

Enforcing hazmat transport

Responding to hazmat incidents

By Christa Miller

The U.S. Department of Transportation (DOT) estimates that 800,000 shipments of hazardous chemical, petroleum and other materials daily traverse the country. Of these, more than 50 percent may contain errors, including unlabeled loads, incorrect placard and marking identifiers, and improperly segregated chemicals whose interaction can have potentially fatal consequences. Drivers falsify their logbooks, operate under suspended commercial licenses and transport hazardous materials without proper endorsements or shipping papers. And federal government officials have warned that terrorists could steal trucks loaded with explosives and use them as bombs.

Commercial vehicle enforcement (CVE) officers can't catch all of these, and first responders don't have the time to look up information in little-used books. Thus, some software developers have created programs that provide up-to-the-minute data on chemicals, their threat (real or potential), and what you need to protect yourself and others —

whether proactively, in an enforcement context, or reactively, in a first responder context.

Proactive enforcement

Pennsylvania-based RegScan Inc.'s HazMat Trucking Enforcer isn't just for commercial vehicle enforcement. Any officer can use it, because all he needs to do is enter the information from the truck's shipping papers or the placards identifying the load. Based on this, the program warns the officer whether the load complies with federal regulations and hyperlinks the warning to the appropriate DOT regulation's full text, pictures and tables. David Andre, western regional account executive, says it saves a tremendous amount of time. "They receive in about five minutes all the information that would normally take 20 to 45 minutes to look up in books."

Trucking Enforcer is modular, separating sections for placards, load segregation and trailer marking as well as auditing. (Software Developer Robert Lang says label auditing, package marking auditor and shipping paper auditor are available; packaging auditor is still in development.) The modules take a step-by-step approach, leading officers through the questions they need to ask and the references they need to make. "A lot of officers are concerned about making a mistake, because hazardous materials enforcement is so complex," says Andre. Trucking Enforcer, however, simplifies the process.

"We encourage them to click on the hyperlinks



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and read the regulations behind the warnings," says Andre, who adds that the software was never meant to be a "brain" on which officers become dependent.

Trucking Enforcer includes current (mandatory) and voluntary regulations. The DOT constantly revises its regulations, putting new ones into effect during the year, but not making them mandatory until the book's reprinting every October. The software advises users on regulatory exemptions, which vary from shipping papers to placarding to segregation.

The software uses 20 MB of space — two-thirds of that being DOT regulations — so it fits on a vehicle's laptop. RegScan makes available quarterly regulation and/or module updates, unless major changes happen more frequently. Updates are sent to agencies via CD-ROM or downloaded from the Internet.

Lang's team continues to modify the

software to meet clients' needs. One example is a new module incorporating DOT's North American Emergency Response Guide (NAERG) with Trucking Enforcer's easy search function. "Although the software wasn't designed for first responders," says Lang, "having NAERG at hand makes sense" because CVE actions can turn into full-scale incidents.

Trucking Enforcer has become part of homeland security efforts, too. On January 18, Pennsylvania Sen. Roger Madigan announced his intention to distribute free copies of RegScan's software to hazmat inspection teams in all 50 states. Lang says about a dozen states are in "various stages of the procurement process," and several agencies are testing the software.

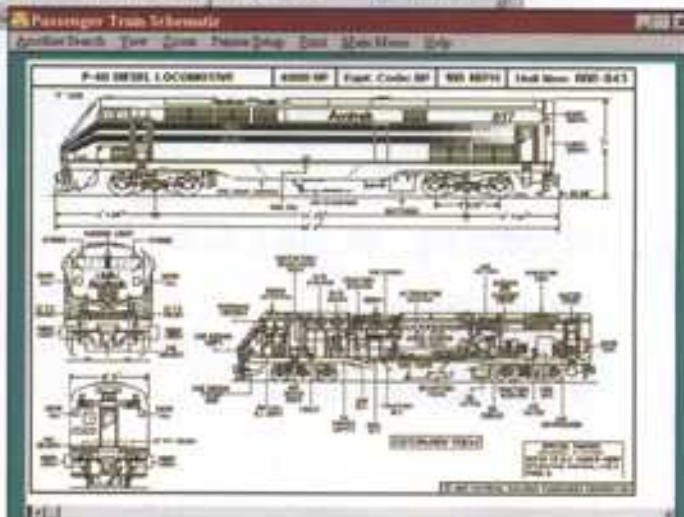
Reactive first response

Although hazmat operations generally fall under the fire department's



MaxResponder users can overlay aerial photographs of their community onto maps of the same area, making it easier to see areas at risk.

OREIS's railroad car schematics give responders a way to anticipate and avoid immediate hazards, and plan rescues.



purview, the police often respond first to traffic crashes involving hazardous materials. The NAERG provides information on chemicals and emergency response, but searching the book can take minutes, not seconds, and it doesn't contain community-specific information like maps. Software, however, cuts down on the search time and can be customized to communities.

