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Proctor Mack B-813SX Now at the Mack Museum

Spring 2012 Newsletter

The Proctor 1963 Mack B-813SX is now at the Mack Museum in Allentown, PA. This truck has been very popular wherever it makes an appearance but it is most appreciated by the many New Jersey residents who grew up near Long Branch, NJ. If you plan to be in the Allentown area, particularly for a local antique truck show, we strongly recommend a visit to the Mack Museum.

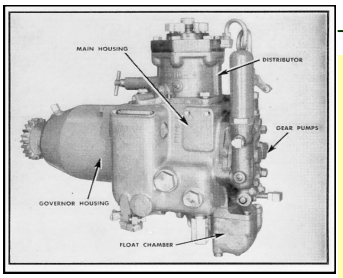
The truck was cleaned and detailed prior to being transported to the museum by Pfahl's Antique Truck Restorations. The primary purpose was to put this completely restored Mack truck with its extensive history on display so that many visitors could enjoy viewing the truck. The second reason involved a movie shoot at the museum. The National Geographic organization have created a program that will air between April and August, 2012 called "America's Lost Treasures" and is very similar to the "Antiques Road Show" that appears on PBS. Filming took place all day Tuesday, January 31 and it is not certain but we hope that the segment will appear with the Proctor Mack. Exact show times will be listed here when available.

- *New Addition to the Mack Museum*
- *Proctor Mack to Appear on a National Geographic program between April and August, 2012*
- *Proctor Mack a hit at the Mack Museum*

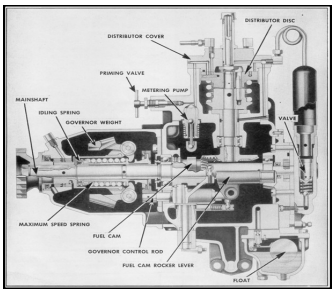
Cummins Fuel Injection Systems, 1932 to 1960

Diesel engines emerged as a competitive power plant technology in the 1930's due in large part to their superior fuel economy (under defined operating conditions) over gasoline engines. Between 1946 and 1958, the number of trucks registered nationally nearly doubled from fewer than 6 million to more than 11 million units due, in part, to the very ambitious highway construction program initiated during the Eisenhower era. Many of these trucks were equipped with naturally aspirated diesel engines and many of these engines were sold by the Cummins Engine Company. From the earliest days in 1932 when Cummins introduced the H model diesel engine, fuel injection had been the key technological challenge. Compared with gasoline carburetors, diesel injection systems were large, heavy and considerably more expensive. They were also the chief factor limiting

Inside this issue:



Single Disk Fuel Pump Sub-Assembly Units shown above and SD Pump Cross Section below.



"THESE DISK-BASED SYSTEMS SHARED A FUNDAMENTAL MECHANICAL LIMITATION IN THAT NEITHER COULD OPERATE AT VERY HIGH SPEEDS UNDER HIGH PRESSURE (200 PSI WAS MAX FOR THE DD PUMP)."

engine performance.

In general, a diesel fuel injection system has the following requirements:

*A fuel pump to draw fuel from the fuel tank and deliver it to the individual injectors for each cylinder.
*A means of controlling the pressure of the fuel being delivered by the fuel pump to the injectors so the individual cylinders will receive the right amount of fuel for the engine power required.
*Fuel passages of the proper size and type so that the fuel will be distributed to all injectors and cylinders with equal pressure under all speed and load conditions.
*Injectors to receive either low or high pressure fuel from the fuel pump and deliver it into the individual combustion chambers at the right time, in equal quantity and in the proper condition to ignite and burn efficiently.

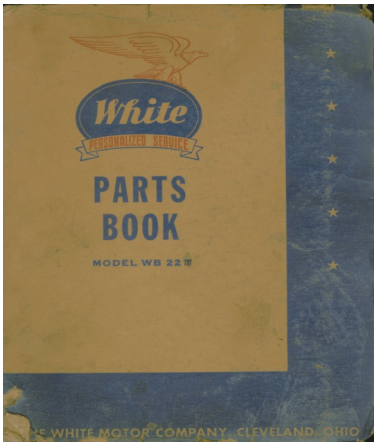
Truck manufacturers of diesel engines typically have used four basic injection systems as follows: Distributor Type, Multiple Plunger Type, Common Rail Type and Unit Injector Type. The main focus of this article will be the Single Disk (SD), Double Disk (DD) and Pressure-Time or PT injection systems developed and manufactured by the Cummins Engine Company. The early injection systems used a metering system that resembled the distributor-spark plug arrangement of gasoline engines. Interestingly, they also used float bowls, floats and check valves which would also commonly be found on the carburetor of gasoline engines.

The Single Disk Fuel Injection System

The Single Disk (SD) injection pump has been used on Cummins high speed diesel engines since they were first commercially introduced in 1932. The pump was mounted on the camshaft side of the engine and consisted of five distinct units (see Fig above): governor, metering pump, distributor, pressure and suction pumps and the float chamber. It was driven either directly or through an auxiliary drive from the camshaft gear. The fuel pump main shaft on the Cummins H and NH engines was designed to turn at engine speed.

Each of the fuel pump units is driven by the main shaft which extends through the governor housing and into the main housing (see Fig. above). The main shaft is driven by a drive gear that meshes with the engine camshaft gear. The governor is mounted on the main shaft while the distributor is driven by a bevel gear that meshes with the main shaft and turns at half engine speed.

To Be Continued....



New Parts and Operator's Manuals

Some recent Parts Books and Operation/Maintenance Manuals are available as follows:

White WC-2264 Parts, Mack B-61 Parts, Mack DM-600 Series Parts, Michigan 175A Tractor Shovel Parts, Hendrickson Crane Carrier Parts and Service, Cummins H-NH Operation and Maintenance, Cummins Shop Manual for C and J Series Diesels, Lorain MC-254 Parts Catalog, Lorain TL-20 Operation and Maintenance and Grove Hydraulic Crane Model RT-62S Operation and Maintenance. Some of these manuals can be up to 60-70 years old and have required some restoration. All are professionally restored and reproduced. ***Need a manual? Call us or send email to info@allvintagetrucks.com.*** Check the All Vintage web site for a complete list and description.

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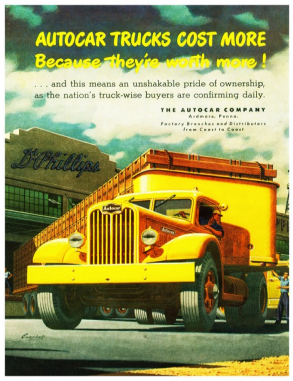

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See us at this year's ATCA Antique Truck Show in Macungie, PA June 15-17

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Send us a picture of your truck in either jpg or tiff format and we will post the photo in our photo gallery. Some examples are posted here.