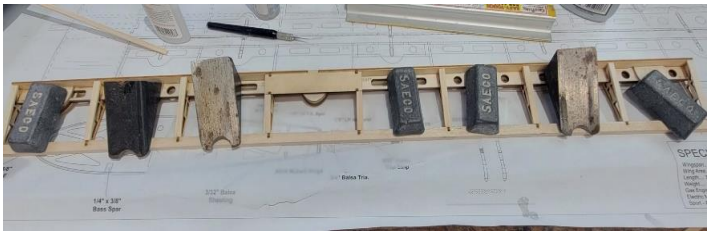


PHOTO-38

TAIL FEATHERS

60. **(PHOTO SET-39)** Locate **(H-1), (H-2)** through **(H-10)** on cut sheet **#14.** Carefully remove all these parts from the cut sheet. Lay flat the horizontal stab sheet that has lasered parts lines drawn out with lines facing up. Install **(H-1)** onto the bottom edge of this sheet keeping it as flush and even with back edge of sheet then glue using **Thin CA**. Lightly rough up the **CF** spars before glueing. Lay all other parts into correct locations including the two **CF** square spars locking them into the tight notches in adjacent piece till all pieces are installed without glue. Once happy

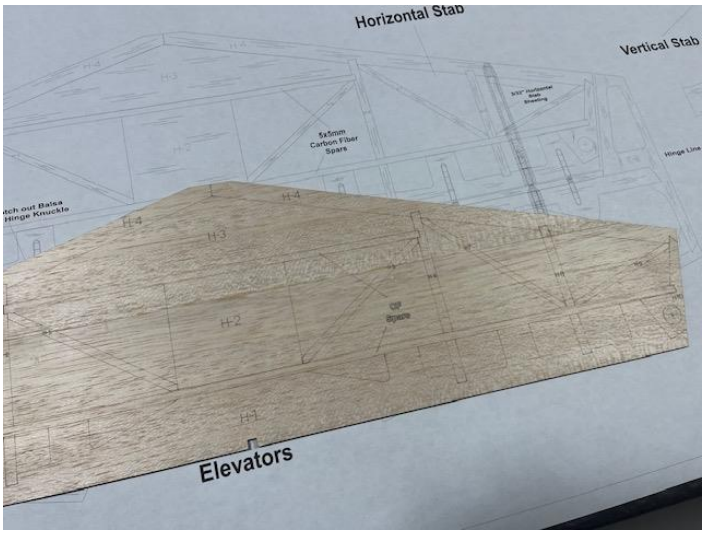


PHOTO SET-39

with fit start gluing all parts while locked in place with **Thin CA.**

61. **(PHOTO-40)** Once all of this is dried lightly sand unsheathed side till happy & removing dust. Next locate the other pre-cut sheeting for stabilizer and install it using **Thick CA** on all cross members and outer frame or use carpenter's glue. Weight down till dried thoroughly.

62. Locate **Elevator** parts **(E-1's)** on cut sheet **#11, (E-1A's)** on cut sheet **#13** and parts **(E-2)** to **(E-8)** on cut sheet **#15.**

63. **(PHOTO-41)** Laminate parts **(E-1)** with two **(E-1A's)** then using plans build both elevators using all the remaining parts gluing using thin & thick CA. Once built install the ply **(EHM)** located in cut sheet **#7** horn mounts into the open cutout on the top and bottom of both elevators in **(E-1A's).** Install the 1/4" balsa triangle stock on the front of elevators in between hinge holes only.

64. **(PHOTO-42)** Locate all the parts for the vertical stabilizer **(V-1),** to **(V-9)** on cut sheets **#14.** Assemble the **Vertical Stab** in same manner as you did with the **Horizontal Stab** assembly.

