

# *TUG Tidbits*



*Newsletter of the Natural Gas Transit Users Group*

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August, 2004

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## **What is *TUG Tidbits*?**

The Department of Energy, the National Renewable Energy Laboratory (NREL) and the Clean Vehicle Education Foundation sponsor Transit Users Group (TUG) meetings to allow transit agencies to facilitate communication, share technical information, identify and solve problems, and stay up-to-date on new natural gas transit bus information. This is the second edition of our electronic newsletter to provide information to those on the TUG mailing list. We solicit your comments, “letters to the editor,” suggested articles and other information you choose to provide.

## **TUG Meeting Rescheduled for November 18 in Anaheim, CA**

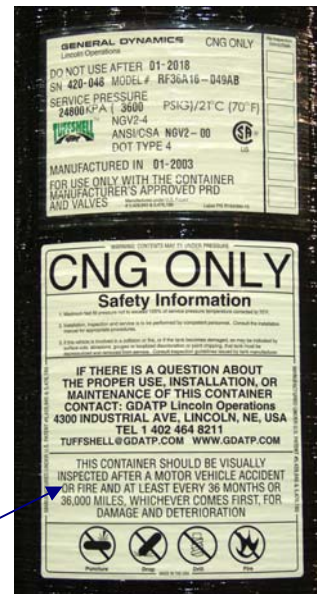
The Natural Gas Transit Users Group (TUG) meeting, scheduled for Tacoma WA, June 7-8, 2004, was cancelled because of low registrations of transit authority personnel. Many people told us they were unable to attend because of organizational travel restrictions or other conflicts.

We have rescheduled the meeting for November 18 in Anaheim, CA, following APTA’s Bus Equipment Maintenance meeting. Responses to our recent questionnaire indicated that it would be easier to attend TUG meetings in conjunction with other transit industry meetings. We will be sending out information on the November TUG meeting in about a month.

## CNG Cylinder Inspection Requirements

(This article is a summary of one of the presentations which had been planned for the Tacoma meeting. If you would like a copy of the full presentation, please contact us at the phone number or email address shown below.)

On transit buses, passenger safety is all important. All new CNG vehicle fuel containers (cylinders) MUST meet the federal government's Federal Motor Vehicle Safety Standard 304, *Compressed Natural Gas Fuel Container Integrity* and SHOULD meet the industry's ANSI/CSA NGV2, *Basic Requirements for Compressed Natural Gas Vehicle Fuel Containers* standard. The government standard requires the cylinder label to say "This container should be visually inspected after a motor vehicle accident or fire and at least every 36 months or 36,000 miles, whichever comes first, for damage and deterioration." NGV2 adds that "The inspection shall be performed by a qualified container inspector in accordance with (1) the manufacturer's recommendations and (2) the inspection procedures provided in CGA pamphlet C-6.4."



What makes a "qualified inspector" per CGA (Compressed Gas Association) pamphlet C-6.4?

- two years experience conducting container inspections,
- supervision by someone with two years experience,
- approval by the container manufacturer,
- certification by an organization with NGV training centers,
- certification by a state or nationally recognized organization, or
- certification by the authority having jurisdiction.

Inspection Information

The only major organized CNG Container Inspector Certification program we know of is done by CSA. It relies on one and a half day's training by the National Alternative Fuels Training Consortium (NAFTC) at many of 21 community colleges or the Natural Gas Vehicle Institute (NGVI), with the CSA exam given after each training course. Contact NAFTC at <http://naftp.nrcce.wvu.edu/> or NGVI at [www.ngvi.com](http://www.ngvi.com) for more information. Contact CSA at <http://webext.csa.ca/cng/> for a list of presently certified inspectors.

### "Sick of (Diesel) Soot"?

"Sick of Soot – Reducing the Health Impacts of Diesel Pollution in California" is the title of a study recently released by the Union of Concerned Scientists (UCS). It reports that "In 2004 alone, diesel pollution will cause an estimated 3,000 premature deaths in California.... In addition, diesel exhaust will cause an estimated 2,700 cases

of chronic bronchitis and about 4,400 hospital admissions...for cardiovascular and respiratory illnesses every year. The cost of these health impacts is \$21.5 billion per year.”

