Yuba City, CA CNG school buses proudly display this logo

TUG Tidbits

Newsletter of the Natural Gas Transit (& School Bus) Users Group

September 2008

ASE to add CNG Transit Bus Test

ASE, the National Institute for Automotive Service Excellence, is adding a new test to its transit bus series. This test will cover Transit Bus Compressed Natural Gas (CNG) Engines and be designated as the H1 test. Other ASE Transit Bus Tests cover Diesel Engines (H2), Drive Train (H3), Brakes (H4), Suspension and Steering (H5), Electrical/Electronic Systems (H6), HVAC (H7), and Preventive Maintenance (H8).

The new H1 test will be the second ASE certification test for CNG vehicle technicians. It will join the longstanding F1 Automotive Compressed Natural Gas Test.

ASE's mission is to improve the quality of vehicle repair and service through the testing and certification of repair and service professionals.

At present, about 400,000 professionals hold current certifications. They work in every segment of the automotive service industry: car and truck dealerships, independent garages, fleets, service stations, franchises, and more.

For more information go to www.ase.com or call ASE at 703-669-6600.

New Department of Energy/NREL Hydrogen and Fuel Cell Bus Reports

The Department of Energy's National Renewable Energy Laboratory (NREL) recently published a third report on its evaluation of hydrogen and fuel cell buses at SunLine Transit Agency in Thousand Palms, CA. It updates the previous reports, including results through March 2008, and covers one prototype fuel cell bus, one prototype hydrogen hybrid internal combustion engine (HHICE) bus, and five new CNG baseline buses operating from the same SunLine bus depot. From January 2006 to March 2008, SunLine operated the fuel cell bus nearly 51,000 miles with an overall fuel economy of 8.12 miles per diesel gallon equivalent (DGE). For comparison, SunLine's CNG buses have an average fuel economy of 3.34 miles/DGE. During the same timeframe, the HHICE bus accumulated more than 43,000 miles with an average fuel economy of 4.90 miles/DGE. Hydrogen cost was $19.44/DGE while natural gas cost was $1.49/DGE. Propulsion system maintenance costs were $0.22, $0.39 and $0.08 for the fuel cell, HHICE and CNG buses respectively. The CNG buses' mean time between road calls was seven times that of the fuel cell bus and five times that of the HHICE bus.

To download the document, go to: http://www.nrel.gov/hydrogen/pdfs/43741-1.pdf for the evaluation results and http://www.nrel.gov/hydrogen/pdfs/43741-2.pdf for the Appendices.

NREL also published a third report on its evaluation of fuel cell buses in service at AC Transit in Oakland, CA. The evaluation covers three prototype fuel cell and six diesel baseline buses operating from the same bus depot. From Apr 2006 - Dec 2007 AC Transit operated the fuel cell buses more than 62,000 miles with an overall fuel economy of 7.04 miles/DGE. For comparison, AC Transit's diesel buses had a fuel economy of 4.2 mpg during the same timeframe. The diesel buses' mean time between road calls was four times that of the fuel cell buses. Propulsion unit maintenance costs were essentially equal.

To download the document, go to: http://www.nrel.gov/hydrogen/pdfs/43545-1.pdf for the evaluation results and http://www.nrel.gov/hydrogen/pdfs/43545-2.pdf for the Appendices.

NREL is continuing to track the performance of both SunLine and AC Transit's fuel cell buses.

"How to Buy Natural Gas Bus Fuel" October 23 TUG Webcast

TUG is holding a FREE webcast: ***How to Buy Natural Gas Bus Fuel*** from 1-3 p.m. Eastern Time, on Thursday October 23. Dennis Smith of the Department of Energy will lead off by explaining why bus operations should consider alternative gas purchasing options. Gisela Ratajski of Pierce Transit will discuss how their transit au-

thority purchases gas and Jim Clarkson of Resource Supply Management will present the various options for purchasing natural gas. There will be time for questions and answers during and after the presentations. You should soon be receiving a separate notice about the webcast – but whether you do or not, just dial in to 1-888-790-5897 (use the passcode HANK) for the audio and join the web portion directly at https://www.mymeetings.com/nc/join.php?i=PG6485741&p=HANK&t=c or https://www.mymeetings.com/nc/join/ using conference number PG6485741 and audience passcode HANK at 1 pm Eastern Time on Thursday October 23. Please alert your purchasing department so that they can participate.

