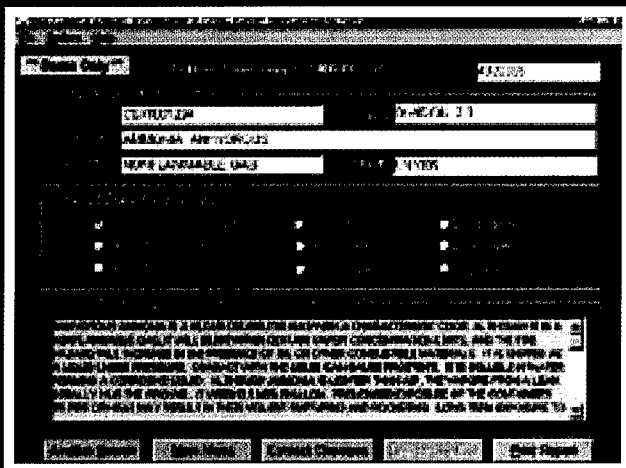
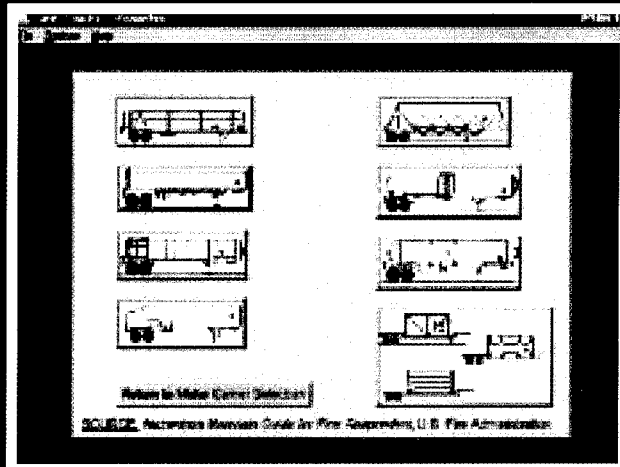
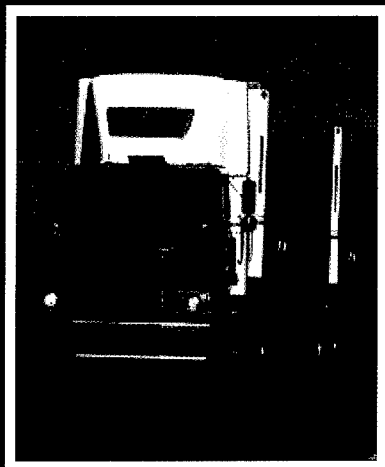




Operation Respond: A Public/Private Partnership



Merging Technology and Emergency Response

REPRODUCED BY: **NTIS**
U.S. Department of Commerce
National Technical Information Service
Springfield, Virginia 22161

August, 2000

OPERATION RESPOND INTERNATIONAL STEERING COMMITTEE

Chair

Mr. Sam A. Cabral

Intern. Union of Police Assoc. AFL-CIO

Members

Hon. Sherwood L. Boehlert

U.S. Representative, New York

Mr. Paul Bomgardner

American Trucking Associations

Mr. Garry Briese

International Association of Fire Chiefs

Mr. Tim Butters

Chemtrec/CMA

Mr. Edward R. Chapman

Burlington Northern Santa Fe Railway

Mr. Doug Cook

Federal Express

Mr. Bob Cumberland

National Volunteer Fire Council

Mr. Charles E. Dettmann

Association of American Railroads

Mr. Howard Elliot

CSX Transportation

Chief John M. Eversole

Chicago Fire Department

Mr. Scott Gorton

CSX Transportation

Mr. John C. Grant

International Assoc. of Chiefs of Police

Lic. Irma Flores Herrera

SCT-Mexico

Mr. Douglas Hotzel

Yellow Freight

Mr. C. Anthony Iannone

United Transportation Union

Mr. Lee Jackson

Federal Highway Administration

Mr. Scott Kaye

Federal Railroad Administration

Mr. Robert M. Keane

Canadian National/Illinois Central

Mr. Hans Peter Kirchgassner

Rhodes Technologies Inc.

Mr. Steve Klejst

New Jersey Transit

Mr. Thomas McNamara

Research & Special Programs Administration

Mr. Mark Meana

Amtrak

Dr. Alvin Nashman

BOD Member, Computer Sciences Corp.

Mr. Fred Nesbitt

International Association of Firefighters

Mr. Jean Ouellette

Canadian National

Mr. Thomas Peacock

American Public Transit Association

Mr. Don P. Pulciani

Transport Canada

Hon. Nick J. Rahall II

U.S. Representative, West Virginia

Dr. Bill Rogers

Motor Freight Carriers Association

Mr. David Schoendorfer

Norfolk Southern Corporation

Mr. Richard Scott

TGS

Mr. Marc T. Tessier

VIA Rail Canada

Mr. Paul Williams

Association of American Railroads

Mr. Edward Wytkind

Transportation Trades Dept., AFL-CIO

Contents

Acknowledgments	1
Introduction	3
The Organization of Operation Respond	
Operation Respond: Purpose and Objectives	4
ITS Program Support	6
Public Sector Initiatives	8
Houston TRANSTAR	8
Motor Carrier Participation	8
Freight Railroads	10
Passenger Railroads	12
Short Lines	13
Awareness and Community Outreach	14
Chemtrec/ TRANSCAER	15
Salt Lake City 2002 Winter Olympics	16
Private Sector Initiatives	17
Amtrak Northeast Corridor Project	17
National Volunteer Fire Council Project	18
Training	19
International Activities	20
Comprehensive Border Integration	20
Southern Border Progress	20
Northern Border Progress	21
Operation Respond in Canada	22
Operation Respond in Mexico	23
Evaluations and Incidents	24
Conclusions and Lessons Learned	25
Next Steps	27
OREIS v4.0i	27
Emergency Access Application	28
DOT's Public Safety Initiatives	29

PROTECTED UNDER INTERNATIONAL COPYRIGHT
ALL RIGHTS RESERVED
NATIONAL TECHNICAL INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE

Acknowledgments

Operation Respond would like to recognize and thank those agencies and organizations that have supported the program and furthered the ORI vision over the past few years. Operation Respond is a cooperative effort, a true public/private partnership that has survived and thrived because of a shared vision of safety and preparedness between government and industry sectors.

Operation Respond would like to acknowledge the strong and ongoing support of the United States Congress. In 1993, Congress commissioned a study, the National Academy of Sciences, National Research Council, Transportation Research Board, "Hazardous Materials Shipment Information for Emergency Response," Special Report No. 239, to find new ways of providing information to arriving responders. They recommended experiments using carrier databases to provide data to responders. Operation Respond was one of these experiments.

It is also important to recognize the ongoing efforts of the Federal Highway Administration (FHWA) and the Federal Railroad Administration (FRA). Through funding support, these agencies have helped to integrate ORI within the ITS program and to position ORI as an approach for railroads to comply with passenger train emergency preparedness rules.

Through the efforts of dedicated members of the House and Senate, like Representative Nick Rahall (D-WV) and Representative Connie Morella (R-MD), the program has steadily gained awareness and support throughout the public sector.

The efforts of those organizations representing emergency responders have also been invaluable to ORI. The International Association Fire Fighters (IAFF) must be recognized for their early and ongoing support of Operation Respond, along with the International Association of Fire Chiefs (IAFC), the Canadian Association of Fire Chiefs (CAFC), and more recently the National Volunteer Fire Council. Mr. C. E. Dettmann, Vice President of the Association of American Railroads deserves special recognition for his commitment to Operation Respond and his help in securing railroad industry involvement.

Operation Respond would like to thank all the members of its International Steering Committee for their guidance and direction during the span of the program. These individuals, working in different sectors of transportation, response, and government, have opened many doors within their institutions to allow ORI to grow and expand.

Finally, ORI would like to recognize and express their gratitude to the emergency response community Houston, TX and Buffalo, NY. More than any other locations, these two communities have committed numerous hours to defining Operation Respond and refining OREIS™ to become a truly effective emergency response tool.

Introduction

This report summarizes three years of a cooperative partnership between the Federal Highway Administration (FHWA), carriers and the emergency response community. This “partnership,” facilitated by the Operation Respond® Institute (ORI), was and continues to be a program of introducing easy to use technological tools designed to benefit “first responders” to transportation incidents. The Operation Respond program represents a true melding of governmental and industry safety interests—a public/private partnership that actually works.

Considerable progress has been made throughout all facets of the program. Of particular note is the development and user acceptance of the software tool named the “Operation Respond Emergency Information System” (OREIS™). OREIS™ is quickly becoming the first responders system of choice when responding to hazardous materials (HM) and passenger train incidents. Currently there are more than 1,100 installations, in 44 states, the District of Columbia, Canada and Mexico. OREIS™ is pushing the state of the art in emergency response.

This partnership, fostered by FHWA/ITS seed money for research and development, has progressed as rapidly as it has because of two other committed sectors. Namely, the transportation industry, including railroads and motor carriers, and the emergency response community. This is truly one of the ITS programs which has benefited these sectors.

