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Clear the air: carbon monoxide poisoning prevention

by Laura Snyder

You wake up every morning feeling fine, but lately, after driving the bus all day, you go home with a severe headache. Maybe you even feel a little disoriented. If this sounds familiar, there could be a chance you are getting poisoned by carbon monoxide, and it's time to check your bus's exhaust system for leaks.



What is it?

Carbon monoxide is a colorless, odorless gas that cannot be detected without special monitors.

The gas is produced by internal combustion engines, found in all fuel-burning vehicles. Carbon monoxide is also found in cigarette smoke.

Once inhaled, carbon monoxide attaches itself to hemoglobin, a chemical in red blood cells that normally carries oxygen.

However, the bond between carbon

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Non-emergency medical transportation: Cost or benefit?

by Pat Weaver

A new study identifies 3.6 million Americans who miss or delay non-emergency medical care each year because of lack of transportation. What does the availability of non-emergency medical transportation (NEMT) services mean for them? Providing non-emergency medical transportation services, particularly when you must transport to a neighboring community with the needed services, is expensive. But

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monoxide and hemoglobin is about 210 times stronger than the bond between oxygen and hemoglobin. That causes the red blood cells to carry carbon monoxide to body tissues, depriving them of oxygen.

It doesn't take much exposure to carbon monoxide for poisoning to occur. The harder you work and breathe, the faster carbon monoxide is absorbed into the blood. Flu-like symptoms, including drowsiness, dizziness, nausea, headache, or tight-



Most often, you will hear a leak before you see it. A loud roaring noise indicates escaping exhaust gases. The louder the roar, the bigger the leak.

ness across the chest might signify carbon monoxide poisoning. Exposure to very high levels of carbon monoxide may cause vomiting, confusion, collapse, or muscle weakness.

How much is safe?

Carbon monoxide in the air is measured in parts per million, or ppm. The Occupational Safety and Health Administration (OSHA) allows for carbon monoxide levels up to 50 ppm in private transit agencies. In the public sector, the Kansas Department of Labor (KDOL) uses the American Congress of Governmental Industrial Hygienists' stricter standard of 25 ppm, according to Rudy Leutzinger, Administrator of Industrial Safety and Health at KDOL.

Exposure of carbon monoxide at levels of 80 to 100 ppm for one or two hours reduces a person's physical abilities, according to the National Institute for Occupational Safety and Health (NIOSH). Without a carbon

monoxide detector (see box on next page), workers often do not recognize the hazard or notice symptoms until they become so affected that they are unable to seek help. While the incidence of accidental carbon monoxide related deaths is relatively low (about 500 Americans each year), it's still wise to be cautious.

Identifying risk factors and prevention

Leaks in exhaust systems. Any driver can be exposed to carbon monoxide when his or her vehicle has a leak in the exhaust system. According to Jim

Clayton, maintenance manager and Chairman of the Maintenance Department Safety Committee at the Kansas City Area Transportation Authority (KCATA), a leak can occur when a tail pipe or other part of the typically-sealed exhaust system breaks.

However, Clayton said, even then, most drivers would have little exposure to carbon monoxide. The engine and exhaust system tend to be located at the back of larger vehicles. On the KCATA's buses, the engine is in a sealed compartment in the back of the bus. The exhaust pipe is at roof-level and directs fumes back away from bus in what is called a vertical design. In the winter, however, the heater of your bus may create a negative pressure when the doors open, and suck in outside exhaust from other vehicles, according to Pete Broere, transit supervisor at OC Transpo in Ottawa, Ontario.

For vehicles with the engine in the front, like cars, the risk of expo-

sure is greater, because the exhaust system runs along the entire underside of the vehicle. When a vehicle with a leak in this type of exhaust system is stopped in traffic, the carbon monoxide is not directed away from the vehicle and puts both the driver and the passengers at a greater risk for poisoning.

Diesel as an alternative

Even with the advent of hybrid buses, and those fueled by compressed natural gas and liquefied natural gas, most transit buses in the U.S. use diesel engines, according to William Schaller, Manager of Administration, Safety and Training for the Maintenance Department of the Milwaukee County Transit System in Milwaukee, Wisconsin. Some transit agencies may have gasoline engines in smaller vehicles, such as 15-passenger vans.

Diesel engines produce less carbon monoxide than gasoline engines, because diesel engines burn fuel more efficiently.

Gasoline cannot be used successfully in a diesel engine, nor can diesel fuel be used successfully in a gasoline engine. Gasoline is a more highly refined fuel, and has less potential thermal energy than diesel fuel. Diesel's greater heat energy offers increased fuel economy, longer diesel engine life expectancy, and decreased emissions. During compression, the diesel fuel heats to a much higher degree, making the engine more efficient. The heat energy gives increases fuel economy and engine life expectancy, as well as decreasing emissions.

"A gasoline engine may reach 20 percent efficiency, but a diesel can go as high as 40 percent," said Schaller. Carbon monoxide accounts for only one percent of the diesel engine's exhaust emissions.

Carbon monoxide detectors

Buying a carbon monoxide detector is a simple preventive measure. **Plug-in detectors** for the home and office can be purchased in your local hardware store for \$20 to \$60. They plug into an electrical socket and will sound a warning alarm when carbon monoxide reaches a dangerous level. Portable, **battery-operated detectors** are an option for bus drivers and mechanics, and can be purchased online from Web sites like www.safehomeproducts.com or www.avshop.com for around \$45. Small, **business card-size detectors** with adhesive backing can be stuck on hard surfaces or carried in your pocket, and cost around \$10 each. These cards do not give an audible alert, but change color as the level of carbon monoxide increases. The card detectors are also available online from www.safehomeproducts.com.

Vehicle inspections

Vehicles should be inspected for leaks in the exhaust system on a regular basis, according to Dave Dempsey, director of Pulmonary Care at Lawrence Memorial Hospital. The Milwaukee County Transit Authority has inspectors on their maintenance staff who also check brakes, suspension, lights, and other parts of the buses. Inspectors are trained to look for signs such as exhaust system pipe cracks, loose coupling or flange bolts, or telltale soot. However, Schaller says most often, you will hear a leak before you see it.

A loud roaring noise indicates escaping exhaust gases. "The louder

the roar, the bigger the leak," said OC Transpo's Broere. Broere also said blue, black, or excessive white smoke indicates a malfunction that could mean carbon monoxide is present. Although carbon monoxide is odorless, odors and exhaust fumes should be investigated. The fumes indicate a problem in the exhaust system, and carbon monoxide may be released along with other gases.

