

Restoring Ford 9N-90:

A Tractor for a Working Farm, by Joel Wilbur



9N-90 has been in the Wilbur family for forty-nine years. It was discovered in a barn in North Smithfield, RI in June 1965 by my father, Paul, while delivering hay to a nearby farm. The tractor looked run down, with flat tires, a missing grill, broken right side dog leg, smashed dash and hadn't been started in many years. My father, only sixteen at the time, went home and told my grandfather, Lester, about the tractor. My grandfather was excited about it since he knew he could get it running again and fix it up as a reliable farm tractor. After one hundred dollars in cash changed hands, it ended up on my grandfather's farm. Since, as always, times were tight, the shattered aluminum dash was pieced together with sheet metal and screws. The ignition light was removed, since it served no purpose to him and was in the way of the repair. The front 19 inch rims were cut off the wheels and 16 inch rims were welded on to fit tires off an old Chevy pickup truck. A good used battery was dug up in grandpa's barn, and, after cleaning of the carburetor and spark plugs, the old tractor started right up. 9N-90 was then painted red and gray to make it look like the "newer" Ford tractors, which were more valuable at the time. Grandpa always knew it was an early 9N because of the aluminum hood but never looked at the serial number or thought that one day it would have value as a collector's item. It was a tractor and tractors were made to do work. The old Ford was later converted to 12V to make it easier to start in the winter; however, the 2 wire 6V generator was saved and the original generator pulley was cut and welded to fit the alternator off a Chevy pickup truck.

The 9N was a great tractor for my grandfather's farm. Electric start meant he didn't have to pull the flywheel on the old JD to start it. The 3pt hitch made it easy to change out implements and the wide front wheels kept it more stable on the uneven ground he was farming. Although it did not fully replace his 1938 John Deere Model B, it became the primary tractor on his farm. There, it spent the next thirty eight years of its life, plowing snow in the winter, the garden in the spring, in the summer, mowing the hay fields and pulling the hay wagon and other haying equipment, and in the fall, it got to haul in the wood. Since it had an aluminum hood, my grandfather wasn't concerned about it rusting, so it stayed outside, uncovered, year round.

In 2003, it got transported from my grandfather's farm in Smithfield, RI to my family farm in Woodstock Valley, CT. In CT, the 9N-90 lived an easier life: the engine oil was changed for the first time in years, it resided in a barn, and was only used to mow a few cow pastures. On our farm in CT, it was used for three years until one of the rear 32" loop rims blew out due to rust from calcium loading. By this time, however, my

grandfather and father both knew the old 9N - with the low serial number of 90 - had much more value as show tractor than as a working tractor. It was moved to the rear of the barn and awaited restoration.

In 2009, a devastating barn fire occurred - but, thankfully, we had a bunch of old quilts draped over the hood, and thanks to the quick response of the local fire departments, they were able to keep enough water on it so that 9N-90 wasn't totally destroyed.



Needless to say, this fire set back the restoration by a few years. Finally, in May of 2012, my father and I began restoration on 9N-90.

Prior to May of 2012, when the restoration began, the furious searching started for some original 1939 parts we needed. The list wasn't that long, since the majority of the tractor was still intact, however the list included: Smooth Axles off a 1939 tractor, a 32" loop rim, ignition light, cast chrome radiator cap, rear axle trumpets, and original four spoke steering wheel. From a tractor grave yard in central New Jersey, came a pair of smooth axles, rear trumpets, and 32" hat rims that were taken off of a later 1939 9N (serial number in the low 9000's). The ignition light came from a collector in South Jersey, the four spoke steering wheel (very rough shape), came from a collector in Western Connecticut, and the chrome radiator cap was given to me by a generous old-timer in Wisconsin. Much to our disappointment, a 32" loop rim was nowhere to be found.

Disassembly is always the easiest part of the project - the hard part is remembering how it goes back together. Within two long days, we had 9N-90 stripped down to just the castings. This included the removal of the Ferguson mid mount PEO 21 mower.



The rear axles and trumpets were pulled and replaced with smooth axles. Once accessed, we found that the inside of the axle housings, hydraulic pump, and transmission were caked with "mud" from old fluids and simply from sitting for so long. I'm sure the barn fire didn't help this any.

