

# Finishing the back of the Shay Tender

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The shay is now running so it's time to finish those last few cosmetic details. This page covers the sanders and ladder on the back of the tender. The remaining cosmetic details on the boiler will be covered elsewhere.

**Cass 5 Tender:** Each tender seems to be a little different. The ladder on many tenders loops over the rear edge of the tank and fastens to the top of the tank. This ladder attaches to the rear of the tank at the top and to the floor on the bottom, which permits the top of the tank to be removed without fooling with the ladder.



This photo shows a close-up of the bottom of one of the sanders. I had wondered how the sanders worked since there didn't seem to be a cable to turn them on. It's my guess that the small pipe supplies air to the tee type fitting at the bottom of the sander tank. I'm guessing that the tee like fitting is an air operated valve.



Cass 10 Tender: This photo shows the rear of the yet to be restored Cass 10 tender. The ladder is the more typical style that loops over the rear edge. The sanders appear to be the same type as on Cass 5 but mounted on the floor with the top fastened to the back of the tank. .



Complete measurements were taken of the one of the Cass 10 sand tanks. The photo shows measuring the tank width. The measurements with 1/8 scale dimensions in parenthesis are:

Height excluding the base: 27" (3.25")

Width at top: 18" (2.25")

Width at bottom: 12 (1.5")

Depth front to back: 8" (1")



**Ladder:** The ladder sides were cut from 1/16" thick steel plate. The rungs are 1/8" rod silver soldered to the sides.



**Sanders:** The sanders were fabricated from 1" thick aluminum. The pieces were rough sawed and then finished on the mill.



There is a row of rivets up each side and another row around the bottom of each sand tank. A rivet spacing of 0.25" was used for the #0 drive screws that simulate the rivets. A drilling template was made to ease the task of drilling the holes. The photo shows the template in use on the side of one of the sand tanks.





A back plate of 1.375" wide 1/8" steel was made for each sand tank. The two backs were screwed together and cut at the same time. The photo shows the pieces after the cutting. The upper and two lower legs were later thinned to about 3/32" thickness on the mill.



This photo shows the back of the left sand tank and the front of the right sand tank. The caps were made from 7/8" diameter brass rod with a 4-40 filister head screws through the center. The head of the screw was filed down so that the screw slot was no longer there. The output pipe is 3/16" tube that will connect to a short hose.



**Finished:** Well, not quite finished, still need pieces of hose to run from the tubes through the floor. Will deal with that when the pipes from the sand dome are finished.

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