Inspection frequency varies from agency to agency, depending on what the manufacturer requires to maintain the warranty. At the KCATA, buses are refueled daily, which Clayton said provides another opportunity to inspect the buses for

problems, including leaks. Major inspections are also performed every 6,000 miles.

Drivers at the KCATA also fill out "operator's defect cards." These report cards reflect any problems drivers have with their buses.

Other transit workers

The risk of carbon monoxide poisoning is not limited to drivers and passengers. Mechanics or custodians using gasoline-powered tools in enclosed spaces like garages are also in danger. In some instances, even opening doors and windows to an enclosed space has not prevented fatalities.

Mechanics can reduce the risk of poisoning by operating gasoline-powered tools only in open areas. Gasoline powered engines should be stationed outside and away from air intakes, with hoses or lines from the tool running inside. Carbon monoxide detectors can be used indoors as an extra safety precaution. You may want to consider replacing gasoline powered engines with tools that use electricity or compressed air.

Office workers can also be exposed to carbon monoxide just as you might be in your home, due to problems like malfunctioning gas-operated furnaces, water heaters, and space heaters. In addition, idling vehicles stationed at loading docks may give off carbon monoxide fumes that find their way up air ducts and into the office.

Office inspections

Gas-operated water heaters should be inspected periodically and furnaces should be inspected at least annually to be sure they are in good condition, according to Chuck Hoag, Operations Manager at Aquila Gas Company. However, without a carbon monoxide detector, there is no way to know for certain if

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Sources:

- National Transit Institute Hazard Factsheet. *Carbon Monoxide*. http://www.ntionline.com/documents/NTI_36300_f_sheet_carbon.pdf
- Center for Disease Control National Institute for Occupational Safety and Health. *Carbon Monoxide Hazards from Small Gasoline Powered Engines* <http://www.cdc.gov/niosh/topics/co/>
- U.S. Department of Labor Occupational Safety and Health Administration Factsheet: *Carbon Monoxide Poisoning*. http://www.osha.gov/OshDoc/data_General_Facts/carbonmonoxide-factsheet.pdf
- Agricultural and Biosystems Engineering, Iowa State University: *Carbon Monoxide Poisoning—Operating Fossil Fuel Engines Inside Buildings*. http://www.abe.iastate.edu/human_house/aen206.asp
- Transport Canada Road Safety: *The Prevention of Motor Vehicle Exhaust Gas Poisoning*. www.tc.gc.ca/roadsafety/tp2436/rs200203/menu.htm

Carbon monoxide, continued from page 3

you have a leak. Also, be sure your office has good a ventilation system that doesn't take in any outside exhaust fumes. Don't allow vehicles to idle near outside air intakes.

If you suspect a carbon monoxide leak, Hoag said gas companies provide free inspections. Aquila uses combustible gas indicators, (also called CGIs). These indicators test primarily for combustible gas in the air, but also have sensors that detect carbon monoxide. The CGIs are held into air streams produced by furnaces, such as air coming out of vents, and in the gas that comes out of the flue in a water heater or furnace. The CGIs measure carbon monoxide in parts per million.

Pay attention to symptoms

Take time for you and your staff to familiarize yourselves with the signs of carbon monoxide poisoning. Douglas County Fire Marshal Rich Barr said employees should take note if they have such symptoms but only experience them at work.

If you think someone has carbon monoxide poisoning, help them get to an open area with fresh air, and call an ambulance. If they are unconscious, move them if you can. But if you yourself feel significant symptoms while helping, quickly leave the room. The CO level might be too high; you might end up with two tragedies instead of one. In any event, call 911.

Carbon monoxide poisoning is a hazard in the transit business, but it is rare, and it can be averted in most cases. For more information, contact Rich Barr at rbarr@ci.lawrence.ks.us, or Rudy Leutzinger at (785) 296-4386 or Rudy.Leutzinger@dol.ks.gov. ▲

NEMT: Cost or benefit?, continued from page 1

what are the costs of not transporting? Is providing this kind of transportation a cost, or a good investment?

Scenario: You've been in that meeting. You know the one—where you're proposing adding transportation service to the dialysis center in the neighboring community 20 miles away. Demand is so great, and answering calls from desperate families, only to tell them that you can't help them, is difficult at best.

You've asked your county commissioners for an additional vehicle and operating assistance to provide the out-of-town service. It's needed for several individuals who must receive dialysis every Monday, Wednesday, and Friday. It's needed for cancer patients, 97 percent of

ter, for cancer treatment, to mental health services, or to the heart or pulmonary specialist?

A recently published report may help you communicate just how important comprehensive non-emergency medical transportation is for your community. It's an important topic, not just for you and your board or commissioners, but for the entire community. What is the cost to our community to assure access to health care services?

Does improving access to health care for those who don't have the means to get there on their own really lead to improved quality of life and an overall decrease in health care? That was the question posed in a study commissioned by the Transit Cooperative Research Program (TCRP), with results released earlier this year. The study identified approximately 3.6 million Americans

The costs of inadequate health care are passed either to insurance, which we all pay for eventually, or are passed even more directly to be paid with public resources. Quality of life goes down, at a cost to all of society.

whom are treated as outpatients and who must go for radiation treatments five days a week, for 5-8 weeks at a time. The discussion around the table is that it's just too expensive to provide this service. "We just don't have the money..."

You've heard it before. It is expensive to provide long-distance medical transportation service. How do you respond? How do you make the decisions for allocating your resources? And how do you communicate the need for those who don't have cars or can't drive; or who don't have family members to drive them to the doctor, or to the dialysis cen-

ter, who miss or delay non-emergency medical care each year because of lack of transportation. People in this group who miss health care are found to have a higher prevalence of chronic disease and conditions.

Twelve medical conditions or procedures were analyzed to determine whether improved access is cost-effective. The analysis included conditions such as cancer screening, heart and pulmonary disease, diabetes, end-stage renal disease, asthma, flu vaccinations, hypertension, pre-natal care, and others.

For all medical conditions and care studied, it was found that "pro-

viding additional non-emergency medical transportation is cost effective.” For four of these conditions: pre-natal care, asthma, heart disease and diabetes, researchers found that additional NEMT saved costs; i.e., additional investment in transportation leads to a net decrease in total costs when both transportation and

forces that alternative—an alternative that is a good deal more expensive than staying in their own homes.