65. Locate **Rudder** parts **(R-1)** & **(R-1A's)** on cut sheets **#12** & **13**. Laminate these three parts the same way you did elevator parts. Locate remaining parts **(R-2)** to **(R-11)** on cut sheet **#15.**

PHOTO-40

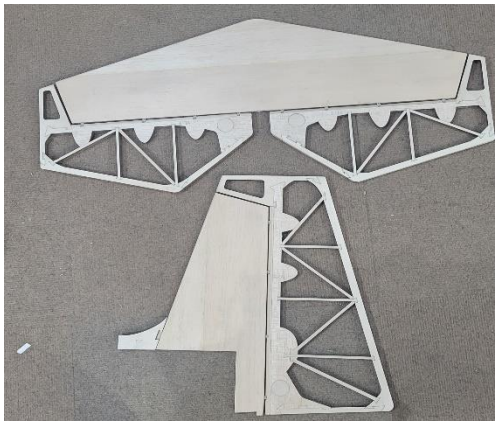


PHOTO-41

PHOTO-42

Build **Rudder** over plans as you did with the **Elevators.** Once built install the two ply **(RHM)** rudder horn mounts from cut sheet **#7.** Install the 1/4" triangle balsa stock on the front hinge side of the rudder in between hinge holes only.

66. **(PHOTO SET-43)** Once tail feathers are built, locate the roughly shaped tail blocks supplied. Using some scrap 3/8" balsa sheet make a **T-Shape** simulating a false horizontal and vertical stab. **Tack glue** the tail blocks to this assembly. **Very lightly tack** glue this assembly centered on top rear of fuselage where horizontal and rudder will be. Glue the supplied tail blocks against **(F-6) Thick CA** making sure not to glue to false stab assembly. When in place start sanding entire assembly to correct shape as seen on plans and photos. Remove false stab. & vertical from the tail block assembly.

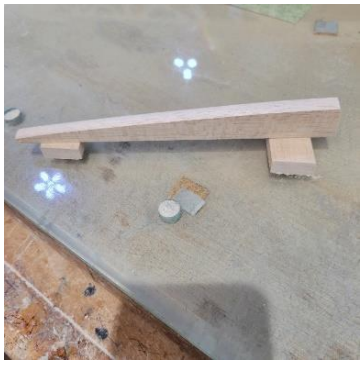



PHOTO SET-43

MAIN GEAR INSTALL.

67. **(PHOTO SET-44)** Using the (4) 8-32 x .75" Cap Screws & washers located in parts bag labeled **Main Gear,** install main gear onto the **(GM)** main gear plate with **T-Nuts** that were added to the inside gear plate during fuel tank compartment construction.

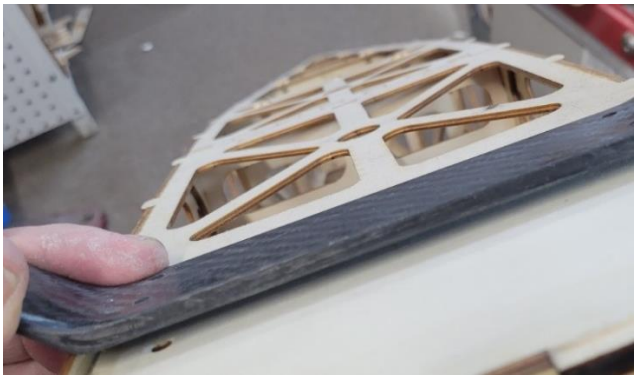


PHOTO SET-44

68. Locate & install tall wheel assembly using provided hardware included Use plans as reference to these.
(NOTE: These assemblies can be removed before covering & reinstalled.

MOUNTING ENGINE

69. **(PHOTO SET-45)** The firewall is pre marked for centerline the **(Dash Line)** to the right is offset center to mount engine for the built in **2.5 degrees right thrust.** This will be the centerline of your engine. Carefully locate where engine mounting holes should be, using the dashed line on the firewall & the solid horizontal line. Drill out appropriately sized holes for your engine using these lines as guides, install **T-nuts** or **Washers with Lock Nuts** on the inside of firewall & mount your engine per manufacturers recommendations. ***(NOTE: Firewall is marked for the DLE 55-RA & Stinger 40-CC Twin.***