Maryland's nonprofit Operation Respond Institute's Operation Respond Emergency Information System (OREIS) modem connects first responders to the databases of all Class I railroads, some short-line and regional railroads and some trucking companies, so officers know who is transporting what. (Future OREIS versions will allow responders to access chemical plant and warehouse data.) Responders need only have the load's UN number at hand to receive OREIS's cross-referenced guide to chemical response information, including personal protective equipment and first aid specifications. OREIS also contains schematics for passenger cars and locomotives, as well as tanker silhouette diagrams to aid responders in identifying hazmat loads. Both tests and real-world users have indicated that using OREIS cuts response time by an average of 17 minutes.

OREIS, says Operation Respond Media Specialist Adam Marton, is part of a strategy to help hazmat carriers "reach out" to their communities. In good faith, some carriers buy and distribute the software to police, fire and medical departments along major trucking or rail corridors. Companies like Amtrak, whose Acela passenger train recently went into service in the Northeast, can elect to train responders. State public safety academies may also buy OREIS and use it to teach standard hazmat first responder courses and seminars. "We developed the software so that a 17-year-old volunteer firefighter with a high school diploma can learn it in 10 minutes," says Marton.

In West Seneca, New York, the fire chief contacted the police department, wanting to provide an OREIS demonstration. The police decided to install their own copy of the software, says Lt.



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John Radwan, because a number of freight trains run through West Seneca, and they wanted to be able to assist area fire responders more efficiently.

OREIS has several interfaces. It's most frequently installed in 911 dispatch centers, like in West Seneca, where it's installed on all three dispatcher workstations. Responders and dispatchers exchange information via radio or CAD, as they do with any other records system. A CD version allows individual officers access to NAERG information, but not the modem connection to carriers' databases. An Internet version combines individual access with the modem connection. Although access is restricted to carriers and responders, many carriers still express post-September 11 reservations about Internet security; therefore, this interface isn't widely used.

Depending on responders' needs, items like actions to take and contacts to call can be customized. For instance,

says Marton, a "phone book" feature allows agencies to record contact numbers for resources like CHEMTREC. "We don't compete with CHEMTREC [or any other chemical information system]," says Marton. "They're an additional resource after you know what the chemical is." OREIS, he says, is designed not for mitigation but for emergency response and rescue.

AOT Public Safety Corporation, also in Maryland, makes two pieces of software applicable to first responders. MaxResponder contains a searchable chemical database, while iHAWK manages documents containing community hazmat information. Both products link to CAD software and integrate with GIS maps to provide community-specific threat and response models.

To use MaxResponder, officers enter into the database information like UN number, chemical name, etc. The database is updated as frequently as departments need, via wireless connection or

CD-ROM. (Though Program Manager Les Greenberg notes none of AOT's dozen or so clients use the wireless connection, largely due to cost concerns.)

MaxResponder comprises a Mobile Module, which "provide[s] the first responder a comprehensive [GIS-based] view of the emergency situation." It also features a Data Collection Module, which allows agencies to enter pre-incident information based on intelligence, safety inspections or other data. The software's Data Administration Module "provides public safety agencies with the ability to install and manage a central database" containing local data like maps, which are supplied by AOT's partnership with GIS company ESRI and downloaded to individual Mobile Modules for all users.

MaxResponder includes a number of resources to aid in hazmat identification and response tactics, including the NAERG, AOT's Improvised Explosive Devices Tool, and an electronic version

of Tempest Publishing's Chem-Bio Handbook, used in "unconventional" settings such as weapons of mass destruction situations.

Where MaxResponder is used for specific incidents, iHAWK is used in regard to the community affected, bringing necessary incident command information to the field. Says Greenberg, "We wanted to put a product in the vehicle that didn't deal so much with the larger command aspects of an EOC [emergency operations center], but provided a basic, just-the-facts approach to an incident." For instance, he says, EOCs often have very sophisticated modeling programs that map hazmat release plumes based on the weather, air (or water) currents, and other conditions. First responders have no need for such an elaborate system, so iHAWK enables EOC operators to transmit simple plume outlines to the people in the field. The responders then overlay the outlines on

HazMat Trucking Enforcer shows officers which labels trucks need to use for hazmat loads, and hyperlinks to corresponding regulations.

MaxResponder's existing maps to give all responders an accurate picture of areas most at risk, evacuation routes, resources, etc.

Maps also allow responders to obtain information about specific locations. For instance, rather than receive second-hand EOC information about an affected building, an officer en route to the call need only click on its mapped icon, so that a list of all "documents," including floor plans, chemical inventory databases, etc., relating to that building comes up. Documents come from many sources, including emergency response plans



prepared in compliance with the Emergency Protection/Community Right-to-Know Act (EPCRA).

Versions of the Palmtop Emergency Action for Chemicals (PEAC) software suite, available from AristaTek Inc., match agencies' usage and platform needs. PEAC-WMD 2002 and PEAC-CW respectively address weapons of