The costs of inadequate health care are passed either to insurance which we all pay for eventually, or are passed even more directly to be paid with public resources. Quality of life goes down, at a cost to all of

- Work on quantifying the needs in your community. Who needs service, how often and for what purpose? Get your riders and others who need services to tell their stories. They generally can tell their own stories a lot more persuasively than you can by sharing how lack of transportation service may impact them.



There is no one single answer to comprehensive non-emergency medical transportation, and there are no simple solutions. The important thing to remember, though, is that engaging your entire community is likely to create the best solutions.

- Identify new resources to help solve the problem. It may be possible to collaborate with other transportation providers in your community, or with transportation providers in destination communities if health care services are outside your service area. Be creative and make sure you have tapped all the funding sources available to you.

health care costs are considered. The study concluded that “in today’s economy, transportation is relatively inexpensive compared with the higher and rapidly growing cost of health care.”

If increasing non-emergency medical transportation is always cost effective, what’s stopping us? Transportation services generally are funded in a community as a community benefit. It’s not always clear who will use the service, exactly how they will use it, or even what their specific needs are. People who are “transportation disadvantaged” usually can’t afford to pay the full cost of transportation service, even lower-cost transit services. However, we learn from the study results that, if these individuals don’t get necessary medical services, their health care costs are likely to increase and their quality of life probably will go down.

Older individuals may have to move to nursing homes when lack of community-based health support

society through loss of productivity and other direct costs.

If the mechanism for funding transportation in our rural communities is not closely tied to the cost benefit of providing additional transportation services, how do we go about making decisions for allocation of non-emergency medical transportation services? In short, the decision-making must be broadened through community-wide discussion and decision-making based on better information about the needs in your community. This discussion can be facilitated by involving others that you may not have communicated with in the past: your funding agencies or potential funding agencies, your riders, potential riders and their families; local health care service providers; and other community leaders.

Here are some steps to take in preparing for that discussion:

- Seek partnerships with health care providers. Can they help support expanded service? Can they bring some of their services to a satellite location to decrease the cost of transportation? Can they modify schedules to accommodate group- ing trips?

There is no one single answer and there are no simple solutions to comprehensive non-emergency medical transportation. The important thing to remember, though, is that engaging your entire community is likely to create the best solutions.

Source:
“Cost Benefit Analysis of Providing Non-Emergency Medical Transportation.” Hughes-Cromwick and Wallace, *TCRP Project B-27*, <http://www4.trb.org/trb/onlinepubs.nsf/> ▲



What FTA's drug and alcohol forum says about reasonable suspicion tests, and more

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by Brandon Garrison
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The Federal Transit Administration (FTA) Drug and Alcohol Testing Web site provides an open forum for anyone with questions about substance use in the transit business.

The forum features four discussion groups:
—regulatory questions,
—seminars,
—compliance audits, and
—Drug & Alcohol Management Information System (DAMIS) reporting.

You may ask questions of FTA Drug and Alcohol Project employees on a moderated forum by completing a free online registration. Questions are usually answered within a few days of its posting. Here are some questions that have been answered on the forum about federal drug-testing policies.

What role do customer complaints play in determining whether to perform a reasonable suspicion drug test?

Scenario: A customer has said they think one of your drivers is on drugs. Is this an acceptable reason to give the driver a drug test?

Response from FTA's Mike

Reddington: The official word comes from federal regulations 49 CFR Part 655.43 (b) which states "An employer's determination that reasonable suspicion exists shall be based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech, or body odors of the covered employee.

A supervisor(s), or other company official(s) who is trained in detecting the signs and symptoms of drug use and alcohol misuse must make the required observations."

A customer complaint is, in itself, not a valid reason for requiring a reasonable suspicion test, however it may be cause for a supervisor trained in making reasonable suspicion determinations to interview or discuss with the employee the complaint or incident. In the course of the interview or discussion, if the supervisor determined that reasonable suspicion existed based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech, or body odors of the covered employee, the supervisor would be obligated to require a reasonable suspicion test.

Should you perform a pre-employment drug test on an employee who has been on extended leave from work and absent from the random testing pool for several months?

Scenario: An employee has returned from a four-week leave to perform safety-sensitive duties and wasn't properly added to the random testing pool, and as a result hasn't been in the testing pool for months. Is this employee required to take a pre-employment drug test?

Response from FTA's Eve Rutyna:

According to §655.41(2)(d), when a covered employee or applicant has not performed a safety-sensitive function for 90 consecutive calendar days regardless of the reason, and the employee has not been in the employer's random selection pool during that time, the employer shall ensure that the employee takes a pre-employment drug test with a verified

negative result.

If the employee was out of the random pool for more than 90 days—and it appears that they were if it was "several months"—they must take a pre-employment drug test. As you noted, they should also be put back in the random pool immediately.

If an employee quits after failing a drug test and then wants to return, can he or she avoid a follow-up test by waiting for a long period of time before returning?

Scenario: One of your employees quits after failing a drug test but wishes to return. Normally, they must meet with a substance abuse professional and take a return-to-duty test. However, is there any time period where the employee could get out of having to take a follow-up test?

Response from FTA's Mike

Reddington: Federal regulations 49 CFR Parts 40 and 655 place no time restrictions on the follow-up testing requirement.

Do you have questions regarding Kansas's regulations?

The answers above are in accordance with federal regulation, but if you have any questions specific to the Kansas Transit Drug and Alcohol Testing Program, contact Sandy Flickinger, KDOT Drug and Alcohol Testing Coordinator, at (785) 368-7091 or e-mail sandyf@ksdot.org.

Visit the forum yourself

You can read postings or post a question yourself at FTA's Drug and Alcohol Testing Web site. Go to <http://transit-safety.volpe.dot.gov/Safety/BBS/default.asp> ▲



A refresher on transit insurance regulations

by Justin Dorsey

Countless steps are taken to try to prevent vehicle accidents, but they happen anyway. So it is important that your agency has proper insurance. This article reviews who enforces transit insurance regulations in Kansas and which agencies must follow them.

Insurance regulations

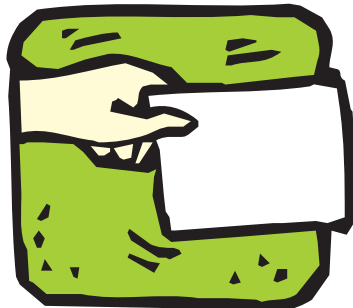
The Kansas Corporation Commission (KCC) requires that public and contract motor carriers transporting passengers within Kansas submit proof of proper insurance before being given a permit for service (KCC Motor Carrier Regulation 84-4-21.) A public motor carrier is an entity that transports passengers for hire in a motor vehicle (K.S.A. 66-1,108.) This includes Kansas non-profit agencies providing transit service. Insurance is required for all vehicles, regardless of passenger carrying capacity.