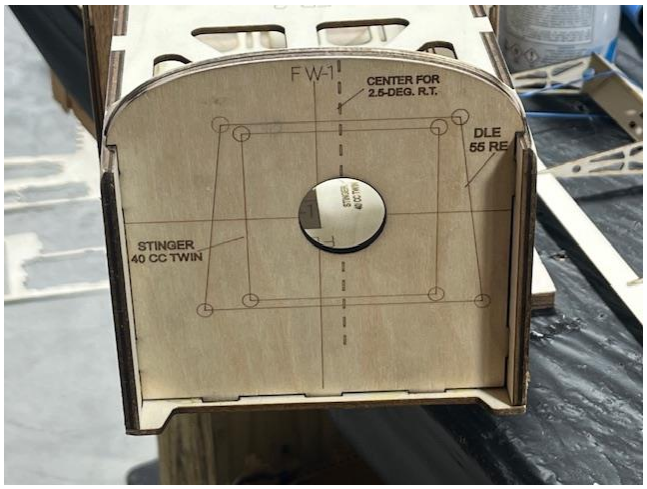
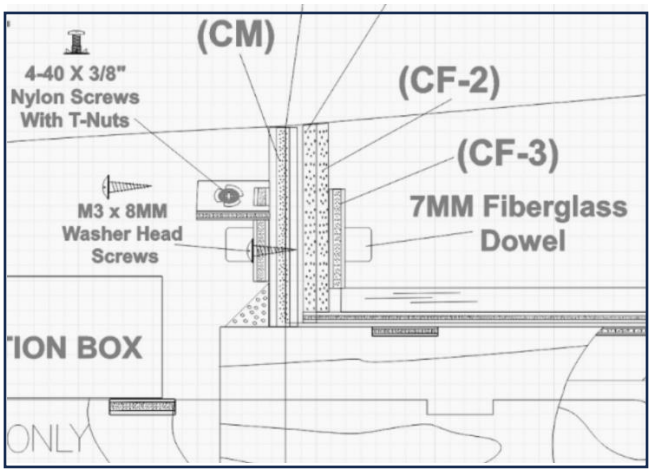


PHOTO SET-45

Shown is DLE 55CC-RA Installed!

COWL MOUNTING

70. Located in cut sheet **#6** find parts **(CMB-1, CMB-2 & CMB-3'S)** assembly one set for top of cowl mounting. **Refer Fuselage plans for detail.** Once these are assembled glue onto the cowl side of **(CM)** using lasered lines as guide & install a flanged head screw into each one as well as gluing in place. **See drawing from Fuselage plans for detail to the right > > >**



(Cowl mounting tongue detail from plans as reference).

71. **(PHOTO SET-46)** Locate **(CM)** in cut sheet **#6** and glue in place directly over **(F-1)** on front top of fuselage. Keep 90 degrees vertical and install a piece of 3/8" balsa stock in front of this former. **See Fuselage plans for reference.**

PHOTO SET-46

72. **(PHOTO-47)** Locate the **(CS-1 & CS-2)** cowl screw tabs in cut sheet **#7**. Rough up the top inside lip of the bottom cowl piece with sandpaper then clean with alcohol. Using epoxy sparingly glue these tabs onto the inside using the laser engraved line on the tab as a guide to how far up to locate from cowl edge.

73. Once the cowl tabs are dry, stand both top and bottom cowl pieces on the firewall end & tape tightly together.

PHOTO-47

74. Using appropriate size drill bit 3/32", drill holes into the top section of the cowl into the wood tabs. (Make sure you're staying about 3/16" away from the seam). Once holes are drilled, install

M3 T-Nuts located in parts bag labeled **(COWL)** to inside of all tabs. Squeeze **T-Nuts** into the tab with pliers gently to set them. Repeat this for other side of cowl.

75. Insert the **Nylon** screws into holes and tighten down to check the fit of the top and bottom cowl pieces.

76. Disassemble cowl halves. With the plane lying upside down hold the cowl bottom in correct position to engine and muffler and mark carefully where to cut out cowl for clearance. ***(NOTE: It's best to cut less then re-fit then remove more till happy in this procedure).***

77. **(PHOTO SET-48)** Before fitting cowl to fuselage mount spinner onto engine for reference. Install bottom cowl section.

78. Install top cowl piece on cowl bottom using the screws used earlier. Once these are screwed together, move the cowl back and forth until you are happy with alignment at the spinner. (3/32" gap is ideal).

79. Once happy with the alignment, tape cowl to spinner and fuselage to hold while drilling. Drill holes through cowl at each tongue mount location then remove cowl and install **T-Nuts** to the inside of all cowl mounting tongues.

COCKPIT - CANOPY

PHOTO SET-48

80. With the plane sitting upright on a work bench and cowl fully installed, you can now get an accurate canopy frame built & canopy cut properly.