The railroad industry as a whole committed resources and promotional programs to not only develop the Operation Respond concept, but also to sell it to the response community. The motor carriers, lead by Chemical Leaman Lines and Yellow Freight, recognized very early on the value Operation Respond provides to carriers.

The response community, through software purchases and organizational support, has stood behind the program from the start. Through the help of the International Association of Fire Fighters (IAFF), the International Association of Fire Chiefs (IAFC), the International Union of Police Associations, and the National Volunteer Fire Council (NVFC), the response community recognized the need, committed time and energy, and are now pushing for the next reiteration: an Internet version.

This report highlights what a true public/private partnership can accomplish. It should serve not only as a model for FHWA’s new “Public Safety” initiative, but should become a major element of that initiative. Operation Respond is a means to an end, a facilitator and provider of real-time, accurate information which allows responders to focus on the problem and provide safe and timely response to hazardous materials incidents.

OPERATION RESPOND:



Purpose & Objectives

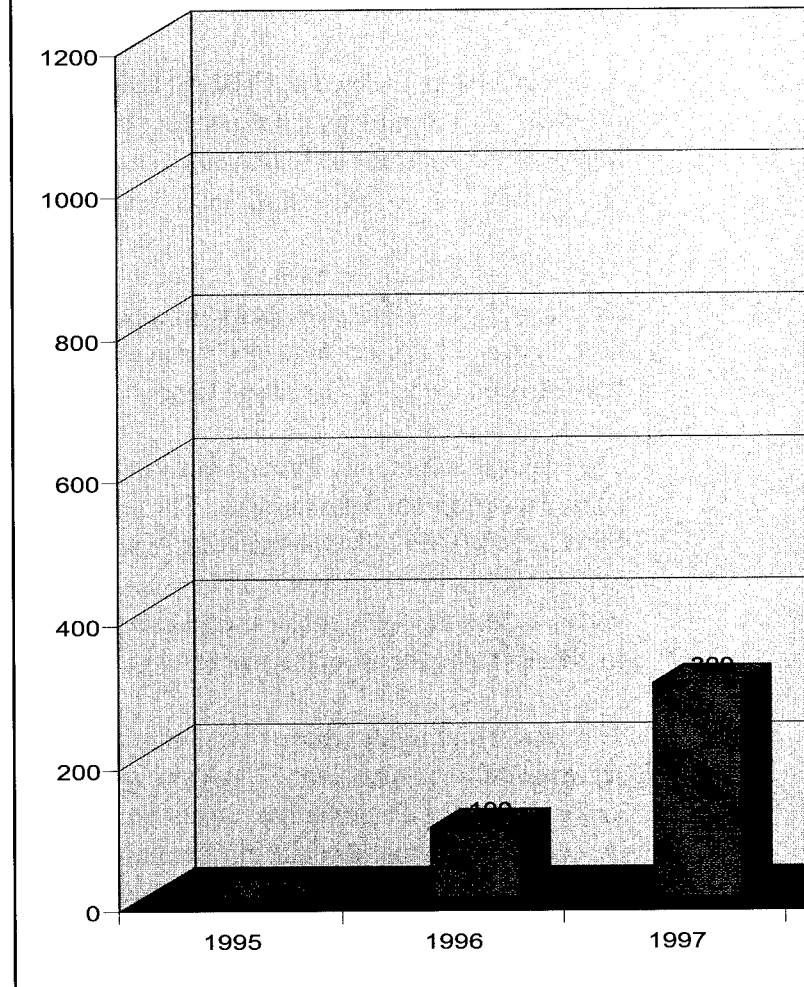
Operation Respond is a not-for-profit organization dedicated to providing the emergency response community with quick and accurate information when dealing with safety and security issues aboard North American railroads and highways. Designed for use at hazardous materials (HM) and passenger train incidents, Operation Respond Emergency Information System (OREIS™) software provides the necessary information to assure that the first responder to an accident is not the first victim.

OREIS™ is a communications system with tremendous lifesaving potential. The OREIS™ software provides a direct connection to the databases of railroad and motor carriers, allowing emergency responders to quickly and accurately identify the presence of any hazardous materials. Police, firefighters, and EMS personnel arriving at the scene of a hazmat accident can use OREIS™ to verify hazardous materials cargo on the affected train car or truck, and respond appropriately to ensure the safety of emergency workers and the surrounding area.

The system also provides detailed diagrammatic schematics for many passenger train cars and locomotives, including Amtrak, VIA Rail Canada, GO Transit, Long Island Railroad, Maryland MARC commuter service, Caltrain, New Jersey Transit, Virginia Railway Express, and Amtrak's new ACELA high-speed trains. OREIS™ highlights interior and exterior views, seat configuration, emergency exit doors and windows, and the location of electric and fuel sources to save critical time in a rescue situation. Incorporation of schematics for cargo tanks is underway.

All Class One Railroads in the United States and Canada, and the Yellow Freight System, one of the largest U.S. LTL motor carriers, are on-line with OREIS™. OREIS™ is currently installed in over 1,100 locations in Canada,

Number of OREIS Installations by Year



Mexico, 44 U.S. States and the District of Columbia.

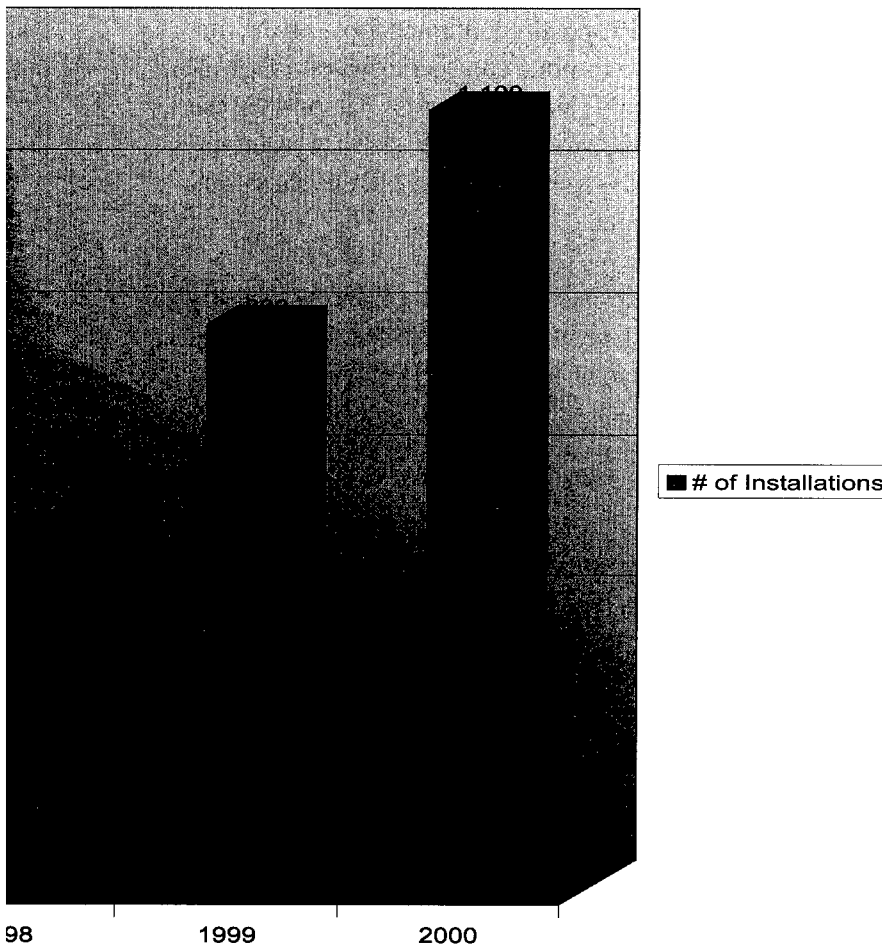
Currently, Operation Respond is converting OREIS™ to an Internet-based application. OREIS™ version 4.0i will be unveiled in the fourth quarter of 2000 and accessed through the Internet with a secure password. The new system will allow ORI to update and refine the program instantly, as new applications are developed.

The Organization of Operation Respond

An International Steering Committee composed of federal and state agencies, law enforcement agencies, fire service organizations, railroads, motor carriers, labor organizations, the Association of American Railroads, the American Trucking Associations, the Motor Freight Carriers Association and the American Public Transit Association oversees the Operation

Respond program. The Steering Committee gives overall direction to the project. Additionally, local committees are established at key locations to give local carriers and community leaders input to the program.

In addition to the ongoing cooperative partnership with the Federal Highway Administration, Operation Respond functions and thrives under a number of partnerships with organizations in both the public and private sectors of transportation and emergency response. Operation Respond's relationship with FHWA through the ITS program, as well as its other partnerships, is described in this report.



