



ISLANDMODELS

QUARK 2M BUILD GUIDE



Build Guide | John "Fireball"

Quark 2m build guide

- Materials required
- 9 off 2mm x 100mm x 1000mm balsa sheet
- 1 off 6mm x 100mm x 1000mm balsa sheet
- 7 off 10mm x 5mm x 1000mm balsa strip (Leading edge & spars)
- 2 off 5mm x 5mm x 1000mm Hardwood (leading edge)
- 1 off 1mm sheet (optional)
- Trace wire and clinchers from tackle shop for pull/pull rudder
- Hardwood strip for pushrod. Servo extension leads

Tubes

10mm alloy or carbon with rod to match (I used B&Q alloy tube with a square steel rod and filed the edges to fit).

5mm Carbon or Brass tube and 4mm carbon rod to fit.

3mm carbon rod for incidence pin and tube to fit if available



Fuselage Construction

- 1: Glue the fuselage sides together (on top of each other to ensure symmetry).
- 2: Glue one piece of circular plywood supplied to each side of the inside of fuselage for control horn rod (again ensure symmetry of both fuselage sides by inserting a 3mm rod through the hole and squaring up).
- 3: Glue the stringers cut from 6mm sheet to the fuselage sides ensuring the formers fit between them (The stringers are cut to fit the curves ignoring the outer overlap as they are sanded flush with the fuselage sides when dry).
- 4: Dry fit the formers into both fuselage sides modifying the stringers as necessary. When happy glue in ensuring square by inserting a 3mm rod through the bellcrank hole. Don't glue the tail together yet. Glue on outer fuselage ply pieces again with 4mm rod inserted. I rounded the edges of these before fitting to help with covering later.
- 5: Glue the bellcrank together and dry fit into fuselage rear using 4mm ply spacers supplied either side of it (There should now be 2 spacers each side of the bellcrank). Close the fuselage rear by Hand and check that bellcrank is free to move with little side to side play. Adjust by sanding spacers if necessary. When happy remove the bellcrank and glue the loose spacers to each side of it. Stringers may need filing to clear bellcrank. When happy with fits glue the rear fuselage together.
- 6: Enlarge the holes in ST1 & ST2 to fit servos of choice and glue into Fuselage adding spacers for strength.
- 7: Sheet the fuselage underside (I used 2mm balsa) with wood grain running side to side (cross grain) & sand square to fuselage sides.
- 8: Sheet the top front (long grain) and sand flush with F1 (cellotape can be used to clamp sheet)
- 9: Glue together the noseblock pieces and glue to F1 allowing sanding room all round (some are hollowing out the noseblock and adding some lead for initial ballast but not essential).
- 10: Cut 4 stringers the width between the fuselage sides at the cockpit front back and middle. Tape the cockpit sides to the fuselage and tack glue the temporary spacers between them. When dry remove the cockpit and sheet the top. Glue in new crosspieces at front & back of cockpit and remove any unwanted temporary spacers.
- 11: Glue on the fuselage top fin piece and sheet the fuse top up to the cockpit.
- 12: Sand fuselage to shape.



Wings

- 1: Glue the trailing edges together and check rib spacing over the plan (from memory there was a small problem here in that the cut did not allow for the laser beam thickness. I added shim to fit).
- 2: Glue the 2 ribs to the ply servo tray (again I found a discrepancy in the cut of one rib and filed to suit).
- 3: Lay the main spar on the plan and glue on all ribs keeping it flat on tabs provided with weights.
- 4: Add the second spar and keep weighted.
- 5: Glue on trailing edge and the hardwood leading edge keeping all flat especially at tips (I use pva glue as it allows correction time).
- 6: Glue the 10mm x 5mm balsa leading edge strip to the hardwood strip allowing enough overlap top and bottom for the wing sheeting to butt up against. Remove wing from plan and snap off the levelling tabs
- 7: Epoxy in the wing tubes and the plywood hook strengtheners.
- 8: Sheet the wings. My method is to apply pva glue to the leading edge of the ribs and to the side of the sheeting, I then butt the sheet side between the leading edge and the ribs using cellotape to hold only where the ribs are (to avoid bowing of the sheet between ribs). Allow this to dry, then glue the rib tops and spar using a paintbrush and bend down the back of the sheeting and tape to the spar.
- 9: Sheet the trailing edge but do not sheet over the servo tray on wing bottom.
- 10: Add rib capping strips.
- 11: Sand to shape



Ailerons

1: Glue leading edge together (again check the laser cut and modify to suit) and when dry add ribs 1-11 and angle using the angle gauge (Ribs are glued with the leading edge flat on the building board ie. back of ribs pointing skyward). Check the angle gauge is used on the correct rib side, it can be confusing as the wings are built upside-down. Check each one matches it's wing.

2: Sheet and cap ailerons adding a hardwood mount for the control horn. The bottom of the aileron is chamfered inwards so it's easier to use cross grain balsa for the underside capping (cyano is useful for this).

3: Sand to shape

Tailplane

1: Slide the ribs over the main tube, align them over the plan and epoxy in place keeping flat.

2: When dry add the leading edge 12mm x 6mm balsa not forgetting to cut the recess for end rib.

3: I Had problems finding a tube to fit the 3mm incidence pin so I rolled a tube from paper coated in pva around the pin and allowed to set. This is then inserted through the ribs and glued in place.

4: Cut off the bottom rib levellers and sheet one side of the tailplane 2mm balsa.

5: Cut the sheeting at trailing edge to plan, sheet other side gluing trailing edges together, add a small filler into the gap, add tip and when dry sand all to shape.

6: Repeat for second elevator not forgetting it is reversed so aligning the ribs to the plan in reverse.

Fin & Rudder

1: Glue the rudder and fin together aligning parts over the plan.

2: The fin needs a support going to the bottom of the fuselage. Cut a 3mm slot about 1/3 the way up from the bottom of the trailing edge of the fin to accept a 4mm carbon rod or tube which mounts into the base of the fuselage. I also sheeted in fin with 1mm balsa for added rigidity (optional, make up your own mind) and left the rudder open as is.

Assembly

Bellcrank: I used a hardwood push/pull strip with wires bound onto the ends as an actuator. The wire was a poor fit in the bellcrank so I bushed it with brass tube (any slop here will result in a very sloppy elevator. I bent the wire to a right angle and soldered a small nut retainer to hold all in place as clearance is minimal at rear of fuselage.

Fuselage wing tubes

Cut the tubes to size allowing for the plywood strengtheners to be added to the fuselage sides. Loose fit the tubes in the fuselage with the plywood added but not glued. Slot the wings into position using the joiner rods and check alignment. Adjust if necessary and when happy epoxy in the fuselage tubes from the inside. When set remove the wings and glue on the plywood strengtheners.

Finishing

- 1: Cover the model
- 2: Drill a hole for the carbon fin support, add a small block onto floor of fuselage to support the carbon rod.
- 3: Install radio gear- servos horns (I used fishing trace wire and clinchers for the pull/pull actuated rudder).
- 4: Add nose weight to balance according to plan.

Control Throws and Centre of Gravity

Measured at TE – Only for info, as you may have your own preferences.

Ailerons : +/- 30mm – 60% expo

Elevator : Maximum allowed – NO EXPO (sharper response)

Rudder: Maximum allowed – 60% Expo

Centre of Gravity: 76mm from wing LE at root

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