

81-02-52-L

Eaton Corporation  
Transmission Division  
North American Headquarters  
P.O. Box 4013  
Kalamazoo, Michigan 49003  
Telephone (616) 342-3000  
Cable "FULCO"

n-96-01  
II-A-1086

May 29, 1981

Mr. Kenneth E. Feith  
Standards and Regulations Division  
U.S. Environmental Protection Agency  
Washington, D.C. 20460

Dear Mr. Feith:

**EATON**

We are well aware of the truck manufacturers' requests regarding the 1982 noise regulation. Several of them have requested information from us similar to your query.

The following answers are in the order of your questions:

- 1) The recent redesign effort was started in 1978 and conducted to reduce the noise level of the transmissions. Several different avenues were explored prior to 1978 to select the correct and the most cost effective method for the program. Fuel economy was not effected, since the gears were already highly efficient.
- 2) Because of this, the total amount of redesign cost may be attributed to the noise reduction effort.
- 3) The use of the noise isolation cover or shield is determined by the truck manufacturer. Even though the noise level of the new transmissions was significantly reduced, noise shields may be needed in certain truck installations.
- 4) The redesigned new transmission models enter into production during this year. Therefore, no production average noise data is available at this time. Laboratory tests have indicated different noise reduction levels for different models. For example, the popular RTO-12502A model was replaced by the RTO-14502A. In '8th gears', within 1500 and 2000 RPM, the peak to peak noise reduction in the anechoic room is  $\approx 8$  dBA. This value, however, is not necessarily representative to all models or to all gears.

-SARD ANK-490

4 JUN 21 16: 50

Mr. Kenneth E. Feith  
May 28, 1981  
Page Two

- EATON**
- 5) The most important change to achieve the noise reduction was the development of the new, high contact ratio gears. This required different forgings, cutting tools and gear cutting methods. The new methods resulted in longer gear processing time, thus decreasing productivity. In addition, the timing of the countershafts and other smaller modifications were also needed.
  - 6) In our opinion, no change in fuel economy will result from the redesign effort. The new model transmissions practically offer the same gear steps and ratios as the old models. Therefore, it is not expected that the truck's performance will be significantly altered.

It is our feeling that this four year, highly intensive program produced good results; helping the truck industry to reduce the noise emission of its products. It is too bad, however, that this concentrated, high priority work has prevented us from spending our efforts in developing better and more economical transmissions for the industry.

Sincerely,

*Derek Dawson*

Derek Dawson  
General Manager

DDg1