

# Ford Assembly Plant and Dealership Bills of Sale

## What Can They Tell Us About Model A Ford Production?

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Ever since the Ford Archives fire on August 9, 1970, which destroyed a lot of important historical documents concerning the Model A Ford and other models, the Model A hobbyist and researcher has had to rely on documents that are in collectors hands for part of the Ford story. Although the new Ford Archives still have quite a few Model A Ford documents to view and research, those that pertained to the specific assembly and service plants have all but vanished. If it was not for the survival of the 1928-1931 Indianapolis and 1930-1931 Chicago Service Letters and the 1928 Fargo Service Letters, we would be lost in trying to determine when specific changes were made.

However, some other documents that have survived all these years that can put a specific paper trail on any Model A Ford, pro-

viding one can be associated with a known original vehicle, are the Ford Assembly Plant and Ford Dealership Bill of Sales. These documents can tell us lots about the Model A itself as far as the production aspect goes.

During the Model A years, 1928-1931, there were 32 assembly and three wholesale service plants throughout the United States. The major production and assembly plant was the Rouge Plant (engine assemblies, fenders, body panels, paper products, electrical wire, steering wheels, glass production and other items) in Dearborn, Michigan. Other Ford "parts manufacturing" plants were located at Kearny, New Jersey (also an assembly plant); Hamilton, Ohio (steel wheel production); Flat Rock, Michigan; Green Island, New York (radiator production); St. Paul, Minnesota (glass production);

Glassmere, Pennsylvania (glass production); Iron Mountain (iron mine and lumber production); Highland Park (Fords giant machine shop and the Henry Ford Trade School, also paints, ammeters, crankshafts and other forgings, such as the engine, axle, etc., were manufactured here). Phoenix, Northville, Waterford, Plymouth and Nankin Mills, Michigan were also other minor manufacturing plants. Dearborn, Michigan, was the site of Ford's experimental laboratory, as well as the Ford Airport and the airplane manufacturing plant. Other items also came from outside sources such as the carburetor; electrical items as horns, distributors, spark plugs, batteries, generators; shocks; steering gears; wheels; tires; etc.

Once the parts were finished, they were then transferred to the Rouge Plant where they were arranged for assembly and/or

for shipment to the other assembly plants throughout the United States, Canada and other foreign countries.

As the parts arrived at the Rouge Plant, they were taken to their specific assembly stations and were sent down a series of conveyors. The conveyor system was developed by the Ford Motor Company which saved the company time, money and energy and enabled the men to stand still at their work. The conveyor system was carefully timed and synchronized to ensure an even output and govern the rate of production. Consecutive operations were placed adjacent to one another. The machines being placed in sequence made it possible for each succeeding operation to be passed on to the next with a minimum of handling and delay. All items were inspected for workmanship and quality and were tested at every stage of its manufacture.

All the body parts were formed at the Pressed Steel Building with the wood parts coming from the Iron Mountain plant. While the Rouge Plant also assembled complete bodies for assembly, which were to be distributed in the nearby territory, other body parts were shipped in three sections. The rear, the two sides and the front comprised the "knocked-down," unpainted body. Ford's major principle of manufacturing was two fold. Manufacture near the source of supply and assemble near the point of distribution, which was one of the main reasons for shipping "knocked-down" bodies. By shipping "knocked-down," it was possible to get 77 Tudor Sedan bodies or 130 Phaeton bodies in one freight car. A major savings!

As other parts were completed for assembly at the Rouge Plant and/or for shipment to other assembly plants, they were then sent to their pre-final assembly stations. Here they were stacked and waited for the freight cars to be loaded with the parts to be shipped throughout the United States.