Some agencies do not need to provide proof of insurance to the KCC. These include Section 5307, 5310, and 5311 agencies as well as federal state and local government entities that operate transit services (K.S.A. 66-1,109j.)

If a public motor carrier has more than 25 motor vehicles registered under its name, it may qualify as a self-insurer through the Kansas Commissioner of Insurance.

How to comply

Minimum liability insurance amounts as specified in K.S.A 66-1, 128 are: \$100,000 for injury or death to any



Some agencies must submit proof of insurance before being given a permit for service.

one person in any one accident, \$300,000 for injury or death to two or more persons in any one accident, and \$50,000 for loss to property of others in any one accident.

For additional information contact Dale Moore at the KCC at (785) 271-3151 or visit their Web site at <http://www.kcc.state.ks.us/trans/index.htm>.

Sources:

Kansas Corporation Commission Motor Carrier Regulations.

http://www.kcc.state.ks.us/trans/mc_regs.pdf

Kansas Statutes Annotated.

<http://www.kslegislature.org/legsrv-legisportal/index.do> ▲

¿Puedo ayudarle?

Basic Spanish for transit employees

by Brandon Garrison

The Roaring Fork Transportation Authority (RFTA), which serves the communities from Aspen to Glenwood Springs, Colorado, decided that educating their drivers in basic Spanish would help increase communication between their drivers and the growing Spanish-speaking population. With grant money from the Colorado Department of Transportation, administrators at the RFTA worked with the Colorado Mountain College to create a booklet called *Basic Spanish for Transit*

Employees, and an accompanying video. To produce these resources, says John Filippone RFTA operations supervisor, "We used some of our Spanish-speaking employees, and some of their ESL teachers."

The book

Basic Spanish for Transit Employees is a pocket-sized, laminated phrase book filled with common transit expressions in English and Spanish. According to the book, "employees can use these aids as a means to develop a working vocabulary of 'Bus Spanish'—unique phrasing for the transit workplace." Each phrase is

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Designing user-friendly bus schedules

by Laura Snyder

Marketing isn't only about how you attract your customers; it's also about how you keep them. A confusing bus schedule can discourage both potential and current customers from using your services. A study reported on by the National Center for Transporta-

tion and Industrial Productivity (NCTIP) at the New Jersey Institute of Technology gives some pointers on how you can make your bus schedule more user-friendly.

tion on the back side. However, Steve Cerna, manager of marketing at Via Metropolitan Transit in San Antonio, Texas, said their passengers indicated otherwise. Cerna said when Via redesigned their schedule in 2003, passengers reviewing a prototype indicated they preferred to have inbound and outbound routes on the same side of the schedule.

schedule to read them. The schedule below from Putnam County, NY, places the bus stop locations and time points on the same (horizontal) axis.

Keep weekday and weekend schedules together. There is some disagreement about separating weekday and weekend. The study suggests keeping weekday and weekend schedules for traveling in one direction on the front side, and the opposite direc-

separating morning and afternoon.

Cynthia Lucas, marketing manager of Capital Metro in Austin, Texas, said her agency chose to shade the afternoon times. This was clearer to passengers than using military time, which they had tried unsuccessfully, she said.

To shade or not to shade.

According to the study, shading alternating rows or columns in stripes may or may not help passengers. However, Cerna said his passengers responded favorably to shaded stripes, because stripes help direct the eye from a location across to a time.

Keep design simple. Cramping a lot of information on a pocket-sized schedule can be difficult and unnecessary. Try to stick with only the most pertinent information, including system logo and phone number; name or number of the route; the time the bus leaves, destination and key points; important regulations, boarding instructions and holiday information; effective date; and a simple map with landmarks and reference streets.

If you use a Geographical Information System (GIS), you may be able to do as Via Transit did and include a map drawn to scale. Cerna said passengers appreciated this change as well.

Keep printing simple too. The West Virginia Division of Transit recommends printing on eight-and-a-half by 11-inch paper so the schedule can easily be folded into thirds to fit into a pocket or an envelope for mailing. They find white uncoated stock paper with a 70-pound text weight works just fine. [Your printer can also help you select appropriate paper.]

While four-color (full color)

1 PUTNAM LAKE BREWSTER CARMEL		PUTNAM PLAZA TO PUTNAM PLAZA																				
		Monday-Friday				Monday-Saturday				Monday-Friday												
CARMEL																						
PUTNAM PLAZA		5:30	6:30	7:00	8:00	8:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00
Putnam Hospital/Stoneleigh Ave.		---	---	7:10	8:10	9:10	10:10	11:10	12:10	1:10	2:10	3:10	4:10	5:10	6:10	7:10	8:10	9:10	10:10	11:10	12:10	1:10
Office for Aging/DSS		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BREWSTER																						
Rte. 6 & Rte. 312		OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC
Rte. 6 & Drevville Rd.		OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC
Brewster Heights		OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC
BREWSTER VILL. RAILROAD		5:38	6:38	7:25	8:25	9:25	10:25	11:25	12:25	1:25	2:25	3:25	4:25	5:25	6:25	7:25	8:25	9:25	10:25	11:25	12:25	1:25
Rte. 6 & Argonne Rd.		OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC
Rte. 6 & Peaceable Hill Rd.		---	---	7:25	8:25	9:25	10:25	11:25	12:25	1:25	2:25	3:25	4:25	5:25	6:25	7:25	8:25	9:25	10:25	11:25	12:25	1:25
Peaceable Hill & No. Brewster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
No. Brewster Rd. & Rte. 312		---	---	7:35	8:35	9:35	10:35	11:35	12:35	1:35	2:35	3:35	4:35	5:35	6:35	7:35	8:35	9:35	10:35	11:35	12:35	1:35
Rte. 312 & Rte. 22		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lakeview Plaza (A&P)		---	---	7:40	8:40	9:40	10:40	11:40	12:40	1:40	2:40	3:40	4:40	5:40	6:40	7:40	8:40	9:40	10:40	11:40	12:40	1:40
Clocktower Commons		---	---	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC
Town Center (Rte. 22 & 312)		---	---	7:42	8:42	9:42	10:42	11:42	12:42	1:42	2:42	3:42	4:42	5:42	6:42	7:42	8:42	9:42	10:42	11:42	12:42	1:42
Rte. 22 & Putnam Lake Rd		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PUTNAM LAKE																						
Putnam Ridge Nursing Home		---	---	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC
Putnam Lake Market		4:58	5:50	6:50	7:50	8:50	9:50	10:50	11:50	12:58	1:58	2:58	3:58	4:58	5:58	6:58	7:58	8:58	9:58	10:58	11:58	12:58
Fairfield & Haviland Dr.		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fairfield & Rhinecliff		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rhinecliff & Lake Shore Dr.		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lake Shore & Haviland Dr.		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sacred Heart Church		5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00
Haviland Dr. & Baginaw Rd		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Locations and times are both on the horizontal axis on this bus schedule.

tion and Industrial Productivity (NCTIP) at the New Jersey Institute of Technology gives some pointers on how you can make your bus schedule more user-friendly.

