

MAILGRAM

Omaha, September 11, 1947

411-443-01

Mr. P. J. Lynch:

A-72, performance locomotive 4007:

Road tests of locomotive 4007 equipped with master mechanics front end, single smoke stack with secondary extension and 6 port multiple jet exhaust nozzle having 51.7 sq. in. open area, developed the following when compared with performance of locomotive 4014 equipped with two smoke stacks, multiple jet nozzle having area of 57.4 sq. in., and labyrinth front end:

<u>Loco. No.</u>	<u>Avg. MGTM</u>	<u>Coal fired Pounds</u>	<u>Lbs. coal per MGTM</u>	<u>Lbs. water</u>	<u>Back Pressure</u>	<u>Speed</u>
<u>Ogden to Green River - Eastward</u>						
4007	759.79	121,247	159.58	486,267	14.9	23.9
4014	620.91	87,382	140.73	401,865	10.1	27.2
<u>Green River to Ogden - Westward</u>						
4007	440.74	55,200	125.24	240,146	13.6	35.5
4014	502.53	52,263	104.00	255,604	10.3	32.1
<u>Round Trip - Ogden to Green River and Return</u>						
4007	1200.53	176,447	146.97	726,413	14.3	29.7
4014	1123.44	139,645	124.30	657,469	10.2	29.7

Locomotive burned a good fire and maximum boiler pressure could be maintained; however, at the higher speeds with back pressure above 16 lbs., full boiler pressure could not be maintained without forcing the fire. On heavy grades it was necessary to work approximately 20 lb. back pressure to maintain maximum speed and at higher speeds the best performance was obtained at approximately 16 lb. back pressure.

Locomotive 4007 was inspected by Assistant General Boiler Inspector August 2 after approximately 20,000 miles of service and advised front end flues and combustion chamber clean with cinder cutting not as excessive at this mileage as other 4000 class locomotives. Cinder cutting was more uniform over entire flue sheet instead of at each side on small flues of other 4000 class locomotives at this mileage.