# HULL STANDS and the PLACEMENT THEREOF

If you own a Seabee, you will eventually need to do a gear swing or perform maintenance on the landing gear system. These hull stands are an absolute necessity for any Seabee owner. The hull stands are easy to make and should cost around $100. This will be one of the best investments you will make for your Seabee hangar. This procedure will explain how to safely install and remove the hull stands. This has worked for me the last 23 years so I hope you find it useful.

## Tools required:

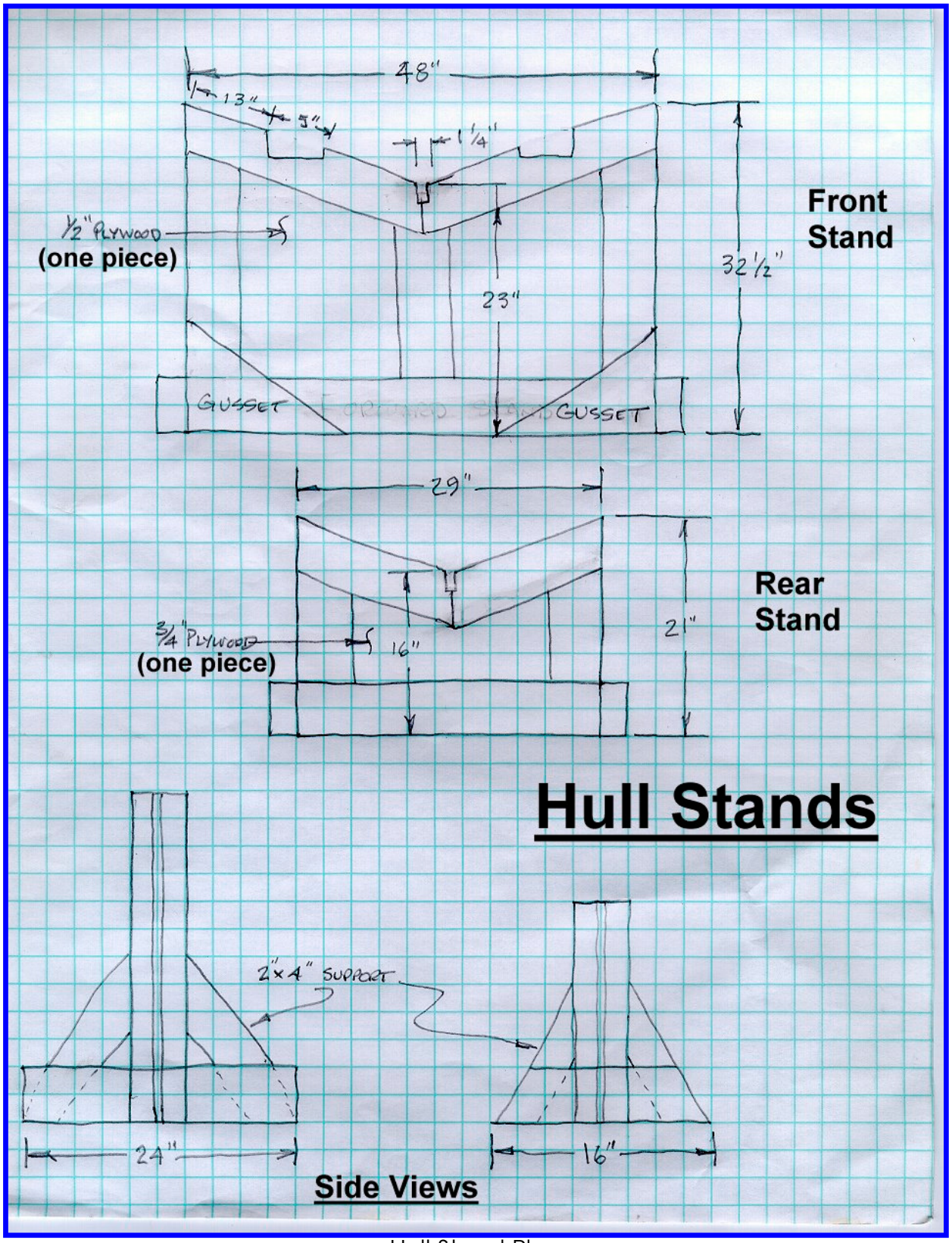
Hull stands – One for the rear (STA 212.5 or STA 175.5) and one for the forward hull (STA 52.5)
Compressor or Nitrogen tank – To inflate the gear struts to full extension (220 psi +-)
Jack – Capable of raising the tail about 18"
Jacking plate – Fits into the axle to raise the gear prior to gear swing (optional)
Schrader valve removal tool
Rags or Kitty Litter for potential hydraulic fluid leaks
4 x 4 blocks – For placing under the rear hull stand if necessary
Wood screws – Use as necessary to assemble hull stands
Glue – Titebond® wood glue or equivalent for all 2 x 4 attachments
Table saw or "chop" saw – Used to cut the 2 x 4's to specs
Jigsaw – For plywood scroll work (keel and forward hull booster notches)
Casters (8 each) – Optional

