

# RG65 Swing Rig

By Eric Rosenbaum

This is a maximum height swing rig for my RG65, and the top of the rig is just short of 1,100mm above the sheer on the hull. Here is a list of the parts used with some alternatives for the T fitting and crane.

Part	Notes
Mast	Skyshark 7PTL extended at the top with a 4mm CF tube.
Main boom	5mm OD CF tube
Forward spar	5mm OD CF tube
Jib boom	0.125" OD CF tube
T fitting	I mold these, but something similar is available from kite building stores. Look for dihedrals.
Crane	I mold these, but a bent piece of 1/16" wire will also work
Sails	These are my design, but there are a lot of designs available on the web.

The rig is made to fit the sails, so providing measurements of boom lengths is not very useful. Swing rigs are easy to make, and there are only a few parts.



At right is a picture the main boom. The tack is attached to a line that goes through a hole in the T fitting and back to the first black neoprene tube. You adjust the tension on the downhaul by moving this tube back and forth. Other than bowsies on the topping lifts, forestay, and jib halyard, all other adjustments are made by moving the various tube segments on the booms.

The clew is controlled by two tubes at the back of the boom. The aft most controls the curve of the sail's foot, and the forward one controls the twist of the leech.



At the back of the boom is a cotter pin, and this is the turn point for the backstay of the rig. The backstay should always have enough tension so that the sail leech is not loaded up. If you release the backstay and store the sails, the panels will slowly pull apart.

Here is a closer view of the T fitting. The main boom is glued into the fitting, but I do not glue in the forward spar (the lower and larger CF tube). The rig tension will hold it in the fitting without any problem, but I can pull it apart to store the rigs. It makes for a much smaller rig box.

The smaller top boom controls the jib's foot. The line coming down from the boom to the forward spar is routed through a bead and back to an adjuster tube. This sets the gap between the jib boom and mast.

The small tube on the back of the jib boom can be moved forward to round out the foot of the sail.



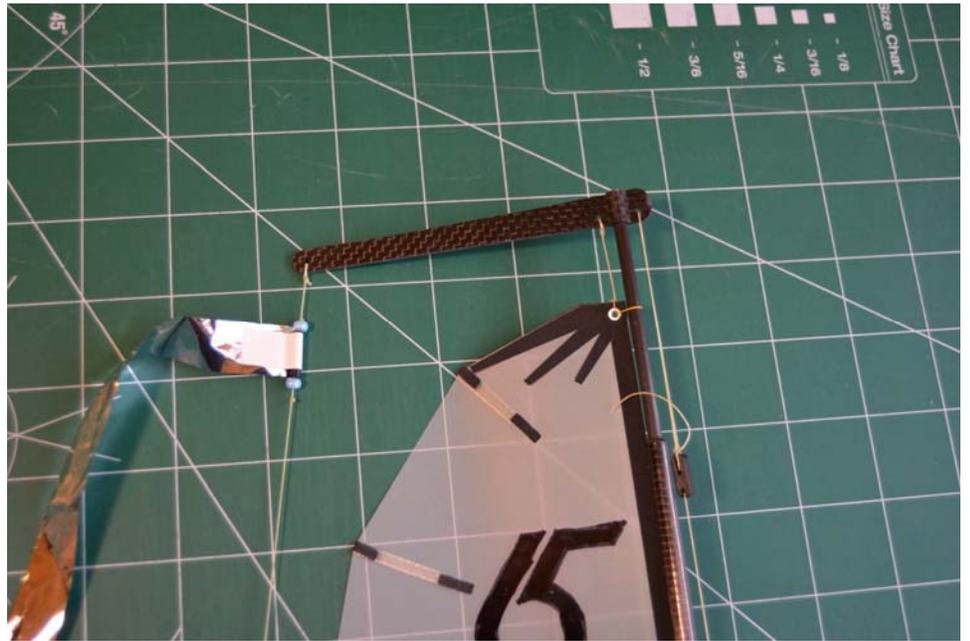
The jib boom pivots on the short connector line at the front of the forward spar. The boom can be moved forward to change the balance of the rig.

There are cotter pins on both ends of the jib boom. The forward one is where the tack and the forestay are attached. The aft one is for the topping lift.