Once we had 9N-90 taken apart, every part was sand blasted down to bare metal - the smaller parts were sand blasted in a homemade blasting cabinet and the larger ones were blasted outside. All cast aluminum parts were blasted with crushed walnut shells to get the pits cleaned out and heavy paint removed. The walnut shells worked perfectly for the aluminum because it did not dig into the aluminum at all, and was a quicker (than by hand) and gentler (than using sand) way to clean it - Of course that was prior to the hundreds of hours we spent sanding those parts later on. 1,500 pounds of sand later and after a day and a half of sand blasting, the tractor was down to bare metal.



After a quick hand sanding and cleaning of all the sand off the tractor, a first coat of self-etching primer was applied to prevent it from rusting.

With this task complete, we started focusing on other tasks: For instance, sanding down the fuel tank and spark plug wire tube by hand using 600 grit, and then sending it out to be tin plated; Also, cleaning / sanding the radiator cap, Ford emblem, Ferguson emblem, choke knob, steering wheel cap, throttle lever, and a shifter to be sent out to be chrome plated. Not knowing at the time that the shifter on 9N-90 was original with the threaded top allowing it to accept a chrome 1" diameter ball, I had acquired a new chrome shifter: So... Now I have spare chrome shifter in my collection of leftover parts.

The push button starter switch was in rough shape from the fire- so there was nothing left of the cardboard style circuit protection to keep the two brass studs from shorting out against the casing. Luckily, when I went to the tractor salvage yard I found an early cast aluminum 9N dash with the push button starter switch in the upper left corner - the only difference between this one and the original 9N-90 part was that this dash had the identification tag riveted on the top instead of the casting number (146) engraved. Despite the difference, I ended up buying the entire dash with the push button starter switch because the price was right. After doing a dry fit of the new push button starter switch to the original dash, I noticed many differences. First of all, the push button starter switch had a larger diameter than the original switch so it would not fit in the hole on the dash. The other major difference was that the throat of the push button switch was 3/8" shorter than the original. This made my decision easy - I had to repair the old switch, because I was not going to modify the original dash to make the new push button switch fit. After opening it up, and figuring out how Ford originally designed the switch and used a cardboard insulator for protection, I decided to slightly modify their design. So - off to the mill I went with some Delrin and machined out an internal insert that was identical to the cardboard - I figure this will last a lot longer and we won't have to worry about the switch shorting out over time and causing a fire. I also made some Teflon insulators to fit around the brass studs to keep them centered in the holes and isolated from the casing. I did, however, keep the cardboard isolator on the outside of the switch to keep it looking original- although I did put a small layer of Teflon tape between that and the case as an extra precaution.



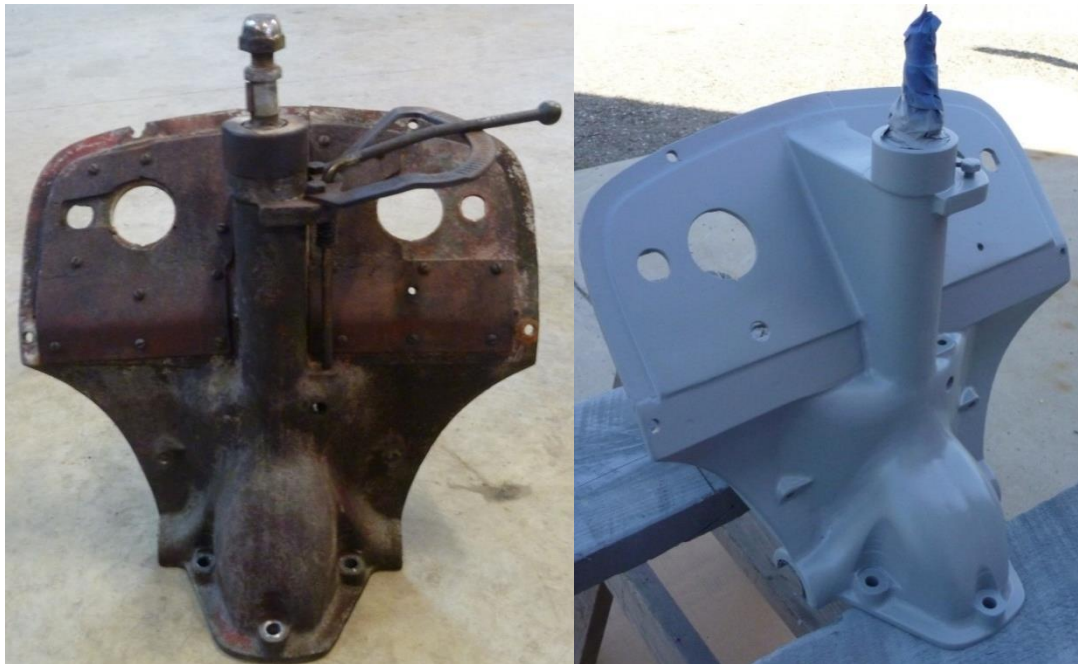
After I discovered an old-timer from NJ who made his living restoring steering wheels, I brought him the 4-spoke wheel to see if he would help me out with it - seeing I have zero experience in steering wheel repair. I now know why he was able to make a living restoring steering wheels: He did great work, but wanted to charge me \$500.00 to restore mine! I told him thank-you but... No. Even though he didn't get my business, he was kind enough to give me some pointers on how to approach restoration. Restoring the steering wheel involved cutting out the majority of the plastic material around all the joints where the spokes meet the outside of the wheel and inside of the wheel. I had to weld three of these joints back together and then, using a putty, re-form the shape of the steering wheel. I cut out many of the sections of the steering wheel where the plastic was chipping away or starting to bubble up: This was an indication there was moisture under it and starting to rust out the metal rods below. I cut the wheel in many locations and applied a putty to re-shape the wheel. After the putty dried, it took many hours of sanding to get the shape just right: 40 hours later, the wheel was complete.



