# The Model "A" Ford Tapered Muffler

 **composed by Ronnie Lawson**

I worked for a company Arvin Industries Inc. (was formerly Quintin G**. Noblitt** and Dr. Frank H. **Sparks NS**) for 20 years, that was a supplier for Ford Mufflers. While working there I was able to get some information on some the Model A parts that was produced by Noblitt and Sparks.

We did build the Model A muffler. When we were NS we built tire pumps, hub caps, brake levers, radiator outlet tubes, oil filler and breather tubes, roadster rumble seat grab handles, heaters, mirrors and jacks for the Model A. We had what was called running changes and the prints would not get changed or updated to. These running changes would get what was called a **deviation**. We could produce the product although it was **not to part print** for so many days of production. So part prints are not always up to date per production parts deviations. The deviations would not go into the level change box on part prints. Today Ford, Chrysler and General Motors use the same deviation. The deviations today has all three logos on the top header of the deviation form.

Between 1929 and 1933, new ideas in mufflers were being developed in a rented experimental garage in Indianapolis for a muffler. Edmund "Ed" Ludlow in 1929 designed the Company's first entire muffler- 5 inch in diameter and two feet long which was sold to Studebaker was the first customer for the round muffler, followed by Ford, Chrysler, Chevrolet.

**Harlan Foulke** come to Noblitt and Sparks in 1926. After a very brief indoctrination period, Harlan sallied forth to sell heaters in fourteen states west of the Mississippi river and all of Canada. Although he enjoyed selling and did well at it, he did not particularly like the almost constant travel involved.

Harlan had been studying the Detroit operation and learning about such things as steel, purchasing, pricing and inspection. In 1929 Harlan started going to Detroit every week by train.

Two meetings with Henry Ford stand out in Harlan's mind. The first time when Harlan was waiting in the big reception lobby in Dearborn to see someone. Henry came walking across the room, stopped, and said, "Is anyone taking care of you, young man? "They certainly are, Mr. Ford, and very well, too." Harlan replied that pleased the old gentleman and he always spoke and chatted when he saw Harlan after that.

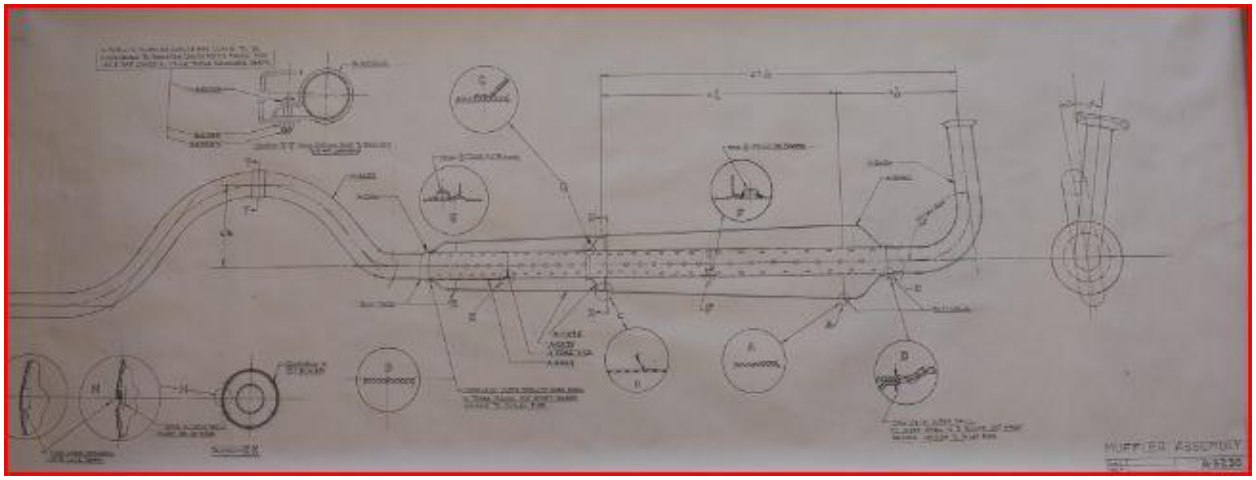
The second time was when Mr. Ford came into an engineering meeting at which a decision was to be made as to whether to use a new muffler designed by Noblitt and Sparks or continue with the round tapered one. Noblitt and Sparks wanted to sell the new designed one because it was better, and also because it would mean more money for the Company. Henry listened for a minute, turned to Harlan, and said, "which one is more economical-" but before he could launch into his explanation of the obvious advantages of the elliptical muffler, Mr. Ford said, "I think

so, too. We'll use the round tapered one for another year." Mr. Ford marched out of the room and Noblitt and Sparks made round tapered mufflers for **Ford Motor Company** for another year.

NS actually got its start in the automotive exhaust system business when the **Model T Fords** were being phased out. The Ford people were so busy working on the new **Model A Ford** that Harlan was able to convince them that it would be better to let Noblitt and Sparks run out the last original equipment **Model T mufflers** and also the replacement ones for the next several years. As things worked out, this led to the Company later being able to become a supplier for **Model A muffler** systems as well.

The original Ford Motor Company Model "A" tapered Muffler Assembly with the part number A-5230. The Muffler Assembly part print had no level changes on it. A change level is when a part print changes something to the Muffler Assembly and a date and level is added to the part print to tell when and what the change was. If there was a level change the part number would change to A-5230-A. I have an original part print that was drawn by the design department. The size of the Muffler Assembly print is 1/2 scale of full size.