Of all the known items to be manufactured at the Rouge Plant, the completed engine is the only known component that was officially numbered and recorded on the day of the stamping. However, the mid-1928 to late-1929 Cowl and Tank Assembly, A-9002, also carries a stamping on the lower left hand corner. This stamping appears both upsidedown or rightside-

4-30-34

3295374	—	3304703	9310
3304704	—	3314015	9312
3314016		3323330	9315
3323331		3332647	9317
3332648		3341962	9305
<del>3341962</del>		MAY 7 1930	
3341963		3361254	9302
3351255		3360576	9322
3360577		MAY 9 - 1930	
3379882		3369881	9305
3379122		MAY 12	
3388387		3379121	9240
3397652		MAY 13 1930	
3406922		3388386	9265
		3397651	9265
		MAY 15 1930	
		3406921	9270
		MAY 16 1930	
		3416184	9265
		3416184	

Individual page from the Daily Engine Log at the Rouge Plant. The first column lists the first engine number stamped, followed by the last engine number, and the total for the day. This log confirms that engine A3308654 was produced on May 1, 1930. Copies of Daily Engine Log are available from the Benson Ford Research Center.

up and is thought that this date represents the "date of manufacture" or assembly of the body. However in another independent study there appears to be three different possibilities in viewing original assembled cars and their given original engine numbers and firewall dates: 1) The date on the tank represents "before" the engine stamping date; 2) The date on the tank represents the "same day" as the engine stamping date; 3) The date on the tank represents "after" the engine stamping date. The question is, was this stamp put on the tank at the time of manufacture of the tank itself or was it put on the tank just before the assembly of the body?

The engines were all completed assemblies before shipment to their final assembly plants. It took about 10 hours for blocks to be cast into cylinder blocks to the finished, assembled and inspected engine. After the engine was assembled

and tested, or after the "break-in" process, a serial number was stamped on each engine. These numbers were then recorded on a daily basis and transferred to the "Daily Engine Production Log" as seen above. These numbers were as such: a star followed by an A (for cars and light vehicles) or AA (for trucks) followed by the numbers ranging from 1 through 4,849,340 (1927-1931 production only) followed by another star. Such as ☆A192831☆ or ☆AA192832☆. In late January or early February of 1931 the numbers 1, 6 and 9 were changed according to the February, 1931 Ford Service Bulletin. This was "to lessen any possibility of outside individuals attempting to change engine numbers." These engine serial numbers were also stamped on the top, left rail of the frame, opposite the clutch pedal at the time of engine drop into the frame. Once the engine was inspected, it was moved to the pre-final assembly sta-

**ED. G. WHITE**  
 Licensed Ford Dealer  
 LOYALTON, CALIF.

San Jack Valley 11/16/6-24-31  
 1448 Shermanville Phone No.  
 Lawrence Ave. and 51st St.  
 30241 and 30241 Ford #1

Std. coupe (Conch)	490
Freight	126
Bumpers	15-
Trunk & Cover	12 60
10 gas	2 40
5 oil	1.50
Finance	3-
Leg. Trade in	650 40
Personal or Home	120-
Tax Cash	45 40
	430 -

2000 #1326  
 Home #1183  
 Phone #1232

Example of hand-written Dealer Bill of Sale.

tion or the engine storage room for shipment to an assembly plant. If the engine did not meet Ford's standards or if there was a problem with it, the engine was then put aside and repaired then sent on its way. If it could not be fixed, it was destroyed.

Once the orders were placed from the various assembly plants (or maybe Ford designated what went where) and the freight cars were loaded with parts, the train was on its way. As stated above, the Rouge Plant was the major manufacturing plant for all the Ford parts with the exception of some outside plants to take care of some other parts. The Rouge Plant was also an assembly plant that assembled both cars and trucks. But there were also other assembly plants located at strategic trade centers throughout the United States.

