



Foothills Antique Tractor and Engine Club

Featured Equipment

John Deere Model H



A fine young man on "Wendell" at the first show after painting.
Foothills Club's Oasis Garden Center Show, August 1995.
(the paint was still too fresh to apply decals)

**Year, Make,
Model, SN**

1945 John Deere Model 'H'
(Serial Number is not legible on rusted plate)

Owner:

Tim Prather
Maryville, TN

Brief history:

This little John Deere H was purchased new in 1945 by my grandfather's brother, Wendell Hammond. Uncle Wendell operated a small dairy operation in Oconee County, Georgia. He explained that this was the first tractor available after the War (World War II). It was not his first choice, but he admits it sure beat a team of mules. Notice that this tractor is 'loaded' with all but one option. Electric lighting and charging, electric start, hydraulic system and PTO shaft were all optional. The only missing option is mechanical shutters - this one has a curtain.

Uncle Wendell used this tractor for everything - planting, cultivating, towing wagons, skidding pulpwood, running a hammermill, etc. until he shut down the dairy in 1971. He had a John Deere Model A by then for most chores, so the little H was retired to the barn.

It was moved only a couple of times over the next 23 years. I discovered it one summer when I was helping with the silage harvest and always wanted it, but never said anything about it until years later. When attending Aunt Ila and Uncle Wendell's 60th wedding anniversary celebration, I snooped around the barns and found the H in the back shed, complete with cultivators and planters. A couple of weeks later, I visited and asked about buying the tractor. Uncle Wendell said that he was 80-something years old, had not used the

tractor for over 20 years and probably wouldn't be using it any more. Of course, he was curious what I wanted it for, so I told him I wanted to restore it for my collection. After making sure his kids didn't have any interest in the tractor, we negotiated a price that included the tractor, cultivators, planters, cutoff saw mandrel and belt. Then we agreed on a date to pick it up - Christmas Eve of 1993.

Restoration:

Although the little H had never been left out in the weather, many years of sitting in the open shed behind the big barn had taken its toll. The tires had gone down, most of the paint was gone and the engine oil was real gooey. The tires were not damaged, though, and they held when we inflated them. However, we elected not to try to start the engine even though it was not stuck. It turns out that towing the tractor to the trailer was a smart choice, because the fuel lines were completely clogged anyway.

Restoration was a pretty big job. The engine cylinders were worn way more than the a ring job would fix, so it was sleeved to fit the .030 oversized pistons already in the engine. Other engine repairs included oversized piston pins, new valve guides and a valve job.

The engine also suffered a problem common to the John Deere H - a bad camshaft. The H has a unique design with the clutch on the camshaft, eliminating the need for another set of reduction gears in the transmission. This design allows a clutch speed of 700 rpm at the rated 1400 rpm engine speed, but also places tremendous thrust loads on the little ball bearing at the timing gear end (left side) of the camshaft. When this bearing fails, it allows the timing gear to run loose on the shaft, damaging the splines. Eventually, the timing gear can run against the crankshaft throw and break. After a couple of calls to the John Deere Atlanta Distribution Center, NOS (new old stock) timing gears and a NOS camshaft were located. (If you are restoring an H, check the camshaft and timing gears carefully and be aware that there are two different camshafts used. Early models had more, smaller splines on the clutch end than late models.) Remaining repairs included axle bearings and seals, fixing the seat support and filling a few minor dents.

Like most tractors of this vintage, the H had no water pump or thermostat in the cooling system. Instead, the cooling system operates on the thermosiphon principle. Since heated water is less dense than cooler water, it will rise and be replaced by the cooler water. In the old tractors, the water heated by the engine rises through a pipe to the top of the radiator. Cooler water from the bottom of the radiator flows into the engine, setting up a continuous flow. However, unlike your car or modern tractor, there is no thermostat to regulate the engine coolant temperature. The operator has to regulate the temperature by regulating the flow of air through the radiator. This tractor had a curtain that is raised or lowered to regulate airflow, but some tractor had mechanical shutters that could be controlled from the dash. The curtain was missing, but I found one for a patten in a junk yard and my mother made a new radiator curtain from black canvas.

The electrical system was restored to almost-original condition. The lights, generator and starter are original, but I had to install a new switch, ammeter, voltage regulator (replacing the original cutout relay) and fabricated a battery tray and hold down. Because the battery does not last well in the heat when the tractor is used continuously (it is located under the exhaust pipe and hot water pipe, in front of the engine, behind the radiator and over the 'cool' water pipe), Uncle Wendell never used the electrical system. He removed the battery and fan belt to eliminate the problem.

Since the tractor has magneto ignition it can run without the electrical system, so Uncle Wendell kept the tractor well-tuned and started the tractor by hand. Since I wanted it as near original as possible, and since I was experiencing carpal tunnel syndrome, I chose to restore the electrical system so I could use the electric starter. Having lights also helps when loading and unloading at night!

Every square inch of the tractor was sand blasted, then primed and painted with John Deere Classic Green and John Deere Yellow enamel paints. The steering wheel cracks were filled with reinforced body filler, sanded smooth and painted black. Laser cut vinyl decals from

Travis Jorde and gauges from Antique Gauges, Inc. completed the body work.

