How To:

Make an Auxiliary Gas Tank For your Motorcar

By Joel Williams

Railroad motorcars were not designed for travelling long distances. But that is just what we do with them. Carrying extra gas in cans is not the most desirable due to the safety aspect.

My solution was to build auxiliary gas tanks for under seat mounting. One tank holds 5 ½ gallons and the other 4 gallons. The smaller tank is due to the extra space the starting crank takes on the right side.

I started by looking at the seats. If you don't have a Fairmont M19 with seats you can to skip to the next part.

The outer mounting bracket sits on the floor with a bracket below the floor for extra strength. If I could move the bracket out to the frame rail it would be stronger and give me 2 inches extra room for the width of the tank.

Why didn't Fairmont build it that way? Well there's a number of bolt heads sticking up through the frame at that point. Two can be replaced with flat head bolts with the heads countersunk into the frame rail. The other one requires a hole in the bottom of the seat bracket. Two new holes go in the bracket under the seat and two new holes are drilled in the frame rail for the seat mount. Brackets hold the tank in place

Fuel flow

How does the gas get from the auxiliary tank, sitting under the seat, to the engine? An inexpensive 12-volt electric fuel pump is used to pump gas to the stock gas tank. A switch is mounted on the control panel. When your main tank supply runs low you just turn on the pump and let it go.

Connection to the main tank

There is no vent in the auxiliary filler cap. This eliminates fumes in the passenger area. The gas cap is a two inch truck cap that can be purchased at many truck stops. You screw down the handle and the rubber disk expands to seal the filler neck.

Two lines run to the stock gas tank. One for fuel transfer and the other is the vent. When the fuel transfer pump is running you can't over fill the main tank because the excess will return through the vent line. This is a neat – no spill system.

Modifications are required to the stock gas tank. I machined two brass disks and put 1/8" pipe threads in the center. The stock gas tank outlet to which the fuel bowl is attached is made the same way. After ¾" holes are cut in the tank, these brass disks are soldered to the tank. One goes on the top of the tank and is used for the fuel inlet. A right angle fuel hose fitting is attached to this. The other goes on the front of the tank at the top and is used as the vent and fuel return.

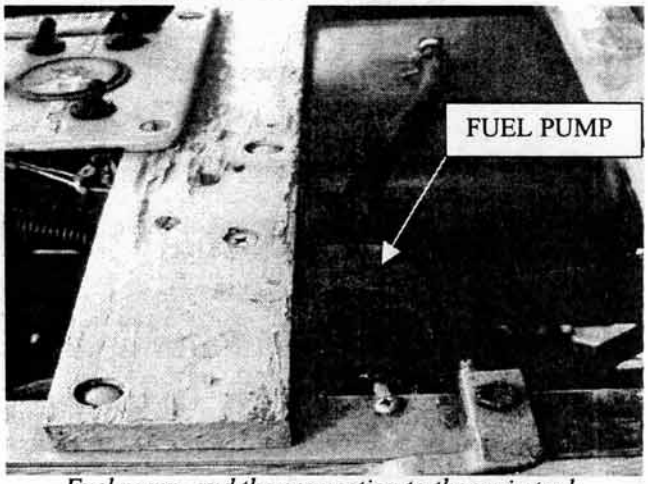
When you take out the stock tank to modify it, make sure you drain all fuel. You can then fill completely with water and drain. That eliminates all gas fumes and makes it safe to work on. After modification you can paint it and reinstall.

Building the auxiliary tank(s)

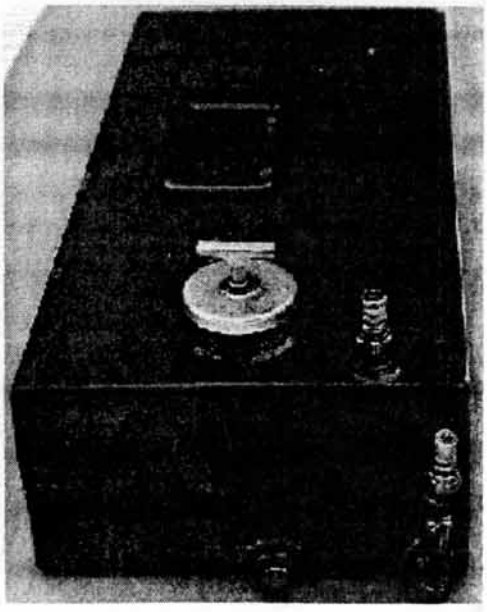
The tank is built from 1/8" steel. It's heavy but practically puncture proof . The metal was bent in two "U" shapes and the seams welded together. The dimensions depend on your particular installation.

My large tank is 6"H x 10 ½"W x 21"L. The smaller tank is 16" long. A two inch inside diameter pipe was welded on top for the filler. After welding a hole saw goes down the pipe to cut the fill hole in the tank.

Quick disconnect hydraulic fittings and a folding handle make it portable. It can go to the gas station to be filled and then be installed on the car.



Fuel pump, and the connection to the main tank.



Tank with carry handle and quick disconnect fittings. The return line must be on the top of the tank. Otherwise vapor pressure from the gas on a hot day will push gas up to the main tank where it will spill out the cap.