These plants were indicated by their known, equated assembly plant letter codes: (A or AA) Atlanta, Georgia; (BO) Buffalo, New York; (CE) Charlotte, North Carolina; (CR) Chester, Pennsylvania; (CHI) Chicago, Illinois; (CI) Cincinnati, Ohio; (CL or CLE) Cleveland, Ohio; (G) Columbus, Ohio; (DS) Dallas, Texas; (DR) Denver, Colorado; (DM) Des Moines, Iowa; (F) Dearborn (The Rouge), Michigan (FD noted on an early 1928 Tudor); (E) Edgewater, New Jersey; (H)

Houston, Texas; (I) Indianapolis, Indiana; (JE) Jacksonville, Florida; (KC?) Kansas City, Missouri; (KY) Kearny, New Jersey; (LA) Long Beach, California; (LA) Los Angeles, California (the month and year appear as part of the number); (LE) Louisville, Kentucky (the month and year appear as part of the number); (MEM) Memphis, Tennessee (sometimes has an AX preceding the number); (?) Milwaukee, Wisconsin; (NO) New Orleans, Louisiana (the number "2" precedes the NO); (NK) Norfolk, Virginia; (OC) Oklahoma City, Oklahoma; (?) Omaha, Nebraska (possibly used AU); (?) Pittsburgh, Pennsylvania; (PO) Portland, Oregon; (R) Richmond, California; (SFA or SFAA) San Francisco, California; (AS) Seattle, Washington; (S, SAX or SAXC) Somerville, Massachusetts; (STL) St. Louis, Missouri (has AX preceding the STL); and (TC) Twin City, St. Paul, Minnesota. The three wholesale service plants were in Washington, D. C., Fargo, North Dakota, and Salt Lake City, Utah. These three plants did not assemble any cars or trucks. However they may have been a drop off locations of assembled cars and trucks which were to be transported to their closest dealerships.

Following the assembly plant letter codes were numbers. These numbers were stamped at the time of assembly of the body at their respective assembly plant. All letters and numbers were stamped into the front cross member of the body itself, a few into the body side rails on the floor board level, or into the wooden cross member on certain body styles as Cabriolets and Fordors. Such as SFA192831. They can be located anywhere on the body's floor cross sill front assembly and can be oriented to read from driver to passenger side, from passenger to driver side, or from back to front. However in some cases they are not there at all! The numbers represented the number of bodies that had been assembled at each assembly plant at a certain point in time. Dave Sturges, of Glenwood, Maryland, has been researching this aspect of the body assembly plant codes and numbers and has been trying to identify the Model A Ford Assembly Plant Letter Codes used. He needs your help. For more information on this, see *The Restorer* – September/October, 1997 and May/June, 2001. He may be contacted at: Dave Sturges, 14505 MacClintock Drive,

Glenwood, MD 21738-9626; Phone: (410) 442-2724; Email: dasturge@comcast.net. For study: see www.mafca.com.

According to Ed Francis and George DeAngelis, in their article of the March/April, 1977 issue of *Model A News* titled "Establishing Model A Production Dates," the assembly plants were divided into three categories:

1. "Major": which produced bodies for its own line, but also produced bodies for other assembly plants. The following is a known "major" assembly plant: Rouge Plant.
2. "Standard": which assembled bodies from partly assembled kits supplied by the "major" assembly plants or vendor body companies such as Budd, Murray and Briggs. They did not have stamping machinery. The following is a known "standard" assembly plant: Louisville.
3. "Minor": which had limited facilities and they received completely built-up bodies from the "major" assembly plants or from vendor body companies. The following are known "minor" assembly plants: Cleveland, Jacksonville and Portland.

Trying to figure out just how long it took a particular freight train to go from the Rouge Plant to the various assembly plants was a feat in itself.

Mr. Hilding Larson, Union Pacific historian, related that it took about 10 days to go from the Rouge Plant to Ford's assembly plant in Seattle, Washington, closer ones were not as long. Neil Besouglloff, Editor of *Classic Toy Trains* and fellow Model A'er, indicated several factors that affected train times in the '20's and '30's. The first was geography: (the distance from the Rouge Plant to the various assembly plants); the second factor was the way the railroads were laid out: (there were about two dozen major railroad lines during this time period thus using the same line to go from one place to another would be quicker than changing from one line to another); the third factor was the amount of transfers the boxcar or boxcars were put through on their destination: (just how many rail lines the freight cars had to go through to reach its final destination, lengthened the time of arrival to the assembly plant); and a possible fourth factor may have been Ford himself (did Ford have any influence with the railroads to

get his rail cars to their final destination quicker than other companies?).