Uncle Wendell and his children got to see the restored tractor on Christmas Day in 1995. I hauled it home specifically for him to see it, and he was pleased with the results. He also provided some help with a couple of questions. For example, he said this particular tractor never had the "Model H" decal on the seat support. Unfortunately, Uncle Wendell never got to see the tractor with the cultivators and planters on it again. He passed away at his home one morning in early 1998 after coming in from feeding his cows.



During the summer of 1998, I rebuilt the original hydraulic cylinder and mounted the cultivators on the tractor for show purposes and to help keep from losing all the parts. The cultivators got a good cleaning and fresh paint, then new sweeps. The row spacing is not as wide as the 42" or 44" rows Uncle Wendell used. I had to set mine for about 36" rows for two reasons: (1) to be narrow enough to fit on my trailer and (2) wide enough to run the drive chains for the planters from the sprockets on the rear tractor axles. It didn't hurt that that spacing also looks about right. I was fortunate to not have to tear down the hydraulic valve. In fact, it will hold the cultivators up all day without leaking down. I got a chance to show the results of this part of the project in the Monroe, GA Crepe Myrtle Festival (held in late August each year) with the North Georgia Two Cylinder Club.

What's left to be done? There are a few cosmetic fixes I want to do to improve the tractor's appearance, but it probably looks about as good now as it did when it left the factory. We never found the bill of sale, so the serial number is still a mystery, and I guess the rusty old plate will have to stay there forever. I still plan to clean, repaint and install the planters now that the cultivators are mounted. Putting the planters back on the tractor will free some floor space in my garage and keep everything bolted together so it won't get lost. And my tractor will be one of the very few shown with planters.

Unique things about this tractor:

- The H is the smallest John Deere with the horizontal 2-cylinder engine
- The clutch is mounted on camshaft rather than the crankshaft

Sources of parts, supplies and expertise used during restoration:

- Antique Gauges -- white faced gauges
- Travis Jorde -- laser cut vinyl decals
- Deere & Company -- engine parts, etc
- Wild's Machine Shop, Maryville, TN -- machine shop services

SPECIFICATIONS

CAPACITY:

1-16" plow bottom or a 14" bedder under normal conditions and 2-12" plow bottoms or a 2-bottom bedder under favorable conditions.

Maximum Belt Horsepower.....14.84
Maximum Drawbar Horsepower.....12.48
Maximum Pull.....1839 lbs. at 2.38 M.P.H.
(Nebraska Tractor Test No. 312)

SPEEDS:

Forward: 2-1/2,3-1/2 and 5-3/4 M.P.H. on 9-32 (regular) pneumatic tires.
Road speed 7-1/2 M.P.H. at 1800 R.P.M. by using foot control.
Reverse: 1-3/4 M.P.H.

ENGINE:

Engine Two-cylinder cast in block --valves in head.
Engine Speed 1400 R.P.M. (Load)
Bore and Stroke 3-9/16" x 5"
Displacement 99.7 cubic inches
Compression Ratio 4.75 to 1
Carburetor Natural-draft type.
Magneto High-tension with automatic impulse.
Spark Plugs 18 mm. Champion No. 8 Com. C. or Edison Z-19. Spark plug gap .030"
Lubrication Full force-feed pressure system; with Purolator oil filter element. Total oil capacity—
7 1/2 U.S. quarts.
Cooling System Thermo-siphon system with a water capacity of 5-1/2 U.S. gallons.
Air Cleaner Oil-wash type.
Fuel System Gravity-feed fuel system. Gasoline tank capacity--7/8 U.S. gal Fuel tank capacity--
7-1/2 U.S. gal.
Clutch Hand operated two 9-1/4-inch dry disks, locking in and out.
Belt Pulley Diameter 12-1/4" width 4-3/4"; 700 R.P.M.- Belt Speed 2245 F.P.M.

TRANSMISSION:

Speeds Three speeds forward and one in reverse. Added road speed up to 7-1/2 M.P.H.
Gears Selective type straight cut spur gears, forged, cut and heat treated.
Bearings Shafts operate on 2 Timken tapered, 2 Hyatt roller and 2 bronze bearings. Oil
capacity 3 U.S. gallons.

REAR AXLES:

2-1/8" in diameter. Mounted on 4 Timken-tapered roller bearings.

REAR WHEELS:

9-32 4-ply tires, mounted on pressed-steel wheels, recommended for average field conditions.

REAR WHEEL BRAKES:

Two automotive type internal expanding rear wheel brakes.

FRONT WHEELS:

Reversible for added clearance. 4:00 x 15", 4-ply rubber tires mounted on 4 Timken-tapered roller bearings. Pressed steel wheel.

DIMENSIONS:

On regular 9-32 pneumatic tires. Wheelbase 76", over-all height 73"; height to radiator cap 52-1/2"; over-all length 112-1/2"; width 79-1/4"; rear wheel tread adjustable from 44" to 84"; clearance 20-3/4"; turning radius 7' 5". Drawbar conforms with A.S.A.E. standards.

POWER TAKE OFF:

Shaft diameter 1-3/8"; R.P.M. 546; splined end is 25-1/4" above ground, 2-7/8" to left of center line and 14" ahead of hitch. Conforms with A.S.A.E. standards.

SHIPPING WEIGHT:

2141 lbs. on 9-32 4-ply pneumatic tires, rear pressed steel wheels, and 4:00 x 15" 4-ply front tires.