ITS Program Support

The ITS program supports Operation Respond's objective of deploying technology which improves hazardous materials (HM) emergency response and allows quick identification of HM involved in commercial vehicle incidents. ORI is an active participant of U.S. DOT's Public Safety Initiative and Steering Group. Regular coordination takes place between ORI staff and the newly created ITS Public Safety Program staff. This program has the objective of "...coordinating the development and implementation of interoperable procedures and technologies for public safety and transportation operations" (ITS Public Safety Program briefing, March, 2000)

Operation Respond's mission is to provide accurate HM information at the scene through easy-to-use technology. The OREIS software runs on the Microsoft Windows platform and relies on basic point and click commands to function. In support of North American surface transportation, Operation Respond established the nation's first direct computer hookups between participating railroads, motor carriers, and over 1,000 fire, police, and 911 dispatch centers in the U.S., Canada, and Mexico.

Operation Respond believes that first responder guidance for hazardous materials incidents can be a useful element of the ITS toolbox. Operation Respond's continued focus on the first responder has generated a unique, proven suite of stand-alone emergency response guidance information that is transferable to meet a variety of ITS requirements. Adoption of the OREIS™ software by ITS user organizations and public safety agencies assists in maintaining the highest level of personnel safety while enhancing agency mission effectiveness, and ORI will work with ITS staff to meet those requirements.

In *Review of ITS Hazmat Incident Management Systems Under Development*, a study conducted by the FHWA's designated evaluator, ICF Consulting, OREIS™ was compared with other systems now under development, namely Tranzit Xpress (TXS), and Cargo*Mate. The presumptive hypothesis for the study was that each of the three concepts had similar objectives, and that the ITS program needed to examine goals, objectives, status, and interoperability of each of the three systems.

The Report noted the success of OREIS™ as an operationally deployed system, while the other systems continued in the developmental stages. The Report, while encouraging the three systems to formally link, noted that OREIS™ "... (should) ... *serve as the primary interface with the emergency response community.*" (Report, Executive Summary, P. 1.)

Operation Respond is well positioned to serve as the *North American* platform of initial hazardous materials incident response guidance called for in that study. This provides a high

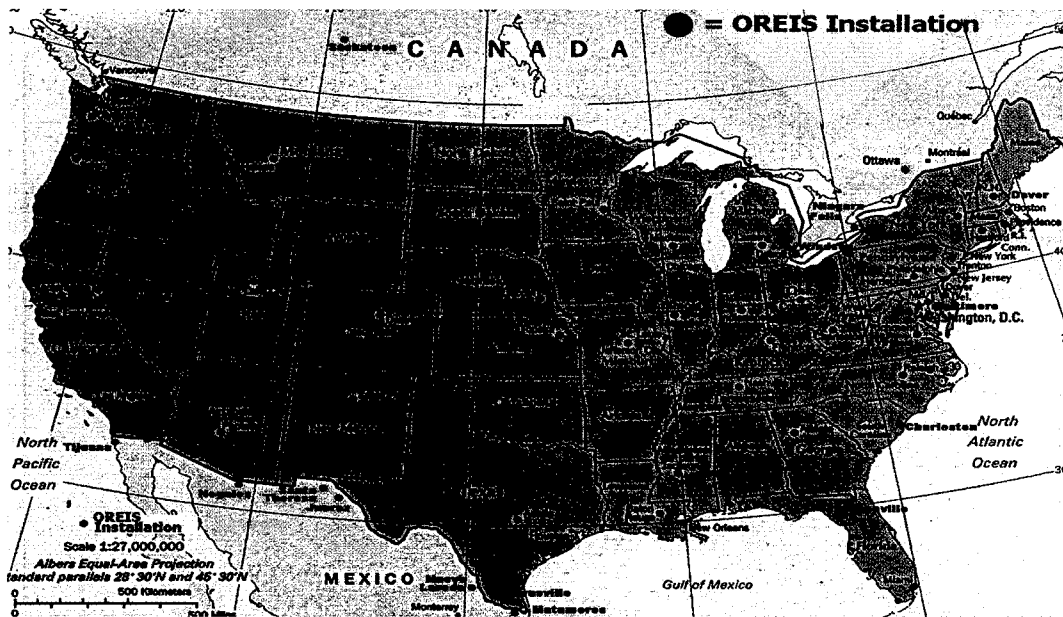
degree of international technology transfer for HM within the ITS community, by assuring interoperability through a common hazardous materials platform based on the UN recommendations.

There are at least two major areas where Operation Respond serves as a major element in ITS deployment support:

First, ITS users and public safety officers use OREIS™ as a briefing and training tool emphasizing awareness and initial actions for personnel involved in handling hazardous materials anywhere. This is potentially lifesaving in areas where those personnel may be the only emergency resource available, such as in remote locations or on rural Interstate highways. Such information may also be invaluable to medical personnel, in assessing the proper course of action for treatment of injuries where hazardous materials are involved.

Second, the adoption and use of Operation Respond enhances safety and hazardous materials awareness in thousands of ITS installations and with the transportation professionals that use OREIS™ and ITS technologies in states and local governments. Through this Cooperative Agreement, Operation Respond is working to enhance the deployment of ITS technologies.

Sample OREIS Installations in North America



Public Sector Initiatives

Houston TranStar

In 1998, under a cooperative agreement with the Federal Highway Administration, Operation Respond preformed a pilot installation of OREIS™ in the Greater Houston Transportation and Emergency Management Center (TranStar). Operation Respond provided TranStar with ten OREIS™ installations, one for each working console in the center. This effectively tied together police, fire, and rescue, ensuring that they had uniform information quickly at the time of the incident.

This pilot installation was the first installation of OREIS™ in a Traffic Management Center (TMC) in North America. The software provided internal databases and connections with carriers that enables TranStar to provide fire, rescue, and emergency guidance to facilitate a rapid, safe response to incidents. Furthermore, OREIS™ allows TranStar to link with all major Houston-area railroads for hazardous-materials contents information, and provides Amtrak equipment diagrams for emergencies.

OREIS™ is the primary hazardous materials, rail grade crossing, and rail-passenger accident information platform for Houston TranStar.

Based upon the outcome of the TranStar installations, ORI has developed a prototype version of OREIS™ that would be of value to other TMC's in managing incident response where HM or intermodal vehicles may be involved. An Implementation Plan outlining the steps necessary to implement OREIS™ at the other TMC's will facilitate interoperability among TMC's planning to include similar incident response capabilities in their system architecture.

Motor Carrier Participation

One of the basic goals of Operation Respond is to expand the participation of motor carriers in OREIS™. Working with FHWA and the American Trucking Association, Operation Respond's efforts focused on gaining wider acceptance of the Operation Respond concept and software within the motor carrier community.

Over the course of the Operation Respond program, two motor carriers have signed licensing agreements to include connections to their hazardous materials files in OREIS™. Yellow Freight System and Chemical Leaman both joined the program and established real-time HM connections with ORI in 1998. Chemical Leaman has since merged and formed QC Carriers.

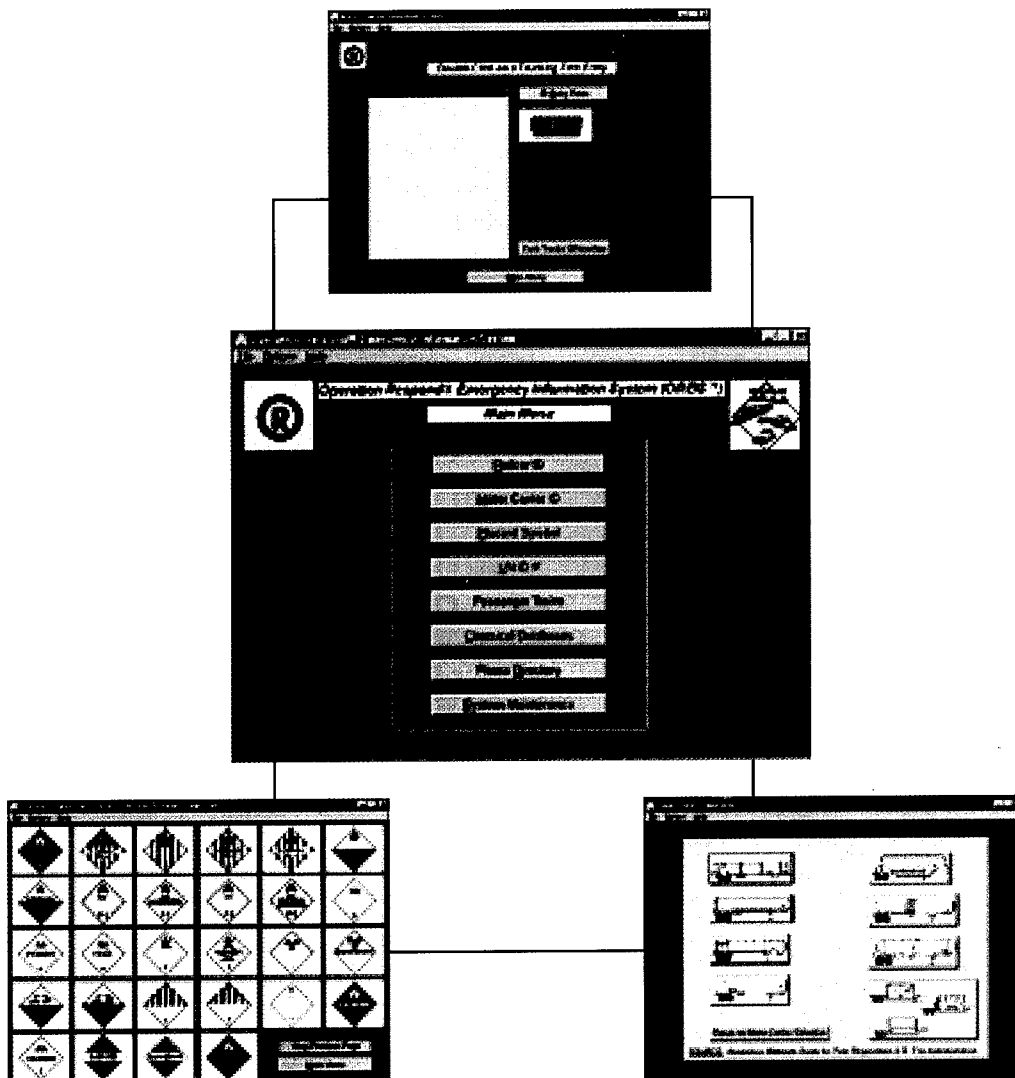
Operation Respond's effort to increase motor-carrier participation in OREIS™ has been

necessarily concentrated on the diversity and size of the US motor carrier industry. Conclusions of an ORI analysis clearly point toward the principal liquid bulk and the LTL (less-than-truckload) sectors of the motor carrier industry as the primary target for inclusion in OREIS™.