There were nine assembly plants within a 379 mile radius of the Rouge Plant:

1. Cleveland, Ohio (CL/CLE) 174 miles
2. Columbus, Ohio (G) 206 miles
3. Cincinnati, Ohio (CI) 272 miles
4. Chicago, Illinois (CHI) 286 miles
5. Pittsburgh, Pennsylvania (?) 291 miles
6. Indianapolis, Indiana (I) 298 miles
7. Buffalo, New York (BO) 365 miles
8. Louisville, Kentucky (LE) 375 miles
9. Milwaukee, Wisconsin (?) 379 miles

There were 13 assembly plants within a 540 to 793 mile radius of the Rouge Plant:

1. Chester, Pennsylvania (CR) 540 miles
2. Edgewater, New Jersey (E) 540 miles
3. Kearney, New Jersey (KY) 540 miles
4. St. Louis, Missouri (STL) 547 miles
5. Des Moines, Iowa (DM) 597 miles
6. Charlotte, North Carolina (CE) 670 miles
7. Twin City, St. Paul, Minn. (TC) 696 miles
8. Norfolk, Virginia (NK) 721 miles
9. Somerville, Massachusetts (S) 730 miles
10. Atlanta, Georgia (A/AA) 732 miles
11. Omaha, Nebraska (?) 734 miles
12. Memphis, Tennessee (MEM) 757 miles
13. Kansas City, Missouri (KC?) 793 miles

There were three assembly plants within a 1,041 to 1,077 mile radius of the Rouge Plant:

1. Oklahoma City, Oklahoma (OC) 1,041 miles
2. Jacksonville, Florida (JE) 1,048 miles
3. New Orleans, Louisiana (NO) 1,077 miles

There were three assembly plants within a 1,211 to 1,324 mile radius of the Rouge Plant:

1. Dallas, Texas (DS) 1,211 miles
2. Denver, Colorado (DR) 1,274 miles
3. Houston, Texas (H) 1,324 miles

There were five assembly plants within a 2,297 to 2,411 mile radius of the Rouge Plant:

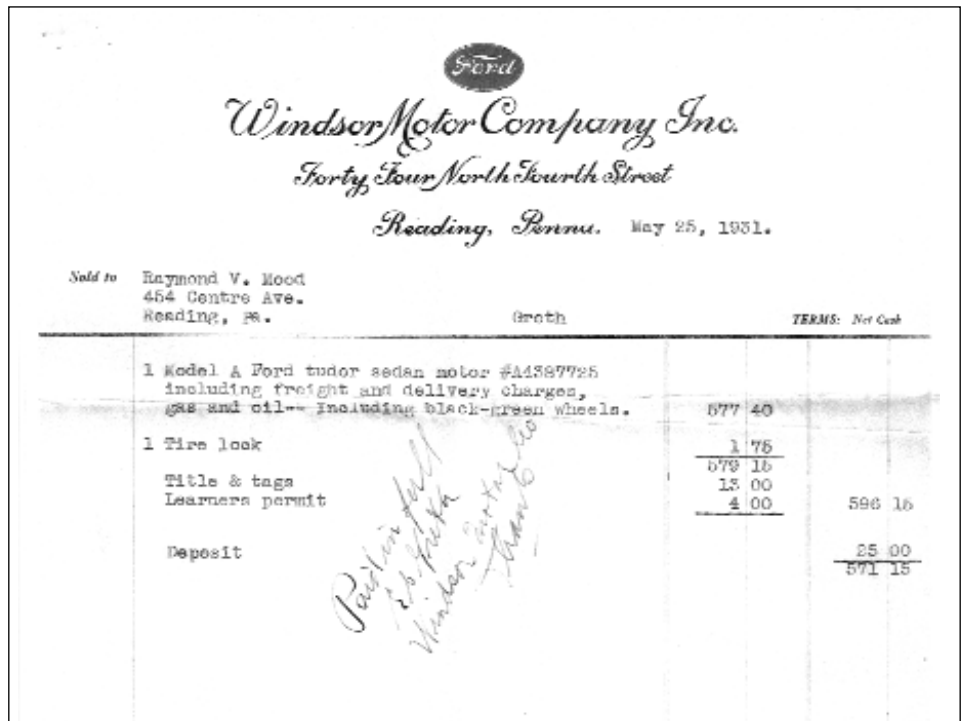
1. Los Angeles/Long Beach, Cal. (LA) 2,297 miles
2. Seattle, Washington (AS) 2,359 miles
3. Portland, Oregon (PO) 2,390 miles
4. Richmond, California (R) 2,401 miles
5. San Francisco, Ca. (SFA/SFAA) 2,411 miles