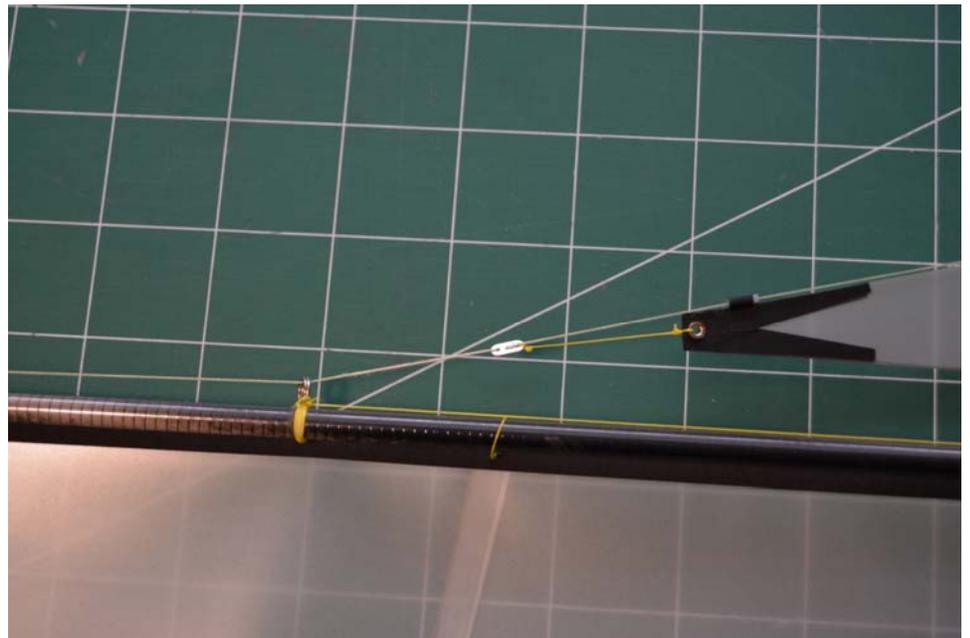


The crane is a molded CF part, but a bent wire will work just fine. The wire needs to be relatively stiff, so something about 1/16" in diameter is about right.

There is a ring tied on the mast that acts as a guide for the forestay, and it keeps the head of the jib fairly close to the mast (see photo below). The forestay goes through the ring, to the crane, and then back to a bowsie.



The jib halyard is tied off to a small bowsie that is threaded to the forestay. This makes for a clean and simple installation.



## Swing Rig Pivot Post

The pivot post described here is built to fit into a 9mm ID tube glued into an RG65. The 9mm tube is epoxied at the deck and at the bottom of the hull.

Working up from the bottom there is the CF base socket, which is a 12mm OD and 9mm ID pultruded CF tube. The roller tube is a 5MM CF tube with 5mm ID / 9mm OD bearings glued in place. The top bearing has a small flange at the top edge that prevents the bearing from slipping completely into the base tube. This, in turn, keeps the roller tube from touching the bottom of the boat.

The tube with the roller bearings is held in place with a small screw that goes down into the deck – the screw's top flange slightly overlaps the top bearing preventing its removal. The 5mm CF tube is sanded lightly to fit into the 7/32" x .014" aluminum tube that is epoxied into the mast tube. Some tape is used to fine tune the fit. The mast I am using here is a Skyshark 5PT purchased from Goodwindskites.com. The bottom two pieces in the photo stay in the boat unless removed for maintenance. Various rigs are plugged onto the CF tube which has the permanently mounted bearings. There is very little friction in this system.



## Swing Rig Pivot Post for a Dragon Force

This photo shows a pivot post designed to fit a Dragon Force boat.

The short length of CF tube is 8mm OD, and it fits into the forward hole on the mast adjuster fitting on a DF. It is cut so that it is about 2mm above the deck fitting when fully seated in the hull.

The long assembly is 0.188" CF rod that is 175mm long. A 38mm length of 7/32" x .014 aluminum tube fits over the CF rod and is glued in place. The white ball is a 3/16" Teflon (PTFE) ball. The aluminum tube has one wrap of Teflon tape at top and bottom to get the fit just right. The tape is 1/2" wide by 3.5 mil thick.



This assembly works well, and you do not have to modify the Dragon Force in any way that would be a conflict with the one design rules. Of course, you cannot use the swing rig in one design racing. This mod is for when you want to race as an RG65, or when you are just messing around for fun.