When I worked for Arvin Industries we would draw out the full scale size of an exhaust system in what was called, plan view (top view looking down in car position) and we would lay out an exhaust system on top of the drawing. Today we use what is called CMM measurements (Coordinates Measurement Machine) to measure all of the dimension that is on the part print (computer technology).



The original Model "A" Muffler Assembly design consists of nine separate component parts welded together. The component parts would have their own part number and part print.

The component part print numbers and names are:
A-5250 Front Inlet Exhaust Pipe with flare
A-5255 Rear Outlet Tail Pipe

A-5240 Front Cap bell
A-5241 Rear Cap bell
A-5239 Muffler Shell
A-5242 Center Baffle and Support is used for tuning
A-5235 Baffle that was used in the **Front and Rear** for tuning
A-5234 Center Tube 30 inches long with holes in it is for tuning

The location, size and quantity of the holes in the baffles and center tube and the diameter of the Front Exhaust Pipe and Rear Tail Pipe is what makes the Model "A" muffler sound that we all like to hear. The size and location of the holes are warranted by the manufacture of the muffler to meet the sound requirements by Ford.

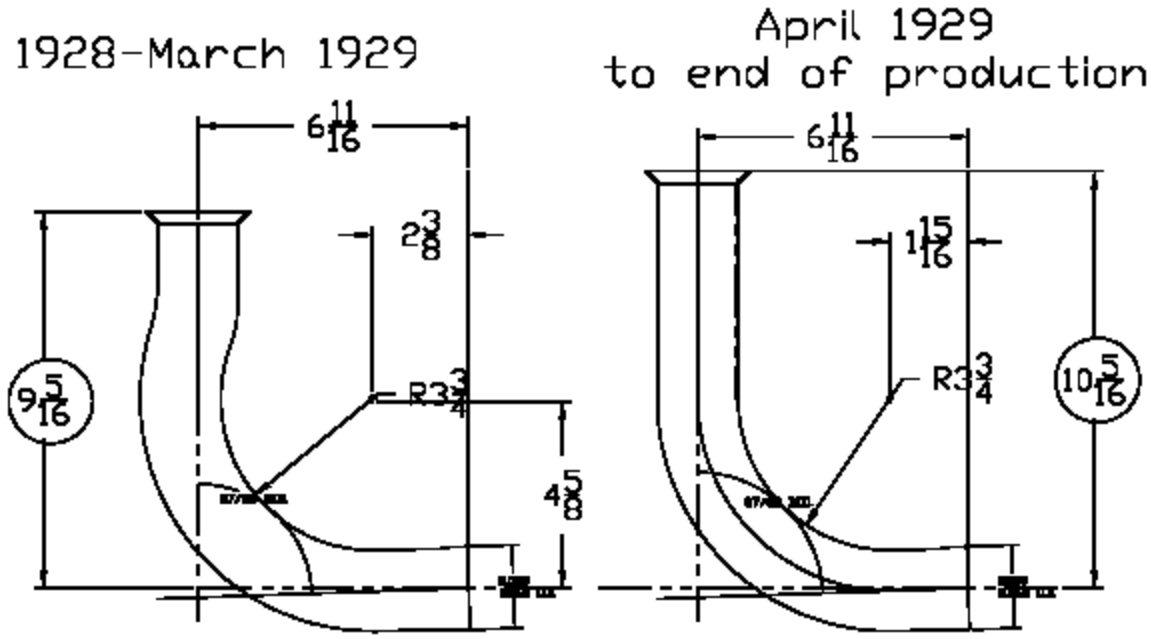
The nine separate parts are all welded together. The manufacture of the two end bells and three internal baffles was done by draw forming the metal. But due to complicated shape, the end bells, it required four dies for each end bell to make a part to print. The internal circular baffles each required three dies. The inner perforated tube and outer shell each require two forming dies for a total of 17 dies.

Perhaps the trickiest part to manufacture were the inlet and outlet pipes. The correct radii were critical for the fit and the original tubes were bent using the mandrel bending method which forms the tube, leaving smoothed outer contour, as opposed to the indentation left by conventional push punch and wing die techniques as used by modern manufactures and muffler shops. The mandrel bending the tube was pre-bent and then inserted into the cavity to hold the correct radius: seal ball were pulled through the tube to force it out to the correct round cross section. Using this method, fairly sharp bends were possible while maintaining a round cross section. Special tooling was made to achieve the flange.

Final assembly was a critical part of the manufacturing process; several steel sizing plugs and ring gauges were made to keep everything round and properly aligned while welding. The inlet and outlet pipes were assembled to the correct angles by using a precision machined welding fixture with eight hold down points.

The muffler assembly went on the 1928, 1929, 1930 and 1931 Model A Ford cars and trucks.

If Arvin still made mufflers and pipes the way it did 85 years ago, the exhaust system for a big, powerful car today would be perhaps 50 feet long.




1928 Inlet Pipe on left, April 1929 to end of production on right.
Note the 1928 is "one" inch shorter and has the forward curve of the pipe moved 7/16" forward to clear the motor mount.

ACKNOWLEDGMENTS: Arvin ...The First Sixty Years - History by Coke Coons