There were also three service centers:

1. Washington, D. C.
2. Fargo, North Dakota
3. Salt Lake City, Utah

These service centers did not assemble any vehicles that is known. More information is needed here.

Once the freight train arrived at the designated assembly plant (or as in the case of the assembly plants on the West Coast which the parts may have been brought in by ocean steamer), they were unloaded and the parts were put in their right spot in the assembly process or they remained in



This typed Dealer Bill of Sale, while more professional looking, does not list the key numbers.

the boxcars until needed. The assembly called for chassis assembly, body assembly, and all the paint, trim and upholstery work. Some of the plants manufactured cushions, springs and closed bodies. The branches all operated under pretty much the same system, using the same standard of tools for building cars and trucks.

Once the car or truck left the assembly line, they were shipped out to one of the various Ford dealerships throughout the assembly plant's territory for sale to the public. Some dealers sent drivers to the assembly plants to drive cars back to their dealership for sale, these were referred to as "drive outs;" some were shipped by railway cars; some by transport trucks, such as the Model AA Ford Taylor Truck-a-Ways; and some were transported by boat. In some cases, the public were permitted to drive their car off the assembly line.

Just how long did it take for parts to go from the Rouge Plant to the various assembly plants and out the door to the public? What engines went where? How long did they sit around before being installed into a chassis? Those were questions I wanted to answer, but in essence can only speculate because the shipping records of the various parts are not to be found, even at the archives. This is why we have the "Early" (January, February, March and April); "Mid" (May, June, July and August); and "Late" (September, October, November and December) Definition of Dates in the MAFCA/MARC Judging Standards along with the fact that "in view of the lag time between drawing preparation and actual incorporation into production, and Ford's policy of often using the entire stock of superseded parts, whenever a month is stated for the commencement of a configuration, the earlier configuration will also be acceptable for two months thereafter."

YEAR	DEARBORN	BUFFALO 365 miles	ST. LOUIS 547 miles	SOMERVILLE 730 miles	SAN FRAN 2,411 miles
1928	—	10-16	—	7-15	—
1929	1	6-7	—	6-15	12-22
1930	1-10	3-10	6-21	6-15	34
1931	—	8	11-15	45-65	37-43

This chart indicates the number of days it took to assemble a car or truck from engine stamping to the time it left the assembly plant according to the assembly plant Bill of Sales.

But what kind of paperwork did Ford prepare before shipping that car or truck from the assembly plant to a dealer? These documents are represented by the Ford Motor Company's Buffalo Assembly Plant in New York.

Factory Bills of Sale, as seen below, can provide us with some of the historical data that may have been lost in the Archives fire. Besides the cost of things, this Factory Bill of Sale, Invoice number F87575, relates that the car is a Town Sedan with engine number A3308654 (which was stamped at the Rouge Plant on May 1, 1930). On May 6, 1930, the completed car was sold to Brown and McCooey, Inc., in Randolph, New York. It took just five days from the time the engine was stamped and related parts left the Rouge factory to go the 365 miles to the Buffalo, New York assembly plant where it was assembled and out the door. What else does the Bill of Sale tell us? It tells us of the ignition key number that was associated with the car, A891 and a door key, A1139. However, most assembly plant Bills of Sale that were viewed did not have the key codes on them. Those were mainly recorded on the dealership Bill of Sales.