Orient information on one axis.

First, the study recommends that bus stop locations and time points be placed on the same axis, either horizontal or vertical. When locations and time points are perpendicular instead, the reader must turn the

tion on the back side. However, Steve Cerna, manager of marketing at Via Metropolitan Transit in San Antonio, Texas, said their passengers indicated otherwise. Cerna said when Via redesigned their schedule in 2003, passengers reviewing a prototype indicated they preferred to have inbound and outbound routes on the same side of the schedule.

Visually separate AM and PM.

The study also recommends visually

Choosing a font for your bus schedule

When it comes to printing, you will have a lot of information to fit in a small space, so stick with a smaller font—preferably 11 point so it is still readable, but no smaller than a 6 point. Serif fonts, like Times New Roman, are generally easier to read in smaller font sizes than sans serif fonts, according to Carol Holstead, journalism professor at the University of Kansas who specializes in design.

This is Times New Roman at 11 point.

This is times New Roman at 6 point.

However, sans serif fonts can also work, said Holstead, if the letters are more oval-shaped than round.

This is an example of an oval shaped sans serif font (Arial narrow)...

...as opposed to a rounder sans serif font (Helvetica)

Ultimately, use your best judgment and make sure the font is easy to read.

printing might be outside of your price range, two-color is both user-friendly and cost effective. You may also want to use color to distinguish new schedules from old, or one route from another.

For more information, contact Steve Cerna at (210) 362-2378.

Sources:

“Schedules, & Ride Guides.” *Marketing Ideas to Get You There*. West Virginia Division of Public Transit, Jan. 2001.

“Improving Public Transit Schedules: Timetables People can Actually Read,” National Center for Transportation and Industrial Productivity (NCTIP), One-Jang Jeng and George Fallat, Fall 2004. ▲

Spanish for transit

continued from page 7

printed in English, then Spanish, with phonetic spellings to ensure correct pronunciation. The booklet includes translations of numbers, time, days and months, colors, directions, commands, and questions.

The booklet is small enough that drivers can keep it with them on their routes and refer to it as needed. “All drivers have a lot of short breaks throughout the day — I use some of those breaks to expand my Spanish,” said Sage Oliver, an RFTA driver.

The Video

The RFTA also created a companion video available on VHS or DVD.

In the video, drivers and Spanish speaking riders act out possible conversations that might arise on a bus. Topics range from

bus transfers and fares, to hazardous situations. For example, one scenario involves a passenger who wants to bring a container of gasoline onto the bus and the driver tells him it is prohibited. Another situation involves a driver using a wheelchair lift to help a passenger board the bus. The RFTA printed these conversations in the handbook so drivers can read and improve their pronunciation of what they are hearing in the video.

Teaching methods

The RFTA doesn’t force drivers to learn Spanish or use this booklet, but the agency strongly encourages it. The RFTA reimburses employees who enroll in Spanish classes in their free

time. They also regularly schedule training sessions where drivers watch the *Basic Spanish for Transit Employees* video, and hand out the free phrase books. Drivers seem receptive to this method; according to Filippone, “probably 80 percent of [our] non-Spanish speaking drivers have taken a copy of the book.”

How to get the phrase book and video or DVD

If you would like a copy of the book *Basic Spanish for Transit Employees* and its accompanying video or DVD,

Common transit phrases and questions in Spanish

Where are you going?

¿A dónde va?

[ah DOHN-de bah?]

Can I help you?

¿Puedo ayudarle?

[poo-EH-do ah-yoo-DAHR-leh?]

The bus leaves in __ minutes.

El autobús sale en __ minutos.

[ehl OW-toh-boos sah-leh ehn __ mee-NOO-tohss]

contact Carolyn Tucker, Colorado Mountain College Workforce Training Coordinator, at (970) 947-8375. The book costs \$4.50 and the video tape/DVD costs \$7.

Sources:

“Survival Spanish for Transit Drivers Developed by CMC,” by Nick Isenberg, *Colorado Mountain College eNews* at <http://enews.coloradomtn.edu>. Search for “Spanish for Transit” to find the article.

Interview with John Filippone, Operations Supervisor at the Roaring Fork Transit Authority (RFTA). ▲



“May cause drowsiness”—Should my employees on antidepressants be driving?

by Laura Snyder

Antidepressants are being prescribed more often than ever before in the United States. Use of antidepressants among adults has nearly tripled in the last few years, according to the National Center for Health Statistics. Of adults 18 and over, an estimated 10 percent of women and four percent of men take antidepressants. These facts illuminate the likelihood that transit drivers, like other Americans, are taking antidepressants. Is it safe for drivers to take these medications which are known to have side effects including drowsiness and seizures?

Rx review...

Not all antidepressants cause side effects that interfere with driving, according to Dr. Karen Moeller, clinical assistant professor of pharmacy practice at KU Medical Center. Moeller says a class of older antidepressants called tricyclics—Elavil and Anafranil are some common brand names—is known to cause drowsiness. However, she says tricyclics are rarely prescribed now that newer drugs with fewer side effects are on the market.

A newer class of antidepressants, Selective Serotonin Reuptake Inhibitors (SSRIs) is more likely to cause insomnia rather than drowsi-

ness. SSRIs include Lexapro, Zoloft, Prozac, Paxil, Celexa and Luvox. Only Paxil and Celexa sometimes cause mild sedation, but not enough to interfere with driving, says Moeller.

Welbutrin, another antidepressant, can also cause insomnia, so the risk of falling asleep



People react to drugs differently. A sedative might make one person sleepy while another person wouldn't be the least bit tired.

at the wheel with this drug is low. However,

Welbutrin can cause seizures, especially in people who have a history of seizures or epilepsy, or an eating disorder that has produced a deficiency in electrolytes. Moeller says people taking Welbutrin who use alcohol frequently might also have seizures. But for a person who has no history of seizures or epilepsy, Moeller says it is “extremely rare” for Welbutrin to cause seizures.