In early 1998, Federal Express indicated that it would consider instituting a phased program to join OREIS™. The principal initial applications would be in distribution facilities at airports and truck terminals, with other aspects of Federal Express operations brought on line later. Federal Express is one of the largest integrated transportation companies in the world, and its participation in the Operation Respond program marks a significant milestone for the program's national acceptance.

Motor carriers have brought the following concerns to ORI's attention:

- 1) Security issues related to who may have access to their shipment data;
- 2) Local police officers may use OREIS™ for spot compliance checks and enforcement;



- 3) Many carriers, particularly small and medium-size, do not have the luxury of possessing totally current transaction data.;
- 4) Programming time required to establish and maintain connection.

To satisfy carrier concerns regarding security, an advisory technical paper was produced for both the trucking and the rail industries describing the security features of the OREIS™ software. Because OREIS™ has many features that are “stand-alone” and imbedded in the software itself, and is protected by a variety of firewalls and password systems, the program is deemed exceptionally secure from a computer security standpoint.

The ORI staff has also reached a major milestone with the completion of a prototype software interface program especially designed for prospective motor carrier installations. The ORI interface software, called *MCClient*, makes the motor carrier’s MIS interface requirements much easier, by providing pretested linkage program coding, to allow easy setup of the required linkage with OREIS™. ORI believes this assistance will go a long way toward increasing the number of motor carrier participants.

Operation Respond and the American Trucking Associations began discussions in the third quarter of 1997 leading toward an agreement to jointly promote the Operation Respond program within the trucking industry. The partnership, formalized by the incoming President of the ATA in June, 1998 will involve the joint consideration and development of concepts, enhancements, and modifications to the OREIS™ software, and cooperative facilitation and outreach to enhance motor carrier safety and hazardous materials transportation.

ORI is working closely with the Intermodal Freight Technology Working Group and FHWA on partnership alliances with critical members of the intermodal industry, to assist in rapid expansion of OREIS™ in North America, consistent with DOT intermodal efficiency goals. A key benefit of this effort will be to fulfill DOT and FHWA safety goals and objectives, by highlighting OREIS™ as a non-regulatory, industry-government initiative that will enhance employee and public safety.

Freight Railroads

The freight railroad industry has proven to be one of the strongest supporters of the Operation Respond concept and program from the beginning. With seed money from the Federal Railroad Administration, ORI began its mission to tie together into a comprehensive package the movement of hazardous materials around North America. To be marketed and sold to emergency response agencies, this information system would provide first responders with vital information in a timely and accurate manner.

This feature became the pilot version of the Operation Respond Emergency Information

System (OREIS™), and continues to be an integral aspect of the system today. OREIS™ connects responders directly to the databases of freight railroads to access important hazmat information in a real-time environment.

Responders approaching a freight railroad incident that may involve hazardous materials can visually identify the car number of the affected train car. This number is entered into OREIS™, and a query is placed into carrier databases, until the car number is located. The responder is presented with the exact hazmat contents of the car, assuming that such a material is present. If hazmat is found to be present in the car, OREIS™ provides the responder with guidance about how to deal with the substance under varying conditions, like water, air, or land spill.

OREIS™ provides this emergency hazmat information in a real-time format by utilizing modem connections with carrier databases. The hazmat verification and guidance feature gives responders the information they need to approach a rail incident involving hazmat in a knowledgeable and confident manner. The system response generally takes seconds, streamlining the chemical identification process and allowing responders to minimize environmental and community damage.

The freight railroad industry, in a strong show of proactive safety concern and community outreach, has been a long supporter of Operation Respond and OREIS™. The system currently encompasses the scope of Class One railroads in North America. These railroads have all established direct links between their way billing file databases and the OREIS™ server. This allows for two-way communication where inquiries and data can be transferred.

In addition to database connections, the Class One carriers in the freight railroad industry also hold a stake in the guidance of Operation Respond. As organizations with a vested interest in the program, its future development, and its success, these organizations all hold positions on ORI's International Steering Committee. As the primary voice of leadership and direction for the program, the Steering Committee is essential to the ORI structure.

Many freight carriers also lead the way in the community outreach aspects of the program. The Norfolk Southern, Conrail, and CSX took proactive safety measures by donating copies of the software to emergency response agencies along their lines, and producing and distributing training and awareness materials. The Union Pacific, along with the Association of American Railroads, participated in a community outreach program in 1999 whereby they donated a series of computers to emergency response agencies in Mexico. This donation allowed ORI to begin a program in Mexico, and include the Mexican freight railroad Grupo Transportacion Ferroviaria Mexicana, S.A. de C.V. (TFM) in OREIS™.

The Burlington Northern Santa Fe Railroad, the Canadian National Railroad, the Canadian Pacific Railroad, the CSX Railroad, the Illinois Central Railroad, the Kansas City Southern Railroad, the Norfolk Southern Corporation, and the Union Pacific Railroad all participate in the Operation Respond program.

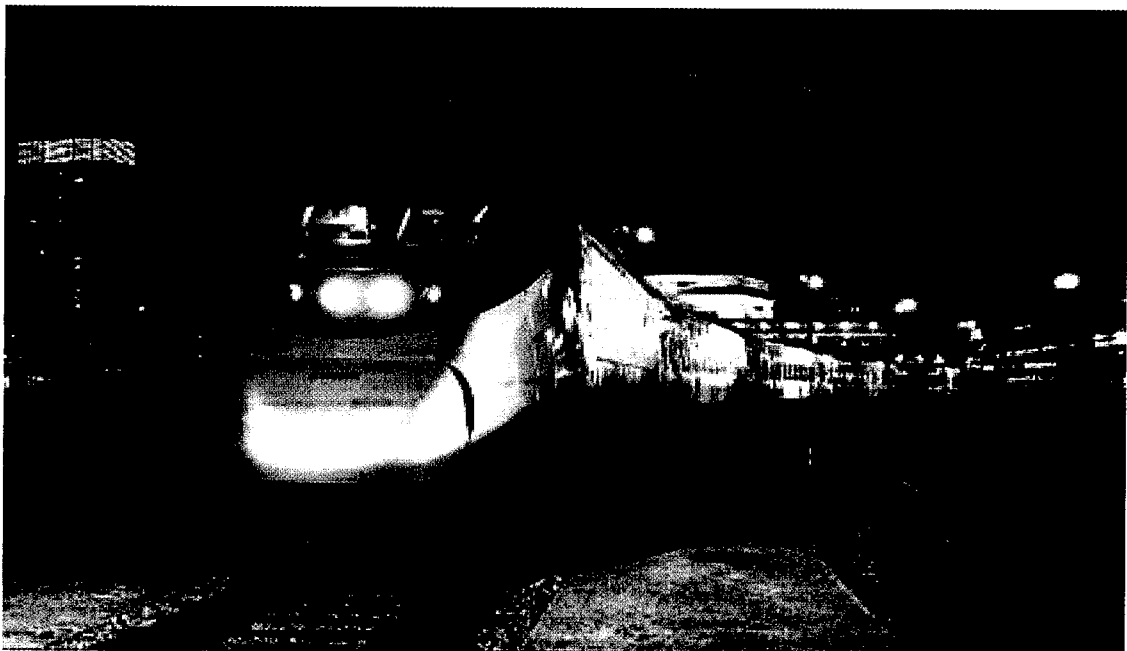
Passenger Railroads

With ongoing support from the Federal Railroad Administration (FRA), Operation Respond has made great strides in including North American passenger railroads in the OREIS software program. The inclusion of Amtrak in the system in 1998 was a pivotal point for ORI, and encouraged and reassured the subsequent participation of many other passenger-carrying railroads.

OREIS™ provides emergency responders with schematic information and equipment diagrams of rail equipment. These diagrams are extremely useful when responding to an incident, accident, or derailment involving passengers on a North American railroad. The schematics highlight locomotive and car interior and exterior views, seat configuration, emergency exits, and the location of electric and fuel sources. Most of the schematics include several views and color layouts, as well as a zoom option that allows responders to concentrate on specific problem areas.

