



5400 H.P. DIESEL FREIGHT LOCOMOTIVE . . DESIGNED AND BUILT BY ELECTRO-MOTIVE DIVISION . . GENERAL MOTORS CORPORATION . . LA GRANGE, ILLINOIS, U. S. A.

# 5400 H.P. DIESEL FREIGHT LOCOMOTIVE

*Designed and Built For*

## GREAT NORTHERN RAILWAY COMPANY

BY ELECTRO-MOTIVE DIVISION • GENERAL MOTORS CORPORATION • LA GRANGE, ILLINOIS

This Diesel Freight Locomotive consists of two cab sections and two booster sections arranged for double end control from either cab, each being equipped with one General Motors, sixteen cylinder, V-type, 2 cycle Diesel engine having a bore of 8½", stroke 10" with unit injection system, rated at 1350 H.P. at 800 R.P.M., and developing a total of 5400 H.P. Each engine is direct connected to a D.C. generator, the current of which is distributed to the traction motors mounted on the trucks which in turn are geared to the axles. There are a total of eight 4-wheel trucks under the four sections comprising this locomotive, each being equipped with two traction motors or a total of sixteen

motors geared for a maximum speed of 65 M.P.H. All four engines are arranged for multiple control from either of the operator's cabs.

This locomotive is equipped with an infinitely variable speed *Electric Brake* which utilizes the traction motors for braking action, dissipating the electric current so generated through resistance grids located in the roof of the locomotive. This *Electric Brake* will develop a maximum braking effort of 98,000 lbs. at 17 M.P.H. and is capable of holding a large tonnage train on long mountainous grades without application of the ordinary air brakes.

### DIMENSIONS

|   |                                     |
|---|-------------------------------------|
| Overall length over couplers.....                     | 193'-0"                             |
| Maximum width over grab irons.....                    | 10'-6 <sup>7</sup> / <sub>8</sub> " |
| Width over body posts.....                            | 9'-10"                              |
| Height over all, above rails.....                     | 15'-0"                              |
| Wheel diameter.....                                   | 40"                                 |
| Rigid wheel base of trucks.....                       | 9'-0"                               |
| Roller bearing journals.....                          | 6 <sup>1</sup> / <sub>2</sub> "x12" |
| Truck swing designed for 21° curve or 274-foot radius |                                     |
| Distance between truck centers on cab section....     | 27'-3"                              |
| Distance between truck centers on booster section     | 26'-6"                              |

### SPECIFICATIONS

#### SUPPLIES

|   |            |
|---|------------|
| Fuel oil.....                                   | 4800 gals. |
| Sand.....                                       | 76 cu. ft. |
| Lubricating oil (145 gals. per engine).....     | 580 gals.  |
| Engine cooling water (225 gals. per engine).... | 900 gals.  |

#### WEIGHTS

|   |              |
|---|--------------|
| Total weight fully loaded.....  | 925,300 lbs. |
| Weight of locomotive with one-half of variable supplies.....          | 901,500 lbs. |
| Maximum tractive effort at rim of driving wheels at 25% adhesion..... | 225,400 lbs. |