Drugs used to treat other mental illnesses, such as anxiety, bipolar disorder or schizophrenia can also cause drowsiness. Sedatives such as Xanax and Valium are part of a group called benzodiazepines. Drivers taking these drugs are advised to use caution while driving, says Moeller.

Anti-psychotics are a class of drugs historically used to treat schizophrenia, but they are now being used to treat bipolar disorder and anxiety as well. Moeller says

Zyprexa, Seroquel and Clozaril are the most sedating anti-psychotics.

While the side effects above are generally expected, Moeller also notes that people react to drugs differently. Some individuals stay wide awake while taking sedatives; on the other hand, some who take SSRIs get unexpectedly drowsy. Dosage can

also make a difference in the severity of side effects.

While an employee should not drive right away after beginning a new drug, Moeller says after the body has several weeks to adjust, initial side effects such as drowsiness could cease. After a driver has had a chance to get used to the medication, his or her ability to drive should be reevaluated.

Prescription policies

Lawrence Transit follows the FTA's best practice policies regarding prescription drugs, says Mike Sweeten, contractor. The FTA keeps track of how different agencies across the country are handling drug and alcohol issues, and Sweeten says Lawrence Transit adopts policies that have worked well for other agencies.

“We also provide training within our drug and alcohol program about the effects of prescription drugs,” he says. “We tell [drivers] that if the

prescription carries a warning label regarding drowsiness or operation of a vehicle, to avoid working.”

At Lawrence Transit, an employee is expected to notify a supervisor of the medication he or she is now taking. The supervisor then talks with agency’s doctor or clinic to establish whether the employee can drive safely while on that particular drug. If the employee is unable to work for an extended period of time, Sweeten says he or she might qualify for the Family Medical Leave Act (FMLA). If not, the employee could use accumulated vacation and sick days. As a last option, the employee could apply for an unpaid leave of absence.

Sweeten says transit agencies should encourage their drivers to talk a doctor about how medications affect their tasks as a transit driver.

Disclosing medications

Unfortunately, you might not be able to count on every driver being honest with you about medication being taken. Some agencies require employees to report such drugs to supervisors, while others only encourage doing so.

Sandy Flickinger, drug and alcohol program manager at KDOT, says most drugs used to treat mental illnesses will not show up on drug tests, with the exception of possibly Valium or other sedatives.

Legal implications

Vicky Johnson, attorney for KDOT, says that if you do not require drivers to report their medications, your agency could be held liable if a drug’s side effects cause a driver to have an accident. On the other hand, if you do require drivers to report all medications that could interfere with driving, but the driver fails to disclose taking such a drug, the agency might not be liable.

When your drivers are sent for physicals, you should review a copy of the results and pay attention to any medications the driver is taking. If you have any doubts, obtain written documentation from the driver’s doctor saying that the medication will not interfere with the ability to drive.

Flickinger suggests that employers wanting to create a prescription drug disclosure policy order the pre-

scription and over-the-counter toolkit from FTA’s Web site at <http://transit-safety.volpe.dot.gov/Publications/substance/RxOcx/RxOcx.pdf>. The toolkit includes sample drug policies, procedures and training aids from across the country.

Source: National Center for Health Statistics, at <http://www.cdc.gov/nchs/press-room/04news/hus04.htm> ▲

Threat and vulnerability toolbox completed for rural transit agencies

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by Pat Weaver
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In the wake of transportation blunders that plagued incident response during last year’s hurricanes, the National Rural Transit Assistance Program (National RTAP) will release a new interactive DVD to help transit managers across the country more effectively assess hazards and threats and develop emergency response plans.

The *Threat & Vulnerability Toolbox*, as it is called, leads the transit manager through a planning process by which they 1) identify which assets are most essential to their mission, 2) assess safety hazards and security threats to those assets, 3) develop plans to reduce the likelihood and/or impact of those risks, and 4) establish response protocols for managing critical incidents if and when they do occur.

“The devastation in Louisiana and Mississippi has forced communities all across the country to take a second look at their evacuation

plans, and indeed their disaster response strategies,” noted Dave Barr, acting director of the National RTAP. “Our goal with this product is to give transit operators the tools to prepare for, survive, and recover from the hazards they face.”



The toolbox includes a DVD and workbook.

The interactive DVD and companion student workbook include instructional materials, tests

and exams, exercises to help managers set priorities, and essential protocols for a variety of disaster scenarios. The

DVD also includes video vignettes capturing industry best practices, PowerPoint presentations for training and outreach efforts, a 10-minute stand-alone video on the topic, and a template Safety, Security and Emergency Preparedness Plan (SSEPP) appropriate for transit systems large or small.

The initiative gives transit systems clearer federal guidance safety, security and emergency preparedness

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Growing some options to petroleum-based fuel: “Alternative fuels” and transit

by Justin Dorsey

Transit vehicles powered by alternative fuel represent a very small portion of the nation’s transit fleet. However, if gasoline and diesel prices remain high and environmental issues become more critical, interest in these vehicles will rise. This article discusses the technology and advantages and disadvantages of vehicles powered by biodiesel, ethanol, natural gas, and propane.

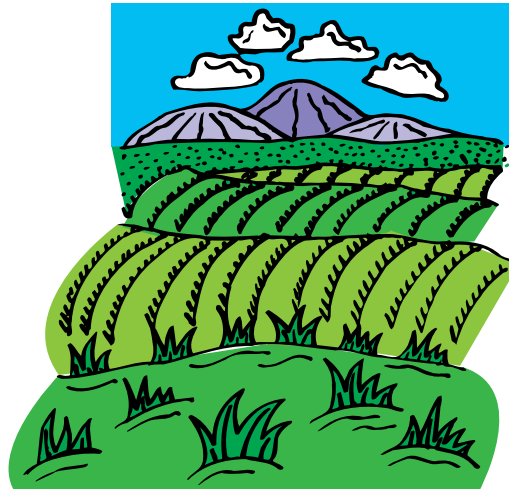
Biodiesel. Biodiesel is a fuel made from specially-processed vegetable oil and/or animal fat. Rapeseed and soybean oil are most commonly processed into biodiesel.

Biodiesel contains no petroleum, but it is usually blended (at any percentage) with diesel fuel. The blended percentage is written as “Bxx.” For example, a biodiesel blend with

Before your agency considers an alternative fuel-powered vehicle, you need to ask several questions including: How reliable is the fuel supply? and Who will provide maintenance?