81. Locate parts for canopy frame & cockpit **(CP-1)** in cut sheet **#26** locate **(CP-2 TO CP-12)** in cut sheets **#19 & 20.** Parts **(CF-1, CF-2 & CR)** in cut sheets **#19 & 20.**

82. **(PHOTO-49)** Start by installing the 3/16 square balsa stringers from front to back even with outer edges of **(CP-1).**

83. **(PHOTO SET-50)** Laminate **(CF-1)** & **(CF-2)** together. Then find **(CF-3)** in cut sheet **#27.** Glue this onto the inside of **(CF-2)** as a doubler for dowl. Glue this assembly into front notches on **(CP-1)** assembly while keeping them 90 degrees vertical.
84. Snap **(CP-2)** & **(CP-3)** in place into proper notches on top of **(CP-1).** Laminate **(CP-4), (CP-5)** & **(CP-6)** then snap onto front of **(CP-3)** & into **(CP-1)** as seen in images. Using **Thick CA** glue these parts to **(CP-1)** cockpit frame.

85. Laminate parts **(CP-7), (CP-8),** & **(CP-9)** as seen on fuselage plans. **See photos for reference.**

86. **(PHOTO-51)** Snap **(CP-10), (CP-11),** & **(CP-12)** in place then glue using **Thick CA.** Glue laminated seat assembly to the front side of this assembly as shown on fuselage plans.

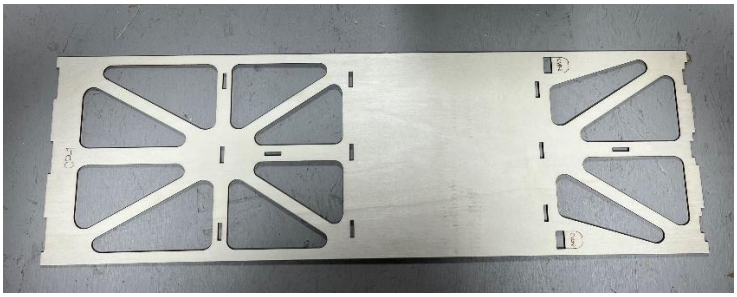


PHOTO-49

PHOTO SET-50

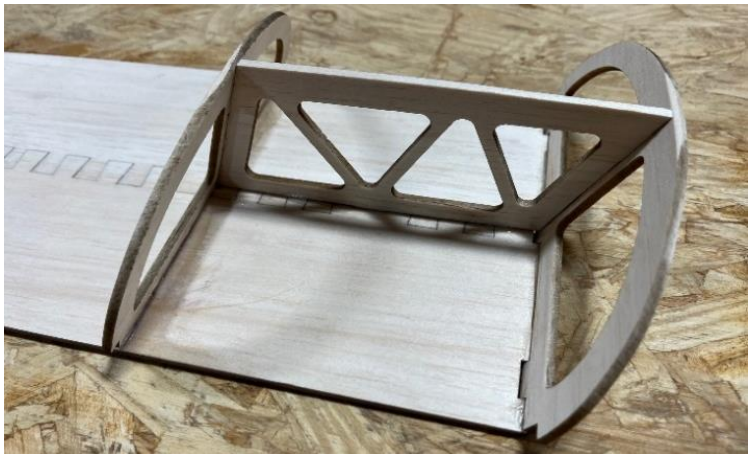


PHOTO-51

87. **(PHOTO SET-52)** Install the two sets of the canopy mount bracket **(CMB-1)** & **(CMB-2)** in cut sheet **#6.** Glue these together to form canopy mounting bracket. Install through slot on **(CF-1)** before sheeting the back of cockpit frame.

88. **(PHOTO SET-53)** Sheet the front and back of cockpit frame with the supplied 1/32" plywood sheets **(CPS-1 & CPS-2)**.

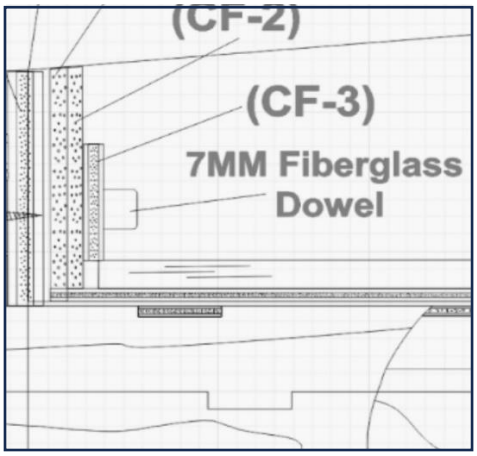
89. With canopy frame sitting in place, install canopy rear **(CR)** to the backside of **(CP-12).** Install the 7-mm x 1" fiberglass dowel that goes into **(CF-1),** & **(CF-2)** glue in place using **Thick CA. See drawing from fuselage plans to right >>**