ORI has aggressively pursued carriers in the passenger rail industry for inclusion in OREIS™. Currently, OREIS™ encompasses schematic information for Amtrak, Caltrain, Long Island Railroad, Maryland MARC, New Jersey Transit, Virginia Railway Express, and VIA Rail Canada.

Washington, DC's WMATA metro system has recently been included, representing a total saturation of OREIS in that area. GO Transit also recently added exceptionally detailed diagrams for their rail fleet, complete with additional emergency guidance specific to GO cars. These schematics will become the expected standard for future submissions.



Along with the inclusion of equipment schematics, Operation Respond offers a number of community outreach options for participating carriers. These options include press releases and events to alert the local media and response community of the partnership, the fulfillment of new Federally mandated emergency preparedness rules, and promotional programs that include software donations, mass scale distribution, and emergency response training to local agencies.

Operation Respond's goal is to eventually encompass all passenger-carrying railroads, metro and light rail systems in North America. This dream is being realized through the cooperation and preemptive safety concerns of the FRA and the carriers involved in and supporting the program.

Short Lines

The Operation Respond program encompasses all the Class One Railroads operating in North America. This accomplishment makes OREIS™ a tool that can link responders to the HM files of every major freight-carrying railroad in the United States and Canada.

These Class One railroads, while representing the majority of chemical transport by rail, are by no means the only freight railroads that haul HM dangerous commodities. The American Short Line and Regional Railroad Association reports that there are approximately 500 short line railroads in the United States. These small freight carriers comprise a vast network of rail lines across the country.

Operation Respond is working on a FRA-supported effort to incorporate short line and regional railroad database connections into OREIS™. Short line and regional railroads generally handle their HM data files in one of three ways; internally, through an external data management firm, or through a Class One carrier's database. As a first step in the short line inclusion effort, ORI has targeted those carriers that rely on Class One railroads for data support, due to the ease with which they can be included in the system.

The most recent addition was the Montana Rail Link, a freight railway that operates 950 miles of track in Montana. Montana Rail Link also initiated a community outreach project with ORI that resulted in the distribution of 5 sets of software to emergency dispatch centers in Montana, along with subsequent training on the system. Other recent short lines to be included in the system are the Wisconsin Central Railroad and the Utah Railway.

Operation Respond Awareness and Outreach

In an effort to make the Operation Respond program more visible in the transportation industry, a number of proactive steps were taken by Operation Respond with support from the FHWA.

This effort focused on highlighting the features, benefits and relationships (especially the safety impacts) inherent in Operation Respond. The following steps were taken;

ORI has

- facilitated working relationships with organizations and agencies that use OREIS™,
- targeted local communities for distribution efforts of OREIS™,
- enhanced current partnerships with the International Association of Fire Fighters, the International Association of Fire Chiefs, and the Congressional Fire Services Institute,
- expanded the OREIS™ user base through direct outreach to additional fire departments, police departments and EMS agencies, and
- development of Operation Respond program information and technical advisories, press conferences, briefing materials, research projects, newsletter and supplemental information. This also includes media kits for trade, professional, general and government press.

The end product was a comprehensive community relations and awareness package that helps first responders, local officials and industry representatives sell the program to the communities they serve.

One of the principal objectives of ORI is to initiate strategic alliances with a number of potential partnership organizations that will strengthen and expand the Operation Respond concept and program throughout North America. ORI has worked hard to forge relationships in the transportation industry and emergency response community with organizations such as:

The United Transportation Union, the International Association of Firefighters, the International Union of Police Associations, the International Association of Chiefs of Police, the National Volunteer Fire Council, and the International Association of Fire Chiefs.

A key component of this effort was the development of a communication kit to promote awareness of the program to the media and interested carriers. The following are facets of that communications package:

- ORI provided complimentary outreach methods for the emergency response community, including the electronic news releases, newsletters, surveys, etc. that encourage two-way communication,
- developed a full-service Web site that has generated considerable interest in the program,
- created a comprehensive tracking database system for current users that will track statistical information about OREIS™ users,
- working with participating carriers, ORI promoted the program to local citizens. Operation Respond facilitates a natural safety partnership between public agencies and private industry,
- worked with training institutions and publishers in the field of HM response to broaden exposure within their programs and publications,
- worked aggressively with transportation trade publications to further increase the aware

Chemtrec and TRANSCAER

A step forward for Operation Respond occurred with the development of a partnership agreement in late 1997 with the **Chemical Transportation Emergency Center (CHEMTREC)**. This pioneering agreement will foster, among other things, a joint incident notification process that will allow OREIS™ users to input essential incident descriptive information in a standard screen format directly to the 24-hour CHEMTREC Center. This will save valuable time in the incident response process by allowing responders to merely click on the appropriate screen and notify Chemtrec of the essential location, participants, and nature of the emergency.

Another major accomplishment came in 1999 when Operation Respond participated in the TRANCAER “Whistle Stop Tour,” in association with the Norfolk Southern. On the tour, from October 4-9, 1999, Operation Respond staff travelled to Wilmington, DE, Garrisburg, PA, Pittsburgh, PA, Cleveland, OH, Columbus, OH, and Charleston, WV giving software demonstrations and spreading the word about the Operation Respond program.

Salt Lake City 2002 Winter Olympics

Operation Respond has embarked on a project with the Utah Department of Transportation and Intelligent Transportation Systems to help prepare responders in the Salt Lake City area for the increase in passenger rail travel that is sure to accompany the 2002 Winter Olympics. The goal of the project is to prepare responders to deal with any safety or security issues that could arise on the railroad or highway as a result of the event.

ORI is working with the Salt Lake Olympic Committee, the Railroad Operation Safety and Security Committee, the Utah Department of Transportation, the Federal Railroad Administration, and the Federal Highway Administration on a program to meet the specific requirements of this event.

Operation Respond is refining the OREIS™ software to fit the special needs of the Olympic Committee. Besides containing equipment diagrams for Amtrak trains that will carry Olympic attendees, OREIS will also incorporate schematics for the Utah TRAX commuter system, and a database connection to the Utah Railway. The refined software will be distributed to fire fighters and police departments in areas surrounding the Olympic Games, and to the UDOT Traffic Operations Center.

In addition to the software, ORI will be conducting a series of safety and security training classes to emergency responders in Utah. The classes will focus on the utilization of OREIS™ when confronted with an issue involving hazardous materials cargo or passenger equipment, antiterrorism and security. The class will be aimed at, but not limited to, emergency dispatchers, emergency response field personnel and agency or carrier personnel.

ORI will also be holding a number of community outreach programs and emergency response demonstrations to announce the deployment of the project. ORI's involvement in the project is scheduled to be complete one year before the start of the games.

Private Sector Initiatives

Amtrak Northeast Corridor Project

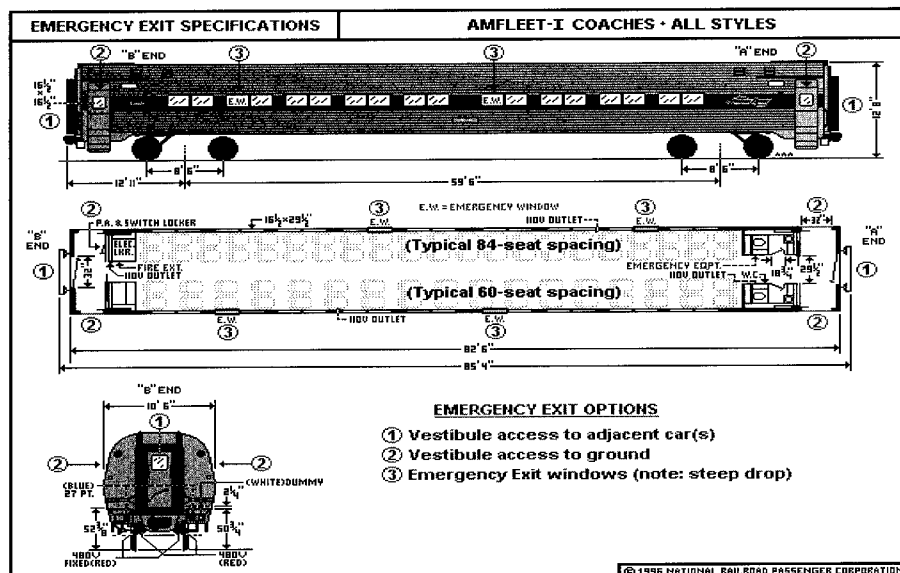
Amtrak has supported the Operation Respond program from nearly the beginning. Through a series of cooperative projects and partnerships, ORI and Amtrak have executed extensive OREIS™ software distribution and passenger-train emergency response training throughout the Northeast United States.

Amtrak and Operation Respond formed a partnership in 1998 to include Amtrak schematics in the OREIS™ software program. Amtrak later added schematic information for their new ACELA high-speed trains into OREIS™ to insure that responders had access to this valuable information. This spurred a cooperative effort to promote improved emergency response and safety on passenger rails.