20 percent biodiesel and 80 percent diesel is written as B20. Nearly all diesel vehicles can operate on B20 without engine modification.

Advantages. Biodiesel is renewable, non-toxic, and when burned, emits far fewer harmful emissions. As the percentage of biodiesel in the blend increases, so does the quality



Ethanol and some sources of biodiesel are made from farm crops.

of emissions. It has higher lubricity than diesel fuel and leaves fewer engine deposits. (Pure biodiesel leaves none.) It even acts as a solvent to help loosen/remove existing engine deposits. Finally, because it is produced domestically, it can reduce dependence on foreign oil.

Disadvantages. Biodiesel costs more per gallon than regular diesel fuel. The higher the percentage of biodiesel in the blend, the greater the cost. Also, it can break down rubber components in vehicles manufactured before 1992. Vehicles switching to biodiesel may incur fuel filter clogging from freed engine deposits. In

addition, vehicles may experience a slight per gallon loss (5 to 10 percent) in fuel efficiency and power. Like all alternative fuels discussed in this article, biodiesel has very few fueling locations.

Ethanol. Ethanol is an alcohol-based fuel produced from any biological feedstock that contains significant amounts of sugar or materials that can be converted into sugar. Corn, wheat, sugar beets, and barley are common ethanol sources. Ethanol can also be produced from “cellulosic biomass,” which includes

materials such as trees, grasses, industrial waste (paper sludge), and municipal waste (waste paper.)

Ethanol is commonly blended with gasoline (at any percentage) to increase octane and improve emission quality. For example, an ethanol blend with 10 percent ethanol and 90 percent gasoline is written as E10. Nearly all gasoline vehicles can operate on E10 without engine modification. Vehicles that are specifically designed to run on high percentages of ethanol (E85) are called “flexible fuel vehicles” or FFVs.

Advantages. Ethanol is renewable, and when burned emits far fewer harmful emissions. As the percentage of ethanol in the blend increases, so does the quality of emissions. Because ethanol is produced domestically, it can reduce dependence on foreign oil.

Disadvantages. Based on a gasoline gallon equivalent of energy,

Midwest fuel prices

September 2005

<i>Fuel</i>	<i>Per Gallon Energy Content in British Thermal Units</i>	<i>Midwest Average Price</i>
Diesel	128,000 - 130,000	\$2.77
Biodiesel (B20)	117,000 - 120,000	\$2.84
Gasoline	109,000 - 125,000	\$2.74
Pure Biodiesel (B99-B100)	Less than B20	\$3.30
Propane	84,000	\$2.44
Ethanol	80,000	\$2.41
Compressed Natural Gas (CNG)	33,000 - 44,000	\$2.12

ethanol costs more than gasoline. Ethanol vehicles have a smaller range. Their range is about 29 percent less than a gasoline vehicle. Also, some automobile manufacturers have claimed that ethanol content higher than 10 percent when used in non-modified engines can cause corrosion of metallic fuel system compounds and premature degradation of plastic or rubber components.

Natural Gas. Natural gas, formed by the decay of plants and animals, is found in abundance in underground deposits, landfills, and at sewage treatment plants. It has powered vehicles since the 1930's. Most vehicles operating on natural gas use compressed natural gas (CNG), because

compressed gas takes up less space.

Advantages. Natural gas and gasoline-powered vehicles have similar power, acceleration, and cruising speed. Compared with gasoline and diesel-powered vehicles, natural gas vehicles emit far fewer harmful emissions and have thicker and safer fuel tanks. If fuel leaks, natural gas is non-toxic and dissipates into the air. Natural gas burns cleanly, thus natural gas vehicles tend to have lower maintenance costs due to less engine wear and tear.

Disadvantages. Vehicles powered by natural gas cost significantly more to purchase than those using gasoline and diesel fuel. Light-duty natural gas vehicles typically cost \$1,500 to \$6,000 more than similar vehicles

while heavy-duty natural gas buses typically cost \$30,000 to \$50,000 more than similar vehicles. Agencies may also have a difficult time finding qualified mechanics to work on these types of engines. In addition, because natural gas has a lower energy content than gasoline and diesel fuel, natural gas vehicles have a smaller driving range—about half that of a gasoline-powered vehicle. This problem can be somewhat remedied by adding fuel tanks, however, tanks take up additional space and add weight, decreasing fuel efficiency.

Propane. Propane or liquefied petroleum gas (LPG) is produced as a by-product of natural gas and petroleum processing. It has powered vehicles since the 1920's. Like natural gas vehicles, propane vehicles use pressurized fuel tanks.

Advantages. Compared with gasoline vehicles, propane vehicles emit far fewer harmful emissions, have similar power, acceleration, and cruising speeds, and have thicker and safer fuel tanks. Also, propane burns cleanly, so propane vehicles tend to have lower maintenance costs due to less engine wear and tear. Finally, almost all propane used in the U.S. comes from domestic sources.

Disadvantages. Compared to gasoline and diesel-powered vehicles, propane vehicles cost more to purchase and have a smaller range. The majority of propane vehicles on the road today were converted from using gasoline or diesel fuel. The conversion process typically costs \$1,500 to \$3,000. In addition, because natural gas has a lower energy content than gasoline and diesel fuel, natural gas vehicles have a driving range about 25 percent less than a gasoline vehicle. This can be somewhat overcome by adding fuel tanks, but fuel tanks add weight and take

Go to next page

Sources:

- Alternative Fuels Data Center— <http://www.eere.energy.gov/afdc/about.html>
- Pierce County Transit System (entire fleet is run on alternative fuels)—
<http://www.piercetransit.org/cng.htm>
- National Renewal Energy Laboratory— <http://www.nrel.gov/vehiclesandfuels/>
- California Natural Gas Vehicle Partnership— <http://www.cngvp.org/programs.html>
- Alternative Fuel Vehicle Institute— <http://www.afvi.org/>
- Pacific Northwest Pollution Prevention Resource Center (PPRC)—<http://www.pprc.org/pubs/altfuels.cfm#ng>
- Propane Council— <http://www.propanecouncil.org/trade/fleet/economics.htm>.