90. **(PHOTO-54)** Locate ply mounting plates labeled **"LATCH"** in cut sheet **#5.** Glue these to the laser marked location on the upper inside of each fuselage doubler side. Using the small **1.5M X 6MM** screws install the canopy latches with pin facing to back onto each of these plates. Sit canopy frame onto fuselage and using the small ply alignment ring **(CMB-3)** glue this to canopy mount with latch pin inside for alignment. **This ring gives you the tightest fit for canopy. Use see Fuselage plans detail for canopy mount to right >**

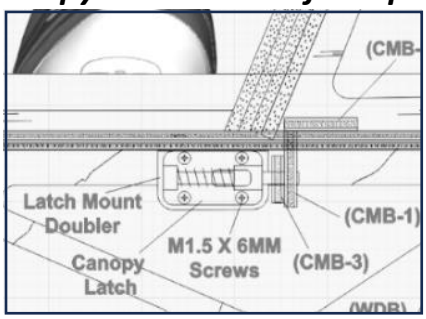
90. **(PHOTO-55)** With canopy frame all locked down in place. Sand cockpit

PHOTO SET-52

PHOTO -53



(Canopy dowel detail from plans for reference)



(Canopy latch detail)

PHOTO-54

frame to accept bubble canopy easily. **(Note: Part (CR) should be around 3/32" taller than turtledeck for canopy to overlap properly.)** Once the sanding is done you can paint the inside of the cockpit the color of your choice. After the paint dries install a pilot figure **(NOT INCLUDED)** 4.25" tall maximum & included instrument panel decal. You may want to clear coat all of this before gluing clear canopy in place if desired. ***(NOTE: Make sure no dust or wood shavings are in cockpit before glueing canopy on).***

PHOTO-55

91. **(PHOTO-56)** ***(NOTE: The clear canopy can be cut out without the canopy frame on the fuse.)*** Pre-cut canopy out of molded frame staying as close to outside edges as possible. sit canopy over the back of the cowl & over the front of the turtle deck. Tape it all down snug against these areas & sides.

PHOTO-56

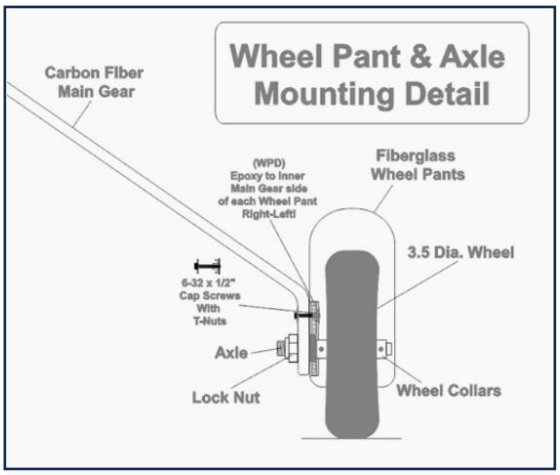
92. Apply masking tape over the seam where the cowl & canopy meet. Apply tape on the back of canopy overlapping turtledeck about ¼". Also, tape where the fuselage sides meet the canopy.

93. Remove carefully & cut the canopy on these tape lines. Once you are happy with the cuts, sit the canopy onto the frame & glue using canopy glue.

WHEEL PANTS94.