While I was off working on these side - 'detail' projects, my father started sanding down the aluminum hood and preparing it to be repaired by the experts at Sharon Auto Body, located in Sharon, CT. All told, the aluminum hood was in rather good shape having survived a barn fire and after being beaten up over the years: There were three small missing pieces of the hood where it attached to the dash and, prior to our family acquiring 9N-90, it had had a collision with a fence post that completely destroyed the grill and pushed the hood backwards, shattering the dash. Sharon Auto Body's repair is barely noticeable and blends right in. Following the repair, we sanded down the hood, which took many hours: Every time Dad tried to sand out a pitted area, he almost always uncovered a more pitted area. After sanding it out to a 2000 grit finish and adding a coat of Shark Hide Aluminum polish, the hood holds a perfect shine.



The aluminum dash, with casting number 146 stamped in the top near the steering column, was a little harder to repair than the hood. Before renovation, the dash was being held together by sheet metal and screws placed wherever it was convenient for my grandfather to put them. The repair didn't look good at all, and every collector will cringe when they see the picture of it. Keep in mind, though, that Grandpa's repair worked well for almost half a century and 9N-90 was meant to do work. Although I tried to Tig weld the aluminum dash back together, since the castings were so impure, I kept blowing through tungsten rods and was not able to get a strong bead formed. After giving it a good attempt, we ended up taking the dash to an expert - Ernie Nowakowski in Phoenixville, CT, who was able to get a solid, strong bead along the inside of the dash. He then removed all the sheet metal and screws and welded all the holes.



Our next task, and maybe the most innovative, was to fabricate a 32" loop rim. Since we searched for years - even before the barn fire - for a 32" loop rim and had struck out everywhere we looked, we decided to make our own. The original 32" loop rim was beyond repair - we estimate that 40% of the rim was rusted out and missing. It was a miracle it lasted as long as it did. My father found a company out in Missouri that sold a blank 32" rim that had the same profile as the original rim; however, it was over an inch wider than the original 8 inch wide 32" loop rim. So, modifying the blank involved cutting over an inch out of the center of the rim

and then welding it back together to get the proper width. Using my metal cutting skill saw and a homemade jig, we were able to cut the center of the rim out by rolling it across the floor.



Once the Rim was cut into two pieces, I got to work on clamping it down to my welding table and tig welding it back together, while my father started removing the loops from the old rim.