Rural Transit Conferences and Workshops

August 6-10, 2006

N4A's 31 Annual Conference and Tradeshow
Chicago, IL
Contact: National Association of Area Agencies on Aging
Phone: 202-872-0888

August 7, 2006

Ethical Problem-Solving in the Transit Workplace
Wichita, KS
Contact: Tuck Duncan, KPTA
Phone: 785-235-8825

August 7-9, 2006

2006 Annual Conference of the Kansas Public Transit Association
Wichita, KS
Contact: Tuck Duncan, KPTA
Phone: 785-235-8825

August 10-11 or 14-15, 2006

Introduction to GIS: Transportation Applications
Lawrence, KS
Contact: Rose Lichtenberg
Phone: 785-864-2594

August 13-16, 2006

2006 National Rural Intelligent Transportation System Conference
West Yellowstone, MT
Phone: 206-473-7224

September 13-14, 2006

Financial Management for Rural Transit: Train-the-Trainer
Kansas City, MO
Contact: Rose Lichtenberg
Phone: 785-864-2594

September 13-15, 2006

10th National Conference on Transportation Planning for Small and Medium-Sized Communities: Tools of the Trade
Nashville, TN
Contact: Tammy Enix, Center for Transportation Research
Phone: 865-974-4621

September 23, 2006

2006 Dakota Transit Assn. Conference and Rodeo
Spearfish, SD
Contact: Gary Hegland, Dakota Transit Association
Phone: 701-231-6436

September 27-29, 2006

National Rural Transportation Peer Learning Conference
Indianapolis, IN
Phone: 202-624-7806

Editor's Note:

To include meetings or workshops in our calendar, send information to: Kansas Trans Reporter, KUTC, 1530 W. 15th St., Room 2160, Lawrence, KS 66045.
Email: weaver@ku.edu

October 22-25, 2006

17th National Conference on Rural Public and Intercity Bus Transportation
Stevenson, WA
Contact: Robin Phillips, Transportation Research Board
Phone: 360-705-7929

Alternative fuels,

continued from page 13

up space. Agencies may have a difficult time finding qualified mechanics to work on these engines.

Purchasing an alternative fuel-powered vehicle

Before your agency considers an alternative fuel-powered vehicle ask the following questions:

- How reliable is the fuel supply?
- Where will it refuel?
- Who will provide maintenance?
- Will it have enough range?

If your agency is considering changing the fuel used in a current vehicle, ask the vehicle's manufacturer for a list of required engine modifications. Engine modifications differ depending on age of vehicle, blend of fuel, and type of fuel. A list of alternative fuel vehicle manufacturers, vehicles, and fueling locations can be found at: <http://www.eere.energy.gov/fleetguide/index.html>. This Web site

allows you to compare the characteristics of a variety of alternative fuel vehicles such as transit buses, paratransit vehicles, and shuttles. For example, you can compare the fuel type, horsepower, seating capacity, and transmission type of nine alternative fuel paratransit vehicles.

For more information go to: <http://www.eere.energy.gov/afdc/> ▲

Threat toolbox,

continued from page 11

in the context of community transit.

"This is the most important work to date in the area of safety, security and emergency preparedness for community transit providers," said Gary Gleason, team leader for the consulting group heading the project and a founding member of the Department of Homeland Security. "It is designed to help transit agencies respond more effectively to a wide

range or threats including accidents and incidents, acts of nature, hazardous materials spills, criminal activity, and even terrorist threat."

The initiative has been piloted in several states, including Alabama, Idaho, New Mexico and Utah. Final draft materials were presented to the National RTAP Board this past April. The product was formally released at the Community Transportation Association of America conference in June. Copies of the toolbox, including the DVD, will be available in the near future from Kansas RTAP and through the National RTAP Resource Library.

Watch the Kansas RTAP Web site for announcement of availability—<http://www.ksrtap.kutc.ku.edu> or call Pat Weaver at (785) 864-2595 for more information. ▲

Resources Order Form

Use this order form to order the resources listed in the left-hand column. The others can be downloaded. **Send the order form to:** KUTC Lending Library, 1530 W. 15th Street, Room 2160, Lawrence, KS 66044. Or fax the form to 785/ 864-3199.

Publications and videotapes

Reasonable Suspicion Training for Supervisors. This 23-minute presentation is designed to inform designated transit personnel if there is enough evidence to ask employees performing safety-sensitive job functions to take a reasonable suspicion drug test. Produced by US DOT, 1996.

Choose one:

on videotape

on DVD

Alternative Fuels: What you need to know

This Iowa State University publication discusses the Clean Air Act, which calls for the adoption of clean fuels for use in motor vehicles. 4 pages.

Online resources

Insurance regulations refresher. State of Kansas SCC Motor Carrier Regulations of the Transportation Division. This PDF discusses all regulations for motor carriers in Kansas but has a section dedicated to insurance and the required forms. www.kcc.state.ks.us/trans/mc_regs.pdf.

Designing user-friendly bus schedules

TCRP 45: Passenger Information Systems:

A Guidebook for Transit Systems. This guidebook will be of interest to marketing and graphics professionals, customer service personnel, schedulers, transit planners, operating staff, and others who need to be conversant with the design, distribution, and placement of passenger information materials for public transit systems. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_45.pdf.

Anti-depressants and road safety: A literature review and commentary (No. 18)

This report presents research on driving performance and accident risk in relation to antidepressant drug use. http://www.dft.gov.uk/stellent/groups/dft_rdsafety/documents/page/dft_rdsafety_507635.hcsp.

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Kansas Trans Reporter

The *Kansas Trans Reporter* is an educational publication published quarterly by the Kansas University Transportation Center. The newsletter is distributed free to rural and specialized transit providers and others with an interest in rural and specialized service.

The *Kansas Trans Reporter* is co-sponsored by the Federal Transit Administration under its Rural Transportation Assistance Program (RTAP) and the Kansas Department of Transportation. The purposes of the program are to: 1) educate transit operators about the latest technologies in rural and specialized transit; 2) encourage their translation into practical application; and 3) to share information among operators.

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Address incorrect? Send us the inside form with your corrected address, or fax your changes to 785/864-3199.

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Other services In addition to publishing the *Kansas Trans Reporter*, the Kansas RTAP program offers a variety of other educational services. Following is a partial list of these services:

- Publication dissemination
- Technical assistance
- Telephone consultation
- Training development
- Web site
- Program planning assistance
- Video lending library
- Computer database searches
- Referral services
- E-mail discussion group

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Kansas RTAP staff Assistance can be obtained by contacting a *Kansas Trans Reporter* staff person at the numbers or address above.

Project Director Pat Weaver
Editor Lisa Harris
Contributors Laura Snyder, Justin Dorsey, Brandon Garrison

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