

DOCUMENT 6



**AAR 3-MODE EVALUATION OF THE RENTAR IN-LINE FUEL CATALYST**  
***E S D C - Engine Systems Development Center***

*American Railroad Association recognized laboratory*  
Diesel Train Locomotive Engine Tested Off Chassis In Laboratory Cell

**Results:**

- 7.0% Fuel Consumption Improvement at Idle
- 1.5% Fuel Consumption Improvement at 50% and 100%
- 15.1% NOx Improvement
- 11.8% Particulate Matter (PM) Improvement
- 9.1% Carbon Monoxide Improvement
- 7.0% CO2 Improvement by Carbon Balance Assumption
- 15.1% Opacity (Smoke) Improvement at 50% Power
- 13.9% Acetone Reduction
- 28.3% Benzene Reduction
- 36.2% Toluene Reduction
- 35.2% Ethyl benzene Reduction / 52.1% M-Xylene Reduction
- 30.0% O-Xylene Reduction / 41.0% P-Xylene Reduction

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**CHESEAPEAKE BAY FOUNDATION**

***Karen Noonan Memorial Environmental Education Center***

As published in full page article in BOATING MAGAZINE  
Marine vessel "Karen N" powered with a Caterpillar 3116TA

**Results:**

- 7.8% to 30.9% Improvement in MPG

DOCUMENT 8



**FINAL REPORT OF THE DIESEL FUEL AND RENTAR FUEL CATALYST**  
**EMISSIONS AND FUEL CONSUMPTION RATE STUDY**

***U.S. Army Aberdeen Test Center / Aberdeen Proving Ground, MD***

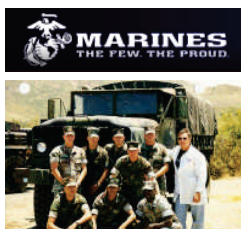
***Endorsed by the USMC, Quantico, Virginia***

Prepared for U.S. Army Developmental Test Command and  
Maryland Department of the Environment

**Results:** Using No. 2 diesel fuel

- 3.6 Fuel Consumption Improvement
- 14.1% CO2 Improvement
- 12.0% NOx Improvement
- 17.4% Carbon Monoxide Improvement
- 12.6% Hydrocarbons
- 10.9% O2 improvement

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**OPERATION RENTAR FUEL CATALYST TESTING**

***U.S. Marine Corps – Company C – 7<sup>th</sup> Motor Transport Battalion***

Humv and 5 ton trucks

**Results:** Average Benefit reported

- 38.7% MPG improvement
- 15.4% to 44.8% Opacity improvement