Amtrak donated copies of OREIS™ to dispatch centers and ORI trained emergency responders along the Northeast Corridor, an Amtrak-owned and operated line extending from Washington, DC to Boston. The program has resulted in the distribution of 120 sets of OREIS™ to emergency response agencies between Washington, DC and Boston.

Amtrak also contracted ORI to train emergency fire and police departments in the area surrounding the Northeast Corridor to properly respond to an incident involving Amtrak trains. The training, a security and safety course conceived and developed by ORI, caters specifically to the trains that run this route.

The safety and security training course taught in this project was a specialized educational/development class for emergency responders, especially firefighters and police. All of the instructors are emergency response professionals, many of whom have firsthand experience in dealing with passenger train incidents in the Northeast Corridor.



The course focused on size-up, recognizing and isolating hazards, forcible entry, and patient extrication and removal. Communications at the scene and the roles of responders during an incident will be covered, as well as scene and evidence preservation. The project resulted in the training of nearly 11,000 responders in over 550 classes.

Operation Respond and Amtrak are currently in negotiations to extend the Northeast Corridor project to other sections of Amtrak owned and operated rail line.

National Volunteer Fire Council Project

Operation Respond has entered into a partnership this year with the National Volunteer Fire Council (NVFC), a nonprofit organization that represents the interests of the volunteer fire, EMS, and rescue services in the national and international policy making arenas.

The ORI/NVFC partnership involves the distribution of the OREIS™ software program to emergency responders in target areas. The initial agreement covers software distribution to four U.S. states; Maryland, Pennsylvania, Georgia, and Washington. This pilot program, which will help ORI reach its short-term goal of over 3,000 installations, is expected to lead to a national distribution plan of OREIS™ by the NVFC.

Under the program, the NVFC will provide emergency dispatch agencies in the four targeted states with a free starter set of OREIS™, with complete service for one year. Upon acceptance of the free software, the participating agencies agree to purchase one additional year of OREIS™ service after the initial program runs out. This should allow sufficient time for the agencies to fit OREIS™ into their budget.

Operation Respond is working cooperatively with the NVFC State Directors to determine where the software should be installed in the pilot states. ORI is concentrating software distribution along heavily traveled highway and railway corridors, highlighting the usefulness of OREIS™ when responding to an incident.

The software distribution will begin when the new version of OREIS™ is commercially available in Fall 2000.

Emergency Responder Training

In addition to community-outreach related training conducted through cooperative agreements with carriers, Operation Respond also held a series of passenger-train emergency response courses for responders and railroaders.

The classes were designed to teach emergency personnel and train and engine-crew members how to work cooperatively when dealing with passenger train incidents.

The goal of the course is to ensure that any person who responds to a passenger train incident has the knowledge and experience to safely handle that problem. It is very important for crewmembers to know how to coordinate with arriving responders. This year's sessions were held between April and June at ORI's regional training facilities in Mercer County, New Jersey and Fairfax County, Virginia. These are in addition to a five-day program now offered at Texas A&M in College Station, Texas.

Railroaders and emergency responders receive the training side-by-side to teach coordination in rescue operations. Students participate in hands-on exercises, utilizing actual railroad equipment to simulate various situations and incidents. The course also covers the utilization of OREIS™, and its role in emergency response.

The training helps fulfill new passenger train emergency response rules published by the Federal Railroad Administration. Knowledgeable and experienced instructors, representing the emergency response community and railroad industry, teach the course.

The passenger-train emergency response training comes as a joint program facilitated by ORI, in partnership with Amtrak, commuter railroads, freight railroads and railroad labor organizations.



International Activities

Comprehensive Border Integration

Operation Respond and FHWA have prioritized a focus on the design and development of an integrated border emergency information system module for the OREIS™ software. This module would include additional databases and access programming that would be of particular importance to border officials, brokers, and carriers involved in international transportation.

Laredo-Nuevo Laredo/Columbia on the Southern border, and Buffalo-Niagara Falls on the Northern border were selected as the Pilot Integration Sites for purposes of the development of the border module for OREIS™.

Southern Border Progress

The following strides have been made in accomplishing this vision in Mexico:

- The KCS/TFM is working with Operation Respond to have full capability for OREIS™ through from the Texas border to Mexico City.
- Operation Respond has worked closely with the agencies having jurisdiction at the Laredo-Nuevo Laredo/Columbia crossings, including commercial and governmental interests involved in the North American Trade Automation Prototype program (NATAP).
- Operation Respond has been working closely with the Laredo Fire and Police Departments, fostering support of the program concept and software in the area.
- Operation Respond has been coordinating efforts with those carriers involved in OREIS™ that serve the border, including the Union Pacific, the BNSF, the Kansas City Southern, and Yellow Freight.
- Operation Respond has been working closely with the Mexican Government on a local and national level, including the City of Nuevo Laredo and its Fire Department, Proteccion Civil, the State of Tamaulipas, and the Federal Police.

In September, 1997 arrangements were completed with the Mexican Federal Road Police to have Operation Respond installed in their Dispatch Center serving the four northern Mexican states: Tamaulipas, Nuevo Leon, Coahuila, and Zacatecas.

The OREIS™ software is now in place in at least one location in nearly every intermodal

crossing along the Southern Border, from San Diego, CA to Brownsville, TX. A Spanish version of the software has also been developed. It is now recognized as a significant tool with which to enhance hazardous materials safety in cross-border transportation, and helps facilitate the achievement of other NAFTA goals. Further, the US-Mexico Chamber of Commerce has recognized the value of Operation Respond in promoting safe transportation operations between the two nations, and continues to provide strong support and encouragement for the program.

Northern Border Progress

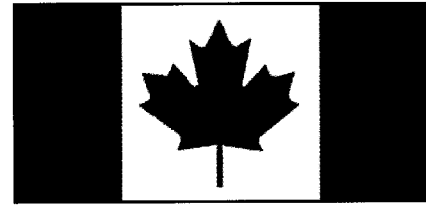
The Buffalo-Niagara Falls corridor is a major thoroughfare for chemical industry traffic, involving both truck and rail carriers in the U.S. and Canada. Its key location in Western New York state, its proximity to Toronto, and its location along the routes to the upper Midwest and the Great Lake cities of Cleveland, Detroit, and Chicago provide a mix of local cross-border and long distance hazardous materials traffic. Yellow Freight has a major terminal in the area. The principal rail carriers serving the region, Norfolk Southern, CSX, Canadian National, and Canadian Pacific are all participants in the Operation Respond program. Also, VIA Rail Canada is working with the Operation Respond program at this critical border location.

The Niagara Frontier area, and specifically Buffalo, NY has also provided an excellent test bed to allow Operation Respond to conduct development of an Integrated Border Emergency Information System and to fine tune OREIS™ as an effective emergency response tool.

Initially, in 1997, U.S. Customs included a pilot OREIS™ installation on their LAN at Buffalo, a stand-alone version at the Lewiston, N.Y. Inspection Station, and another five sets at other New York State border crossings with Canada.

ORI notes that the major concern expressed by carriers relating to the US Customs border integration is the potential utilization of OREIS™ by Customs as strictly an inspection tool. Customs is working with ORI to establish the linkages and associated training in a manner that would alleviate these carrier concerns.

ORI's main objective was to integrate OREIS™ with the essential ITS architecture supporting preclearance and other steps to speed the flow of international traffic while retaining maximum safety protections.



Operation Respond in Canada

Transportation companies in Canada have proven their strong commitment to preemptive safety and assisting emergency responders in the communities they serve. Canadian railroads and motor carriers have been working in partnership with Operation Respond to provide new emergency response tools for fire and police departments.

Operation Respond's work in Canada began in 1998 when connections were established with the Canadian National and Canadian Pacific Railroads, providing hazardous materials contents verification. Following this initiative, which was partially funded by Transport Canada, VIA Rail Canada joined the program.

In 1999, VIA Rail added equipment diagrams for their entire fleet of railcars and locomotives to OREIS™. This was the first passenger-carrying railroad outside of the United States to join the system.

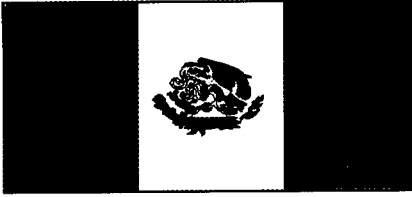
This partnership led to a VIA Rail community outreach project, whereby VIA donated 28 sets of OREIS™ along their lines between Windsor, Ontario and Quebec City. This project was well received by the Canadian press, emergency response community, and transportation industry.

In addition to the software distribution, the VIA/ORI project involved a series of emergency response training classes to those agencies that received the software. The training consisted of ORI's emergency response experts teaching head dispatchers at each agency how to train their coworkers on the system, its functions, and real-life applications.

Also in 1999, ORI, along with the St. Catherine's Fire Department, the Niagara Region Mutual Aid, the Canadian National Railway and the International Association of Fire Fighters, conducted a very successful emergency response training drill. In this drill, OREIS was tested as part of a full-scale mutual aid exercise.