Philippines Seeks '100% Use' of CNG in Public Transport by 2010

To help ease the burden of the public transport sector amid the continuing rise in the price of oil, the Philippine Land Transportation and Franchising Regulatory Board (LTFRB) is gearing up for the use of 100 percent CNG in public utility vehicles by 2010. "By 2010, all buses, taxis, and jitneys should be CNG operated," said LTFRB Chairman Thompson Lantion in a press conference. "This will be our direction. We will no longer be dependent on diesel because CNG is made locally so it is cheaper." (Source: *NGVAmerica Newsletter*)

Don't Miss the "Natural Gas Transit" Advertorial

The Sept/Oct edition of METRO Magazine will include a 16-page advertorial by NGVAmerica on "Natural Gas Transit: - Meeting America's Needs, Moving America Forward." It will also be distributed at APTA's triennial International Public Transportation Expo starting October 6 in San Diego.

The advertorial section includes articles on economics, environment and performance leading the drive for natural gas, a comparison of the economics of natural gas, clean diesel and diesel-electric hybrid buses (conclusion: natural gas can save a transit property as much as $288,000 over the 12-year life of a transit bus!), lists of natural gas bus and paratransit vehicle manufacturers, and a summary of the federal government natural gas vehicle tax incentives.

If you don't get METRO magazine and you won't be at the APTA Expo, contact Hank Seiff at hseiff@cleanvehicle.org for an electronic or paper copy of the advertorial as soon as it is published.

San Diego Gets $9 Million to Replace Old Diesel Buses with Natural Gas

Nine million of the $136 million in transportation bond money recently distributed by California Governor Arnold Schwarzenegger will go toward replacing old diesel buses

with clean-burning natural gas buses. "With the money we're receiving…we are able to retire buses that operate on diesel that are well beyond their useful life and have become very expensive to maintain with newer buses, more comfortable buses, buses that are better state-of-the-art, that burn compressed natural gas for the benefit of the environment," said Harry Mathis, chair of the Metropolitan Transit System (SDMTS) Board of Directors.

The money is from California Proposition 1B, a $3.6 billion transportation bond measure passed by California voters in 2006. It brings the San Diego region's total allocations from 1B to $36 million since last July 1. SDMTS officials said the 50 new buses -- 25 of them 40-footers and the rest 60-foot articulated models -- will bring the system's fleet to nearly 100 percent powered by CNG. Escalating gas prices have boosted bus ridership well above the four percent annual growth rate for the past few years. (Sources: *San Diego Union-Tribune* and *NGVAmerica Newsletter*)

Natural Gas Bus "Incidents" – What Can We Learn from Them? **– Presentations from July 15 TUG Webcast Available**

In case you missed the July 15 TUG webcast, ***Natural Gas Bus "Incidents" – What Can We Learn from Them?*** , the slide presentation is posted at http://www1.eere.energy.gov/cleancities/toolbox/webcast_presentations.html, on the Department of Energy's Clean Cities website. Just click on the July 15, 2008 webcast to go to the presentation.

The webcast included discussions of four types of incidents of interest to bus operators:

- Pressure Relief Device Failure Modes
- Bus Fires
- CNG Dryer Heater Rupture and Fire
- SuperShuttle Cylinder Rupture

Lessons learned from these incidents include:

- The need for periodic inspections of CNG fuel systems, especially cylinders and PRDs
- Make sure no moisture can collect in the PRD vent tube(s)
- Check routing and condition of hydraulic lines and components to avoid leakage which can lead to fire
- Gas dryers must be periodically inspected and maintained
- Comdyne (brand) cylinders exposed to acid should be depressurized and destroyed immediately. If other brands of cylinders are exposed to acid, contact

the cylinder or vehicle manufacturer immediately to determine what action should be taken.