## Description:

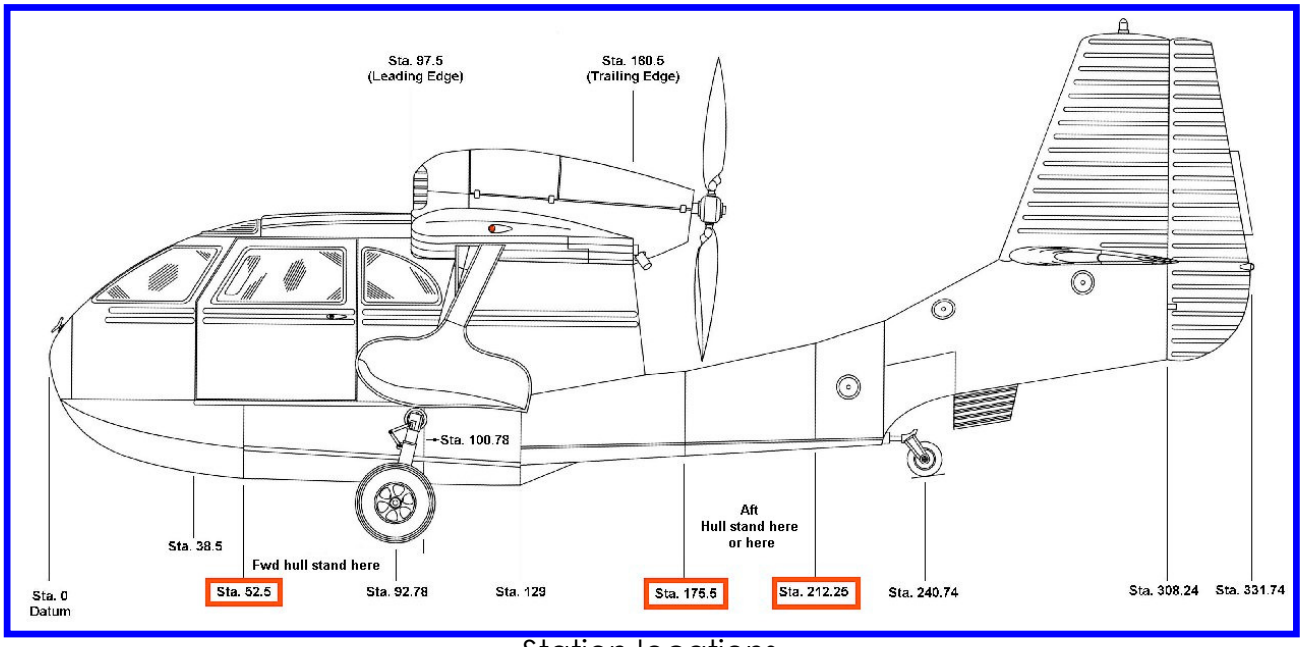
The hull stands allow the Seabee to be off the ground enough to raise and lower the gear safely in your hangar. They are constructed using standard lumber and tools, mainly 2 x 4 lumber and 1/2" plywood for the center webbing and gussets (see drawing and photos below). The contact points on the hull stand should be covered with carpeting to prevent scratches on the hull. However, any soft material can work.

## Construction:

Following the plans below cut out the plywood center piece (webbing) first. The two notches on the forward hull stand are for Hull Booster clearance (an STC). The 2 x 4 outer supports will be fastened to the plywood center section as shown. It is always best to glue and screw the pieces together. Cut out the 2 x 4's for the forward and aft frames to form a "sandwich" to the plywood center section. Attach the horizontal supports on the bottom of each assembly. Attach the diagonal braces to each side of the hull stand. Attach the plywood gussets as shown. Cover the hull contact points with copious amounts of carpeting using a flush-type fastener. Some Seabee owners have put casters on each corner of the hull stands. But these are optional. Let the hull stands dry overnight.