The only difference between the factory and dealership Bills of Sale were the appearance of the slips themselves. Some dealership Bills of Sale were professionally done, while others were simply handwritten receipts. Both included the key codes numbers as recommended by Ford. According to the May 16, 1928 notification from the Fargo, North Dakota, service branch to the dealers, it related that "In order to eliminate the possibility of inconvenience to your A and AA owners through loss of door locks and ignition switch keys, we recommend that you place the key numbers required for the car or truck on the bill of sale." Apparently this was not being done by some Ford dealers and in the February 20, 1929, Indianapolis Service Letter, Ford issued another statement requesting that this be done in order to let customers know just what their key codes were in case they found it necessary to replace them.

Unlike the Factory Bills of Sale, trying to establish an assembly time of a vehicle in viewing Dealership Bills of Sale, is kind of hard to do taking into consideration the

amount of time the vehicle sat on the dealerships lots or maybe it was used as a demonstrator vehicle for a series of months.

So just how long did it take to assemble that Model A/AA Ford? One has to look at the data very objectively. Was that engine sent to the assembly line immediately upon its arrival to the assembly plant or was it stuck in the corner only to be retrieved one to eight weeks later or more before assembly? Did the completed vehicle get sent immediately to a dealer after assembly or did it sit around the assembly plant for one to eight weeks or more waiting to get picked up by a dealer? Hard to tell.

The chart on page 11 gives us some idea of just how many days it took to assemble a Model A or AA Ford at the various assembly plants from the time the engine was stamped at the Rouge Factory in Dearborn, Michigan, thus being received at the assembly plants themselves and the completed vehicle out the door. The data came from a number of original Ford Factory (Assembly Plant) Bills of Sale to dealerships.

The farther the assembly plant was from the Rouge Factory in Dearborn, the longer the time it was in getting the vehicles off the assembly lines and into the dealers hands.

I would like to thank Jerry Bengel, Neil Besougloff, Hilding Larson, Jim Spawn, Dave Sturges and Lynn White for their thoughts and contributions to this article. I would also like to thank those of you who have contributed the many Ford Factory and Dealership Bills of Sale that were used to arrive at the data that was used in this article including Ray Beardslee, Rich Bell, Arlyn Bieber, Clem Clement, Dean Drenzek, Martin Hanshew, Clif Moebius, Jerry Parr, Tom Pearson, Todd Smith, Lou Tull, Tom Wesenberg, Mark Williamson and Peter Winnewisser.

This is an ongoing study. I hope that those of you who have original Ford Factory and Dealership Bills of Sale will contribute your data to this study, which will be put into a data base for future generations to come. Please contact me at [steve@plucks329s.org](mailto:steve@plucks329s.org) and visit my web site at [www.plucks329s.org](http://www.plucks329s.org) for further information.

**Ford Motor Company**  
 BUFFALO, N. Y.  
 INVOICE NO. F 87575  
 INVOICE DATE 5/6/30  
 VENDOR'S NOS.  
 CUSTOMER REF. NO. 5/6/30 W  
 CONT.  
 SOLD TO Brown & McCooey Inc. Randolph NY  
 SHIPPED TO AND DESTINATION  
 FROM F. O. B. 176  
 FORM 488 DATE 4-30-28  
 FORM 4218-EMPLOYEE'S USE ONLY  
 QUANTITY: 1  
 MATERIAL DESCRIPTION: Town Sedan 3308654 Blk, BGM, Frt & Del, Tire Cover  
 UNIT PRICE: 552.75, 14.98, 75.20, 1.20  
 AMOUNT: 604.13  
 PAID stamp and handwritten notes: Ig - 891, Door Key 1139