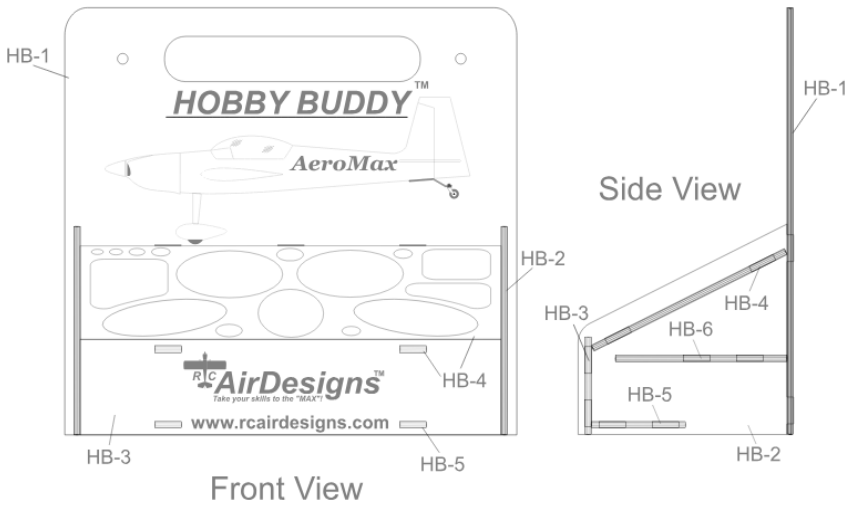
(PHOTO SET-57) Locate the wheel pant doublers **(WPD)** in cut sheet **#6.** Install two of the **T-Nuts** as shown. Glue this assembly in the correct location inside each wheel pant using epoxy keeping parallel to bottom of wheel pant. ***(NOTE: Make sure to make a right and left not two of one side).*** Also, rough up the inside where you will glue this in place with sandpaper. After glue has dried you can carefully drill correct size holes into the gear side of each pant corresponding to the **T-Nuts** and **Axle Hole.** ***(Note: You will also have to notch out the fiberglass for axle to slide into pant from bottom see wheel pant detail from plans to the right.)>>>>***