New Natural Gas Buses in the USA

San Jose California's Mineta international Airport's 34-bus fleet has now transitioned from diesel to CNG. The airport's 14 new blue CNG shuttle buses replaced the last diesel powered vehicles. More than 1.3 million gallons of diesel fuel were saved as a result of the first phase of conversion to CNG buses in 2003, lowering exhaust emissions by about 76 tons a year. The new buses will increase that saving to nearly 200 tons a year compared to 2001 levels. (Source *Silicon Valley/San Jose Business Journal)*

San Bernardino (CA) National Forest - The "Rim of the World" Unified School District is receiving five CNG school buses as part of a South Coast Air Quality Management District (SCAQMD) grant program to replace aging, dirty diesel school buses in their coverage area with clean-burning CNG buses. "Some of these buses are among the highest polluting vehicles in operation today and pose a significant health threat to our school children," said William A. Burke, governing board chairman of the SCAQMD. "This is an extraordinary opportunity for this region." The entire $68 million being spent on the program will replace about 330 buses throughout Southern California, he said. (Source: *NGVAmerica Newsletter*)

Fort Collins, Colorado's transit fleet got a little more eco-friendly with the addition of three natural gas buses. The town already had one natural gas bus that it had been testing. Fort Collins also operates 23 diesel buses to serve the city. "It's just been a commitment the city has had for quite some time to put out less emissions," said Marlys Sittner, general manager for Transfort and Dial-A-Ride. Each CNG bus costs about $370,000, or roughly $20,000 more than a comparable diesel bus. However, the substantially lower operating costs should quickly pay back that higher first cost. (Source: *NGVAmerica Newsletter*)

Washington, DC Metro has announced both the purchase of 22 CNG 60-foot articulated buses and a new color scheme for its transit fleet. In addition to the CNG "artics," another 203 hybrid buses in the new color scheme will be arriving between now and next June. (Source: *Washington Post* and *WMATA*)

West Covina, CA's Foothill Transit has put out a bid for 30 CNG buses with an option to buy 60 more. When all 90 are purchased the entire 312-bus fleet will be powered by natural gas. With wholesale diesel fuel at about $4.50 per gallon, and an

equivalent amount of compressed natural gas at about $2 a gallon, CNG buses are far less expensive to operate. Foothill Transit expects to be diesel free by 2011 (Source: *Pasadena Star-news*)

New Natural Gas Bus Purchases Overseas

Mozambique's government announced its intention to switch public buses to run on CNG. Environment Minister Alcinda Abreu said the country wanted to embrace the use of natural gas in order to reduce the negative impact of oil prices on the economy and to make use of its abundant natural gas deposits by boosting domestic consumption. . The government's decision to switch to natural gas followed a successful pilot project in the capital city of Maputo, where gas was used to run six buses. (Source: *NGVAmerica Newsletter*)

Venezuelan bus manufacturer ENCAVA has taken its first steps into natural gas bus production. Demand for natural gas buses in Venezuela could be as high as 150,000 units in the coming years. The 32-seater bus is powered by a 195 hp Cummins B series engine and is expected to be followed by a 54-seat bus during 2009. The chassis and body were built by ENCAVA entirely in Venezuela. (Source: *latamgas.com*)

Ankara, Turkey and The Hague, Netherlands have ordered natural gas buses from German bus manufacturer, MAN Nutzfahrzeuge. The city of Ankara has ordered 500 CNG MAN Lion Classic buses, while 135 MAN Lion City buses are headed for The Hague. (Source: *GNV Magazine*)

Bangkok, Thailand - In a bid to deal with skyrocketing fuel prices and, simultaneously cut pollution, Thailand's cabinet approved the leasing of 6,000 natural gas public buses for the capital, Bangkok. The Bangkok Mass Transit Authority (BMTA) will sell its old fleet of 3,535 non-air-conditioned buses, and will lease 3,000 natural gas buses in the next few months. The buses will begin operating by May 2009. A second batch of buses will be rolled out by September 2010. With the new fleet, the BMTA estimates its fuel costs per bus will drop about 50 percent. Bangkok is a city known for congested streets, but air quality has improved in the past few years as the taxi fleet was forced to switch to natural gas and a new light rail system was built. (Source: *NGVAmerica Newsletter*)

Please send all questions, comments, requests for information, etc. to Hank Seiff at 703-534-6151 or hseiff@cleanvehicle.org. See the **NEW** TUG website at http://www.eere.energy.gov/afdc/vehicles/natural_gas_users.html