

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-27-77-1

Relating to Certification of New Heavy-Duty Engines and Vehicles

MACK TRUCKS, INC.

Pursuant to the authority vested in the Air Resources Board at Sections 43100, 43101, and 43102 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned at Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following engine and emission control system produced by the manufacturer are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

Model Year: 2000

Fuel Type: Compressed Natural Gas (CNG) or Liquefied Natural Gas (LNG)

| <u>Engine Family</u> | <u>Displacement</u> | | <u>Exhaust Emission Control Systems and Special Features</u> |
|----------------------|---------------------|---------------------|---|
| | <u>Liters</u> | <u>Cubic Inches</u> | |
| YMKXH11.9G55 | 11.9 | 787 | Turbocharger Charge Air Cooler Electronic Control Module Oxygen Sensor Throttle Body Fuel Injection |

Engine models and codes are listed on attachments.

BE IT ORDERED AND RESOLVED: That the following are the certification exhaust emission standards (Title 13, California Code of Regulations, Section 1956.8) and certification exhaust emission values for this engine family in grams per brake horsepower-hour under the Federal Test Procedure ("FTP"):

| | <u>Total Hydrocarbons</u> | <u>Carbon Monoxide</u> | <u>Nitrogen Oxides</u> | <u>Particulate Matter</u> |
|---------------|---------------------------|------------------------|------------------------|---------------------------|
| Standard | 1.3 | 15.5 | 2.5 | 0.10 |
| Certification | 0.3 | 1.3 | 2.3 | 0.03 |

BE IT FURTHER RESOLVED: That the listed engine models are certified to the optional lower-emission NOx standards pursuant to Title 13, California Code of Regulations, Section 1956.8(a)(1).

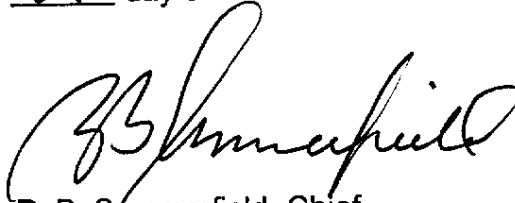
BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2035 et seq.).

Executive Order A-27-77 dated August 16, 1999 is hereby superseded by Executive Order A-27-77-1.

Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this 28th day of June 2000.



R. B. Summerfield, Chief
Mobile Source Operations Division

ATTACHMENT
LARGE ENGINE MODEL SUMMARY

E0: A-27-77-1

6/11/99

Manufacturer: **Mack Trucks, Inc.**
13302 Pennsylvania Avenue

Process Code: **New Submission**

EPA Engine Family: **YMKXH11.9G55**

Manufacturer Family Name: **FAMILY 55**

| 1. Engine Code | 2. Engine Model | 3. BHP@RPM (SAE Gross) | 4. Fuel Rate: mm/stroke @ peak HP (for diesel only) | 5. Fuel Rate: (lbs/hr) @ peak HP (for diesels only) | 6. Torque @ RPM (SEA Gross) | 7. Fuel Rate: mm/stroke@peak torque | 8. Fuel Rate: (lbs/hr)@peak torque | 9. Emission Control Device Per SAE J1930 |
|----------------|-----------------|---------------------------|---|---|--------------------------------|---|---------------------------------------|---|
| N/A | ETG-350 | 350 @ 1800 | N/A | 121 | 1260 @ 1250 | N/A | 100 | Q5, ECM, TAA, TBT |
| N/A | ETG-325 | 325 @ 1950 | N/A | 113 | 1180 @ 1250 | N/A | 95 | Q5, ECM, TAA, TBT |