In early 2000, VIA extended their partnership with ORI and donated copies of OREIS™ to responders along a VIA Rail-operated subdivision that, in addition to carrying passenger trains, is used by freight railroads to haul hazardous materials. The first leg of this project, completed in May, resulted in the distribution of 18 sets of OREIS in Southern Ontario. Training for this project is currently in the developmental stage.

In accordance with ORI's growing presence in Canada, GO Transit submitted a series of schematics for their rail fleet to ORI earlier this year. These schematics not only include CAD-designed equipment diagrams, but additional emergency guidance specific to individual GO cars. GO Transit buses and stations will be included in the system in the near future.



Operation Respond in Mexico

Operation Respond has been furthering its presence in North America by expanding the program to parts of Mexico, forging a partnership with the largest rail carrier in the country; Grupo Transportacion Ferroviaria Mexicana, S.A. de C.V. (TFM). TFM controls several sections of the newly privatized Mexican railroad, including the Northeast Railway—the primary rail route in North Mexico.

The TFM-operated Northeast Railway is a 2,661-mile line that runs from Mexico City to Laredo, TX. The line sees 40% of Mexico's total rail cargo, and 50% of U.S.- Mexico trade, making it the most traveled and important line in the Mexican rail system.

Upon taking control of the line, TFM made numerous improvements. They installed new locomotives, sidings, and a computerized service center. They also began installing some new technology, like Operation Respond's OREIS™ software program.

TFM contracted ORI to distribute a recently translated Spanish-version of the OREIS™ software program along the Northeast line of the Mexican Railroad. In addition to the software, ORI provided the operations centers along this route with new computers for accessing the software.

The project has resulted in the deployment of 14 computers equipped with OREIS™ to dispatch centers along the US/ Mexico border, and between Laredo and Mexico City. Negotiations to extend the distribution are expected.

The ORI/TFM partnership comes as a collaborative effort between the two organizations to improve community relations and safety along the Mexican railroad. ORI will also conduct a series of training classes for emergency workers along the corridor. The course will concentrate on the different aspects of emergency response, teaching police and firefighters how to properly deal with rail and hazardous material incidents.

The project was unveiled at a press conference in Nuevo Laredo on December 8, 1999. Held in the office of Presidente Municipal de Nuevo Laredo C.P. Horacio Emigdio Garza Garza, the event was covered extensively by both the American and Mexican media.

ORI has also recently entered into negotiations with Capufe, the Mexican federal agency that oversees and controls the toll road system in Mexico. Operation Respond and Capufe are working to incorporate the Mexican toll road network into OREIS™.

Evaluations and Incidents

Because it is used in real-life emergency incidents, when responders are often faced with dangerous substances and situations, it is important to Operation Respond to insure that, in a true emergency, OREIS™ will perform to the full extent of its capabilities. For this reason, Operation Respond has gone to great lengths to prove that OREIS™ is effective as a time saving emergency response tool. Through a number of both public and private evaluations, field tests, and use in actual incidents, OREIS™ has been proven to be able to provide emergency responders with accurate hazardous materials content information and other important resources in a timely and effective manner.

Dr. Sondip K. Mathur of the Public Policy Center at the University of Utah prepared a study and evaluation of the OREIS™ system in October of 1998. The study, entitled “Evaluation of the Operation Respond Program in a Field Setting,” found favorable results through extensive tests and study of the software. Dr. Mathur found that **“OREIS™ provides early confirmation of first responders’ field observations and is likely to increase confidence during incident management. The Philadelphia County incident commander indicated that OREIS™ is likely to cut routine response times by 15 to 20 minutes.”**

The effectiveness of OREIS™ has also been proven in the field during actual incidents, where responding agencies were connected to the OREIS™ software and used the system to obtain hazardous materials content information about a disabled freight train or tank truck, or equipment diagrams for passenger railroads. The following is a sample of incidents where OREIS™ was used to obtain important emergency information:

- **June 28, 2000, Genessee County, NY**—Disabled tank truck. OREIS™ was used to obtain HM content information.
- **July 19, 1999, Portland, OR**—Passenger locomotive fire. Schematics contained in OREIS™ were used by response team.
- **January 7, 1999, Raleigh, NC**—OREIS™ was used to verify contents of freight cars.
- **April 13, 1998, Pittsburgh, PA**—Passenger train struck a derailed freight train. OREIS™ was used for schematic information.
- **March 31, 1998, Lynchburg, VA**—Freight train derailment. OREIS™ was used for HM content verification.

Conclusions and Lessons Learned

LESSON ONE: *"Design from the bottom up"*

Designing an effective approach to emergency response has more potential for meaningful impact if the emergency response community is involved throughout the entire process, from concept to execution. Operation Respond has used "focus groups" in Houston, Buffalo, and San Diego as the principal designers of the software and for the development of its associated distribution mechanisms. Whatever is designed clearly needs to function in a real-world environment, and a "bottom up" approach gives the best possible assurance this will happen by engaging the right stakeholders in system development early on.

LESSON TWO: *"Stay focused"*

The information needs of the emergency response community are dynamic and extremely critical and time-sensitive. As each phase of the FHWA/ORI partnership moved and progressed, Operation Respond was forced to continually reexamine its role. In addition, other, existing emergency response organizations questioned different aspects of Operation Respond's proposals or product offerings.

The challenge throughout has been to stay focused on the "first responder." This is where Operation Respond and its constituent groups have long recognized a persistent void in information resources and access. Providing easy-to-use links or establishing relationships with other hazardous materials information providers, such as Chemtrec, CAMEO, and CHRIS is an important information transition feature of Operation Respond's software. This creates a suite of information for the first responder, eliminating confusion and duplication, while enhancing service.

LESSON THREE: *"Each party must have a role"*

In the Operation Respond public/private partnership, each member has an important role in assisting the program to perform its mission. FHWA, through the ITS Program, is extending the technological envelope, and is bringing practical technology to emergency response. This is a critically important role, and must be accomplished in a progressive manner, as not all sectors of emergency response are technologically equivalent. Also, being technologically equivalent means that resources at the local level need to be allocated. In many cases, local budget processes tend to place lesser priority on technological equivalence. Notwithstanding these practical issues, FHWA clearly needs to continue its leadership role in developing and deploying new technology useful to emergency incident response in traffic and transportation systems deployments. Other agencies, like the FRA have made Operation Respond a critical part of nationally mandated emergency preparedness rules.

Private sector transportation providers, i.e., railroads, motor carriers, airlines, water carriers, etc. have a recognized role in furnishing critical information to emergency responders dealing with an accident or incident. Emergency responders must know what they may be confronted with as they approach the scene. Proactive transport carriers have stepped up and recognized their responsibility. For these carriers, Operation Respond has become an important component of their community outreach activities, and their partnerships with Operation Respond recognize this critical aspect. In fact, to enhance system safety during the transportation of hazardous materials, many carriers have included Operation Respond as part of their CMA-approved Responsible Care programs.

LESSON FOUR: *"Partnerships are critical to success at the border"*

For Operation Respond, it was immediate acceptance in Mexico. The border areas are typically overwhelmed with traffic, and emergency response resources, particularly firefighters, are strained, as authorities deal with the economics of phenomenal growth in cross-border trade. Operation Respond has been warmly received, and the effort to translate the OREIS™ software into Spanish was widely appreciated by Mexican authorities.

In Canada, the situation was somewhat more complicated. Overseas success hinged on forming partnerships with organizations in the transportation industry, emergency response community, and Government. However, after a series of drills, exercises, and presentations with local responders, a realization of the benefits of the system has been established within the emergency response community. ORI began to notice a substantial improvement in the acceptance of Operation Respond in Canada, thanks to the active support of VIA Rail Canada, the national rail passenger service corporation, the International Association of Fire Chiefs, and the International Association of Firefighters. VIA Rail Canada and Transport Canada now are full members of the Operation Respond International Steering Committee.

LESSON FIVE: *"Invite all parties to the table"*

One thing that has been essential to the Operation Respond concept from the beginning has been the Operation Respond International Steering Committee. This is the principal reason that OREIS™ has established itself within the emergency response community, and has received the strong support of the carriers. The Steering Committee has representation from all national first responder organizations – fire, police, EMS – as well as carriers, government, chemical manufacturers, and private citizens. This Steering Committee is where Operation Respond's decisions are made. Members have a direct responsibility to liaison with colleagues as well as their home organization to reach out and encourage support of the program. This interface is critical and is the glue that holds Operation Respond together.

LESSON SIX: *"Minutes make the difference"*

Based on a number of supervised drills and exercises, Operation Respond has been shown to consistently cut an average of 15 minutes off the hazardous materials identification at an incident. To an emergency responder at the scene, these are valuable minutes, positively enhancing community, traveler, and responder safety during an ongoing hazmat or rail passenger incident.

LESSON SEVEN: *"Motor carriers must incorporate technology"*

For the Operation Respond program, the true breakthrough with motor carriers will come when a hazardous materials guidance system is incorporated as part of some larger technological investment that positively impacts the carriers' bottom lines. FHWA is pursuing this strategy within the Cargo*Mate system prototype and in the activities of the Intermodal Freight Technology Working Group. Consistent with ITS architecture, this is an appropriate course, as long as the larger technology application catches on within the motor carrier industry. Operation Respond will continue to explore these opportunities in partnership with FHWA, recognizing that OREIS™ is really a value-added to larger, more comprehensive applications of technology in the industry.