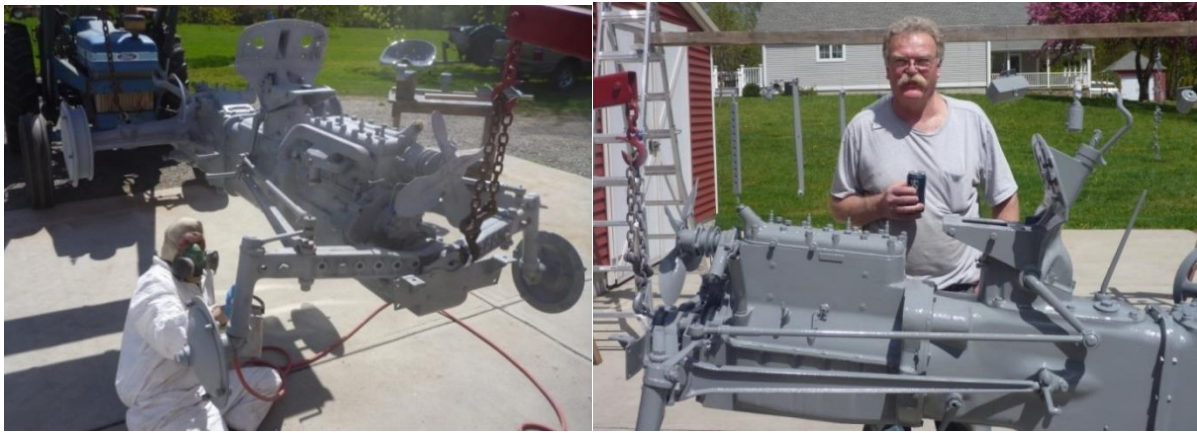
Using the original wheel center and bolting the loops on to it, we got the loops in the proper spot on the rim. We then marked their hole locations and drilled holes in the rim. Then, welding on the loops from the inside gave it the appearance that they were riveted on like the originals.



Hours of grinding, sanding, priming, and painting later the rim was complete and ready to be used again. Since the original rim was removed prior to the barn fire of 2009, the original bolts and nuts for the loop rim were lost. Finding ones that have a 1-1/16" head with a 5/8-24 thread (not a standard size) was not an easy task. So, to the lathe I went and made identical nuts and bolts out of 1-1/4" hexagonal bar stock.



In May of 2013, 9N-90 was ready to be painted, so we prepared for two days prior: This involved sanding down all the parts to 220grit or finer and cleaning off all the dust and other impurities that may have existed. On May 10, we got up early in the morning to set up all the parts outside to be painted after the morning dew settled and after putting on my Tyvek suit and painting mask I went to work. Luckily for me (since I hate painting), completing the job only took a few hours. We left the tractor and parts outside for the rest of the day to allow the paint to harden.



Let me tell you - there is *nothing* like a cold beer at 10:15 in the morning to celebrate reaching this milestone! Later in the day, we moved all the parts back into the barn and began reassembling 9N-90. Remembering how the tractor went back together wasn't as hard as we thought it was going to be - especially since we had taken many pictures of the dis-assembly process and had pictures of other early 9N's, such as SN16 and SN406 , which we used as reference. Late on May 12, 2013, 9N-90 stood on all four of its tires, something that hadn't happened since the fall of 2006.



On Saturday, June 8th, 9N-90 was started for the first time since it was put into storage. With a cigar in his mouth and beer in hand, Dad took 9N-90 for a few test laps around the cow pasture. I haven't seen Dad smile this much since I moved out in June of 2004. Although 9N-90 wasn't fully complete at the time, we were able to bring it to the Old Iron Tractor Club show in Woodstock, CT the following day.



Since the show, we have continued making many great contacts and finding original pieces that we still need. We have acquired the proper oil fill cap, brass fuel bowl, threaded chrome ball for the top of the shifter, and also the adjustable 3pt lift arm (left side). Still, we are missing a few parts - some parts are harder to find than a set of hen's teeth.

This spring, we plan to restore our Ferguson SKO-20 cultivator to put on the 3pt hitch, or maybe the Ferguson mid mount PEO-21 mower. We haven't seen many mid-mount mowers attached to the 9N's at shows, so we are leaning towards that option; however, I worry with it on the tractor, my father would use it to mow the pastures (it has always been a working tractor, after all). We plan to bring 9N-90 the Portland, IN show in August.

9N-90 was restored in loving memory of my late grandfather, Lester E. Wilbur, a Purple-Heart recipient from World War II.