UCS adds that “thousands of premature deaths can be avoided by accelerating the replacement of diesel engines and retrofitting existing diesel equipment with the latest emission controls.” They identify key sectors needing to be cleaned up as “ports, ships, trains, construction equipment, agricultural engines and most highway trucks and buses...” and recommend that “the EPA should develop regulations that hold trains and ships accountable to the same standards that other diesel engines face.”

“And finally, there needs to be more research into the real-world emissions from diesel engines and the health impacts of ultrafine particles.”

And if the health effects of diesel soot aren’t enough, new research from NASA suggests, “black soot may be responsible for 25 percent of observed global warming over the past century.”

The UCS study is at [www.ucsusa.org/documents/Sick\\_of\\_Soot\\_full\\_report.pdf](http://www.ucsusa.org/documents/Sick_of_Soot_full_report.pdf) and the NASA story is at [www.gsfc.nasa.gov/topstory/2003/1223blacksoot.html](http://www.gsfc.nasa.gov/topstory/2003/1223blacksoot.html).

### How Much are People Paying for NG Fuel?



Retail price for CNG at Phoenix’s Sky Harbor airport read \$1.699 for gasoline gallon equivalent (gge) in late April while regular gasoline in town was selling for around \$2.05. The latest DOE Clean Cities Alternative Fuel Price Report ([http://www.eere.energy.gov/cleancities/afdc/pubs/pricereport/price\\_report.html](http://www.eere.energy.gov/cleancities/afdc/pubs/pricereport/price_report.html)) lists the following nationwide retail average prices for

the week of June 14:

gasoline (regular grade)	\$1.99	CNG (gge)	\$1.40
diesel	\$1.71	CNG (dge)	\$1.57 (calculated)

In December, 2003 MARTA (Atlanta) was buying gas month by month at \$0.71/therm (\$0.91/dge). SunLine Transit (Palm Desert, CA) has a multi year fixed price contract which includes gas and full O&M for stations. Their approximate price for gas only is \$0.72/therm (\$0.93/dge). SunLine’s fully loaded cost is \$1.09/therm (\$1.40/dge) which is the average for multiple stations. They have two years remaining on their contract at this price.

Phoenix, AZ has a two year fixed price gas contract at approximately \$0.65/therm (\$0.84/dge). WMATA (Washington, DC Metro) has a two-year fixed price contract

for \$0.61/therm (\$0.79/dge) while Pierce Transit in Tacoma, Washington is paying \$0.60/therm (\$0.77/dge).

## **DC Metro Battles over Future CNG Bus Purchases**

Reversing a policy instituted in 2000 to buy only natural gas buses to improve the region's poor air quality, the Washington Metropolitan Area Transit Authority (WMATA) board voted on June 17 to change its plans.

Board Chairman Robert Smith argued that 117 "clean" diesel and 100 diesel-hybrid buses could be bought for \$82 million whereas 200 CNG buses, plus the retrofitting of a new garage and fueling station would cost \$86 million. He also claimed that new diesel technology reduces their damaging effect on air quality. Other board members "argued that diesel buses are unpopular, that natural gas is the surest way to protect the environment and that hybrids are untested – fewer than 50 are in use across the country."

At the October 2002 TUG meeting WMATA staff told us that the original 164 CNG buses cost \$340,000 each and the upgrading and retrofitting of a garage and fueling station designed to handle 300 CNG buses cost \$15.8 million. Using those costs a new fleet of 200 CNG buses and an upgraded facility should cost \$83.4 million, but CNG bus prices have fallen (see May 2004 *TUG Tidbits*) and much of the cost of that garage and fueling facility was necessary just to bring the 40-year old facility up to modern code requirements. WMATA also told us that maintenance staff and drivers love the CNG buses. They are clean to fuel and quiet to operate. Fuel economy for the CNG buses was 2.22 mpg (diesel equivalent gallon) compared to 2.66 mpg for diesels on similar routes, but WMATA is currently paying only \$0.77/dge for gas (see article above).

Since the WMATA Board's decision was far from unanimous, it could set off a regional dispute that may threaten funding for the system. Opposition Board Members indicated that they were backing a proposal that would prohibit any D.C. dollars from being used to buy diesel buses. Such a measure could lead to reconsideration of the issue.

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Please send all questions, comments, requests for information, etc. to Hank Seiff at 703-534-6151 or [hseiff@cleanvehicle.org](mailto:hseiff@cleanvehicle.org).

The photos of a CNG bus in the heading and the CNG dispenser were provided by the editor. The CNG container label is courtesy of General Dynamics, Lincoln Operations.