Hull Stand Plans




Station locations

**Hull stand installation:**

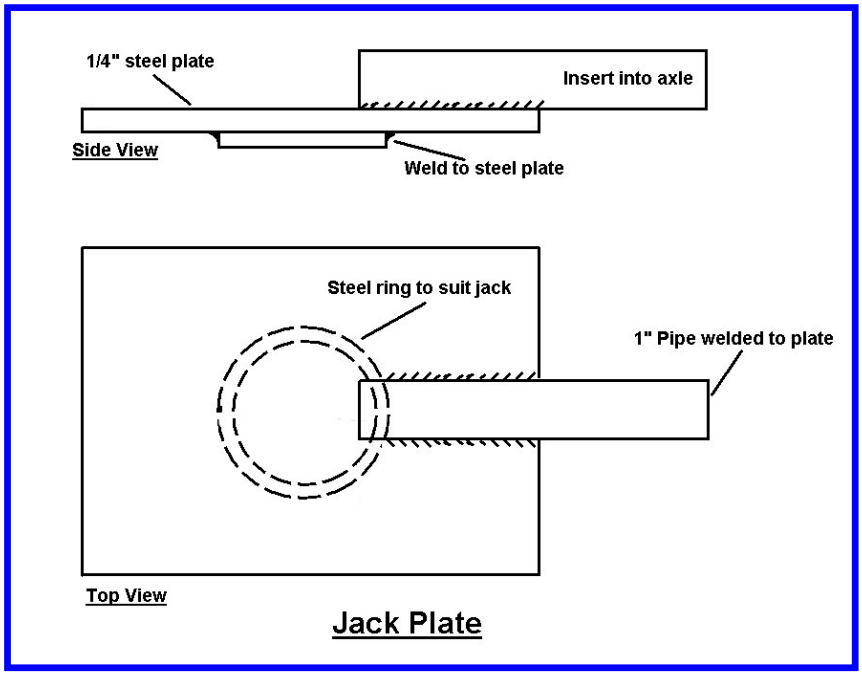
Be sure your hangar is tall enough to accommodate raising the tail of your Seabee about 16". Remember as you raise the tail the clearance required for the vertical fin would be about 11'-6". Move the Seabee into a position that allows for this. Put the hull stands close to the position next to the Seabee. Inflate the main gear struts to full extension (about 14"). The air (or nitrogen) pressure required to extend the struts is about 220 psi depending on how the Seabee is loaded. You may need to rock the wings to get the struts extended fully. Grabbing the aft spar holes near the wingtip and rocking the Seabee slightly can do this.

With the struts extended, place the front hull stand in place and push it back until it is under the STA 52 bulkhead. Always place the hull stands under a bulkhead. Jack up the tail until there is enough clearance to place the aft hull stand in place under the STA 175 or STA 212 bulkhead.

> **Note:** You may have to turn the aft hull stand sideways and slide it under the hull then rotate it into position. This reduces the jacking height required.

Most people use the STA 212 bulkhead for the aft hull stand. If required, place a 4 x 4 block under each aft hull stand support for added height. Remember that as you raise the tail the main gear is being raised slightly as well. If you have two jacks it might be wise to keep the tail jack in place as a safety measure. Be sure the jack is clear of the tail wheel to allow it to rotate to the right about 90-degrees during the retract test.

When the hull stands are in place remove the schrader valve cap and de-pressurize each strut. Some settling of the airframe may happen but don't panic. When all the air is out remove the schrader valve and put it in a safe place. Using a jack (or jack plate - see drawing below) compress each gear until almost fully collapsed. If the struts are filled with fluid it may leak out the top of the strut. Get your rags ready! Place the cap on the schrader fitting tightly to prevent the oleo from extending. Repeat for the other side. There should now be enough room to retract and extend the landing gear safely.




Steel jacking plate for axles

When all maintenance is completed simply reverse the process. Inflate the struts fully (approx. 200 psi), remove the rear hull stand and jack, remove the forward hull stand and with the hull stands clear, deflate the struts to normal extension (5" - 6.5") depending on aircraft weight at the time.

## Conclusion:

There is no easier way to raise the Seabee off the hangar floor than this. These hull stands are priceless and you can't beat the price. The casters are optional but I would guess most owners don't install them, as the Seabee needn't be moved during the retraction test or other maintenance procedure.

> **Hint:** While the Seabee is on the hull stands with the gear retracted the brakes, wheels and bearings can be inspected. You'll see it is easier than crawling around on the floor!

Other photos are listed below.

Hull stands with casters

Forward Hull Stand ⇑ Aft Hull Stand ⇓
(note plywood "sandwich")