ITS Sheet 6

Speeding Freight to its Destination

NATIONAL ASSOCIATIONS WORKING GROUP FOR ITS

ITS Puts Freight Information Ahead of Freight Movement

During the past 10 years the volume of intermodal freight movement (using more than one form of transportation to move freight to its ultimate destination) has doubled and is expected to double again in the next decade. This growth increases congestion, which puts a strain on existing ports and terminals and influences the reliability of highway and rail access. If shippers can't predict when their goods will arrive at their destination, and receivers don't know arrival times, customer satisfaction suffers. The industry increasingly relies on just-in-time inventories, so reliability and predictability are critical characteristics of freight transportation. If the problem of congestion at the ports and terminals is not addressed, the safety, reliability, and responsiveness of the intermodal freight system will continue to deteriorate, adversely effecting the nation's economic growth and national security.

Intelligent transportation systems (ITS) and advanced communications and information systems can provide real-time information on intermodal freight operations, and real-time information on congestion. These technologies can help the industry integrate operations across the supply chain.

"Sharing information about congestion and operations across the intermodal freight system is critical to regaining capacity and reliability."[1]

U.S. DOT ITS Projects

How can ITS technology benefit the intermodal freight industry? The U.S. Departement of Transportation (DOT) recently announced two intermodal freight operational tests. Jointly sponsored by the Department, the Illinois and Washington DOTs, and the American Trucking Association (ATA) Foundation, these tests are cost sharing efforts that build on earlier successes in this arena. They will be conducted in the Chicago, IL, and Newark, NJ, areas, and in the Pacific Northwest.

The first project, "An Integrated Cargo Information and Security System for Intermodal Distribution Channels," will improve operational efficiency for freight shippers and operators, and builds on an earlier Federal Aviation Administration (FAA) program at Chicago's O'Hare Airport. That program used biometric "smart cards" to confirm the identity of the driver using a stored thumbprint and to provide information about the seal on the cargo the driver was transporting. The purpose was to improve security of freight movement into and out of the airport. Using the same security technologies, the new project will create a secured multimodal electronic cargo manifest and provide for automated data transfer across transportation modes and political jurisdictions. Thus a container of freight and its drivers will be tracked all the way from the manufacturer to the hand-off to the customer. As in the E-ZPass system, readers along the route will be able to track the path of the freight. Not only will interested parties be able to know where the freight is at any point in time, but metropolitan planning organizations will be able to

ITS can help reduce congestion at shipping points like this one.

U.S. Department of Transportation

get real-time data on the time it takes freight to flow from point to point. The beta-test will be conducted at O'Hare Airport in Chicago using 10 manufacturers, 10 to 15 trucking companies, and 5 to 10 air cargo carriers and receivers. Upon successful completion of the test, the project will expand to Newark, tracking freight flowing between the Newark and Chicago areas.

The second project, jointly sponsored by U.S. DOT and Washington DOT, grew out of an earlier program that used electronic container seals to monitor the security of containerized freight across international borders and between trucking and marine carriers. This system provided information to U.S. Customs and other Federal agencies that is helping automate the clearance and credentialing of commercial vehicles through ports and terminals. Technology such as electronic seals, transponders, and wireless GPS devices should help improve, augment, and reduce resources needed to collect data and clear freight at the borders. Until now, a seal has not been found that meets the requirements of U.S. and Canadian customs officials. One objective of this project is to find an electronic seal (tag) that will satisfy their requirements. The new field operational test (FOT) in the Pacific Northwest along the Interstate 5 corridor will include three test systems, and will link public highway ITS technology with private port-side electronic data interchange (EDI). The tests will (1) use disposable electronic container door seals to track containers in the port and along the highway; (2) use traveler information, such as Internet-based video of access roads to port gates, to provide real-time information about congestion along roads leading to the port; and (3) link different intelligent transportation systems in the area to provide information to support local and regional freight movement planning.

The first project addresses efficiency and security of freight movement from manufacturer to the customer. The second addresses efficiency and security of freight movement across international borders among trucking and marine carriers. The purpose of both is to decrease congestion, and thus operating costs, by providing information that allows freight movement organizations to identify and avoid transportation bottlenecks, thereby enabling the industry to make the most of the Nation's existing transportation facilities. A by-product will be real-time information for planners to help them maintain and build more efficient transportation networks.

ITS will be the key to accommodating the growth of intermodal freight operations. It can help in many critical areas:

- Avoiding congestion,
- Expediting regulatory clearance procedures,
- Monitoring the movement of containers as they change transportation modes, and
- Monitoring container seals to ensure integrity of the loads.

Federally sponsored ITS field operational tests are demonstrating that ITS is ready now to help in the critical area of intermodal freight operations.

1 *Challenges and Opportunities for an ITS/Intermodal Freight Program*, Cambridge Systematics, Inc., February 1999.

For more information...

Mike Onder
Office of Freight Management and Operations
Federal Highway Administration
400 7th St. SW
Washington, DC 20590
(202) 366-2639

U.S. Department of Transportation

Publication No. FHWA-OP-01-013

Produced by the Federal Highway Administration and the Federal Transit Administration for use by members of the National Associations Working Group for ITS