PHOTO SET-57

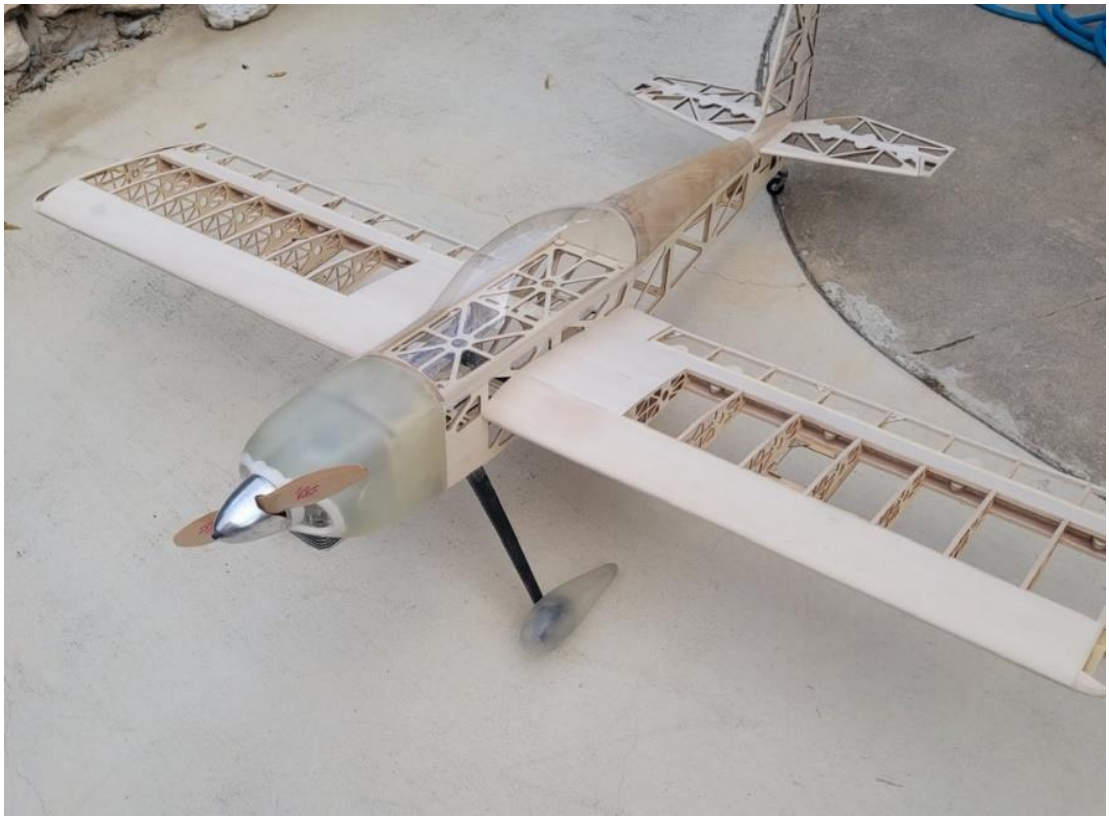


Assembly

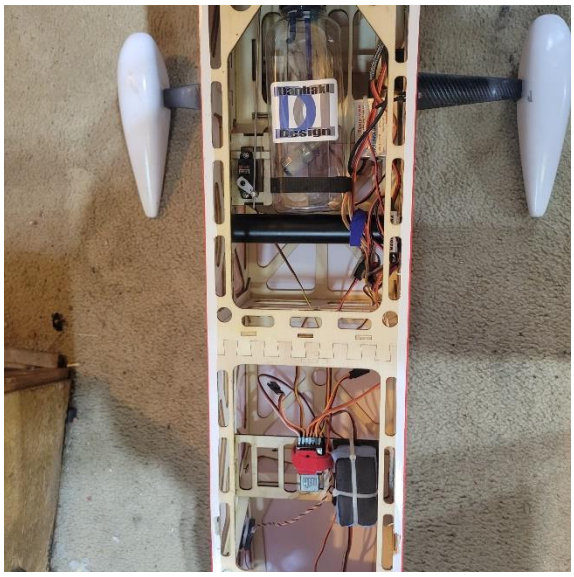
HOBBY BUDDY



Bare Bones ready to cover



Radio & Servo Images



Control Surface Throws

(Low –Medium-High)

Ailerons: 1.22”, 1.5” & 1.75”

Elevators: 1.75” 3.25” & 4.25”

(EXPO RATES)

Ailerons: 10%, 30% & 50%

Elevators: 0%, 60% & 80%

Rudder: NO Rates @ 35% EXPO

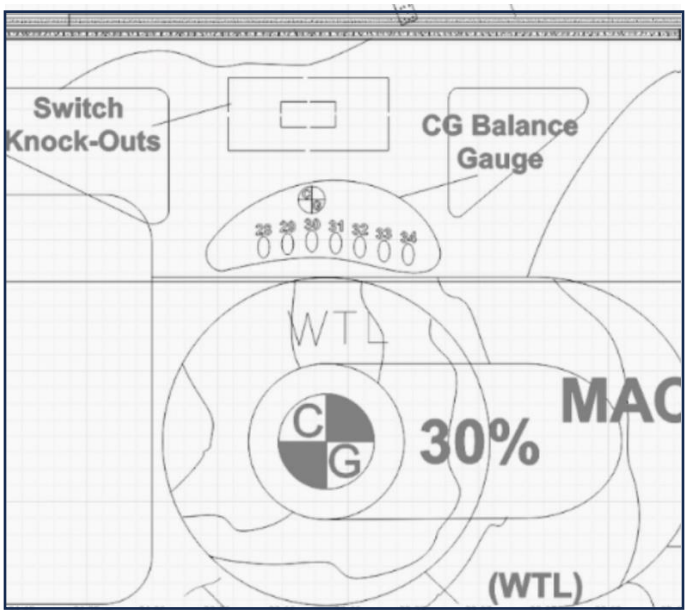
CENTER of GRAVITY - Set-Up

The AeroMax is equipped with a built in **CG** Gauge on the inside of each fuselage doubler over wing tube socket. Simply choose what **CG** setting you want and run a string through the fuselage sides the holes corresponding to that setting. Tie a loop in the ends and suspend from a dowel run through the loops. Ensure wings, canopy and everything that will be in the aircraft during flight minus fuel is installed. Use the battery pack to adjust for the balance preferred. Optional hatches between **F-3** to **F-6** may be used for battery placement.

All recommended control surface throws are with a **30% CG** or **5”** back from leading edge of wing.

CG Range is **4-5/8” = 28% MAC** to **5-1/2” = 34% MAC.** These are max and minimum recommendations and should be selected based on flying experience and style!

The further forward you make the **CG** the more nose heavy and therefore tamer the airplane. Moving the **CG** aft makes controls more sensitive so make those changes gradually to avoid a seriously tail heavy and dangerous situation. ***(Note: See drawing from fuselage plans below of CG Balance Gauge for reference.)***



(CG Gauge detail from plans for reference)

Finished Ready to Fly

We wish you happy and safe flying from RC AirDesigns.