Next Steps

Continually looking toward the future, Operation Respond has big plans for the expansion of the program, and the continual improvement of the OREIS™ software. Certainly the program will maintain its vision of safety first, carrier commitment and dedication to the first responder.

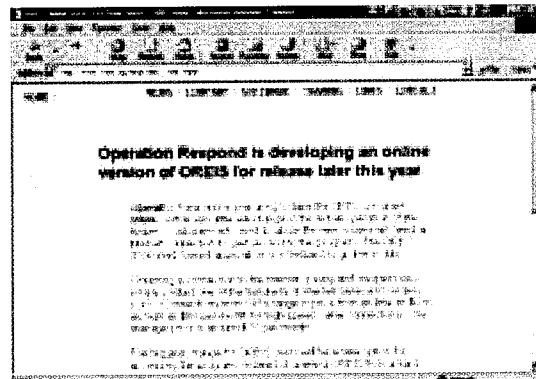
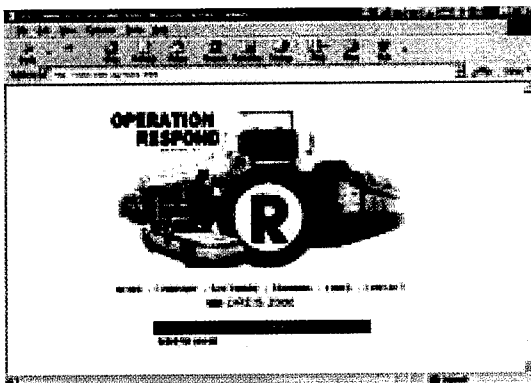
Operation Respond will continue to focus on encompassing the vast and complex transportation networks that comprise North America's motor carrier, passenger, and freight railroad systems. Ideally, OREIS™ will become an all-inclusive system, containing detailed information about every freight truck and train in operation at any given time. This will establish the system even farther as the single source resource for HM and emergency information when responding to incidents on highways or railroads.

OREIS v4.0i

On the immediate horizon, Operation Respond will be releasing an Internet-based version of OREIS™. Accessed through the World Wide Web, the application will require a password, but will function almost identically to the current system from the user's perspective. The OREIS™ 2000 Web-based application will be available in Fall 2000.

While keeping up with expanding technologies like the Internet is important to Operation Respond, so is the importance of protecting the integrity of the existing system. That is why ORI will continue to support the current CD-ROM version of OREIS™, including updates, after the Internet-based system is enacted.

The on-line version of OREIS™ will encompass all the safety and response features that customers have come to expect. The freedom of the Web will allow ORI to instantly provide customers with new features and updated information without the hassle of distributing and installing updated versions.



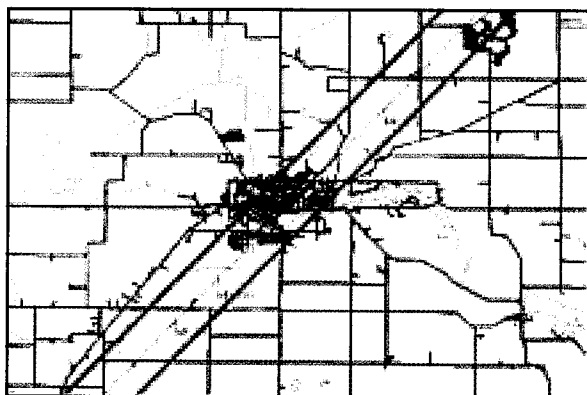
Emergency Access Application

In an effort to enhance rail passenger emergency response, Operation Respond is developing a software program that will advise emergency rescue crews as to the physical location of a train that has been involved in an accident or incident. The system will allow responders to pinpoint the exact location of an accident in order to minimize the damage caused by lengthy response time. Using a coordinated system of maps detailing streets, railroad features and landmarks, the software will virtually eliminate confusion caused by uncertainty regarding an accident's location.

The progress being forged by ORI is the next logical step in providing emergency responders with accurate and urgent information. The implications of this new technology are vast. Clearly, confusion or uncertainty over the exact location of a train in distress materially impacts timely emergency response. Prompt response to rail accidents is key to reducing the severity of injuries to passengers and employees, property damage, and collateral damage. Faster response time could mean the difference between life and death for passengers trapped or in danger.

Similarly, the new system would allow for more prompt response to freight accidents or incidents, where hazardous materials may stand as a major threat to the responders and the community. Integrated with the other OREIST[™] functions, this feature could significantly impact the ability of the emergency response community to successfully minimize damage from rail passenger and freight incidents. First responders can easily locate an accident, surmise it's potential danger, and act appropriately, all with the utilization of one program.

Using previously developed commercial technology, Operation Respond will design, develop, and apply this innovative application, making it available with a soon-to-be released update of the OREIST[™] software. Operation Respond is working in close cooperation with Amtrak and the Federal Railroad Administration (FRA) to improve the rail passenger emergency response process. The enhanced access technology is currently being developed and tested in the Detroit-Chicago High Performance Corridor.



DOT's Public Safety Initiative

Traffic Management Centers

Operation Respond is in the process of proposing a project to the FHWA that would make OREIS™ the standard in HM content verification for traffic management centers (TMC) in the United States. The project would include the development of a refined version of the software to meet the specialized, interoperable needs of the TMC.

Operation Respond's focus on the first responder has generated a unique, proven suite of stand-alone emergency response guidance information that is transferable to meet a variety of TMC/ITS requirements. Adoption of the OREIS™ software by TMCs would assist in maintaining the highest level of personnel safety while enhancing agency mission effectiveness. Because of its specific reliance on accepted international hazardous materials guidance, OREIS™ is well positioned to serve as a single-source, international platform of initial hazardous materials incident response guidance for North America.

The Operation Respond system contributes to the TMC/ITS objectives of applying technology to improve hazardous material emergency response to allow quick identification of hazardous materials involved in commercial vehicle incidents. OREIS™ can indicate, in the first few minutes, whether or not an incident is hazmat. Timely, accurate, and reliable information on chemical identification, chemical properties, and first response guidelines can ensure effective site management. Knowledge of what is at stake in regards to hazardous materials will allow more informed traffic management decisions to be made.

Further, OREIS™ fills gaps in the TMC architecture and plan by integrating hazardous materials information into the TMC structure, enhancing hazardous materials guidance for emergency responders, and providing essential emergency information about passenger and freight railroads.

Operation Respond software will assist state and local transportation and emergency personnel by having emergency guidance keyed to specific materials as part of an Electronic Data Interchange (EDI) system. This allows the appropriate emergency guidance to be linked to the item in the electronic shipping or inventory record as a "when needed" enhancement to that record. Interoperability is facilitated because ITS technologies are keyed to electronic records and information, allowing emergency guidance to accompany hazardous materials, thereby assuring greater public safety.

The universal implementation of OREIS™ into TMCs will promote interoperability and conformity across the board by supplying a uniform software application to all TMCs, providing operators and responders with identical information and guidance. This promotes enhanced communications between TMC elements— like fire, police, medical, highway, and local government— because they are better equipped with quick and accurate information when dealing with an incident.

OREIS™ enhances communications between on-scene responders by improving the quality and quantity of key information received. ITS users and public safety officers use OREIS™ as a briefing and training tool keyed to awareness and initial actions for their personnel involved in handling hazardous materials in any stage of a customer logistics system where surface transport is involved. This is potentially lifesaving in areas where those personnel may be the only emergency resource available, such as in remote locations or on rural interstate highways. Such information may also be invaluable to medical personnel, in assessing the proper course of action for treatment of injuries where hazardous materials are involved.

All of these advantages ultimately result in improved traffic management; the primary goal of the TMC. Timely and accurate information about hazardous materials content and guidance, in addition to detailed schematic information about passenger trains, will facilitate the incident management process, giving decision makers the information they need to best assess and control incidents. The receipt of integral information can ultimately lead to the minimized need for road closures in complex urban environments, as well as a reduction of delays in suburban and rural arterial roads. OREIS™ speeds up and facilitates the incident management function by simplifying and expediting the informational flow process.

The Operation Respond system is beneficial not only in terms of function, but also as a cost-effective method of hazardous materials reference and guidance. The OREIS™ software program for locally networked computers is relatively inexpensive, and does not require expensive support hardware and equipment. The system needs only a standard PC and modem to fully operate, and will shortly be enabled as a Web-based system. The program is easy to administer and master, and can create a significant reduction in consequential liabilities by facilitating incident management.

Accordingly, national implementation of OREIS™ at TMCs is expected to require a minimum level of federal funding.

OREIS is available to emergency response agencies for an initial price of \$695. Contact Operation Respond at (202) 548-0935 to order.



U.S. Department of
Transportation
**Federal Highway
Administration**

**To access an electronic version of this publication
and other OPS related publications:**

<http://www.ops.fhwa.dot.gov/freight/>

**Publication No. FHWA-OP-00-029
HOFM/8-00 (1M)QE**