EPIC

Expedited Processing at International Crossings

EVALUATION FINAL REPORT

September 1998

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The Expedited Processing at International Crossings Field Operational Test sought to demonstrate the potential to increase productivity for motor carriers and state administrators by automating the border crossing credential and permitting process.

EXECUTIVE SUMMARY

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This executive summary presents an overview of the Expedited Processing at International Crossings (EPIC) Field Operational Test (FOT).

Overview

The EPIC focus was on the commercial vehicle transport component of international border crossings at the Nogales, Arizona port-of-entry. Commercial vehicle transport included state border crossing requirements for motor carriers, trucks, trailers, and drivers. The goal of EPIC was to expedite the border crossing process by, 1) providing for electronic pre-clearance for State of Arizona entry requirements of carriers and drivers and, 2) providing Nogales border traffic congestion and queuing information to carriers and shippers. Arizona administrative requirements for commercial vehicles include: vehicle registration, safety verifications, fee payments, tax and insurance compliance, and permit issuance.

Trucking is the dominant mode of freight transportation between Mexico and the United States. Trucks carry over 85 percent of the $100 billion in trade between the two countries. State agencies responsible for commercial vehicle border crossings are faced with the challenge of accommodating increased traffic with limited resources. While working to quickly process border traffic, state officials must ensure that commercial vehicles have required credentials and pay all applicable Arizona fees and taxes. Motor carriers are responsible for ensuring their shipments cross the border without any delay caused by failure to meet regulatory and permitting requirements.

Arizona Commercial Vehicle Border Crossing Process

The Arizona Department of Transportation (ADOT) is responsible for enforcing Arizona laws and regulations pertaining to the truck, trailer, and driver. This includes state permitting requirements, insurance, safety enforcement, commercial drivers license, weight restrictions, and collecting all applicable fuel taxes and registration fees. Trucks registered in Arizona (those with an Arizona license plate) do not need to purchase single tip permits. During the agricultural season (November-April), ADOT estimated that on average, about 70 percent of commercial vehicles crossing the border through Nogales were Mexican registered carriers and required a single trip permit to enter Arizona. Because most of the vehicles that require single trip permits are agricultural haulers this figure varies by season. During the summer months the majority of the commercial vehicles crossing the border are registered in Arizona.

EPIC Background

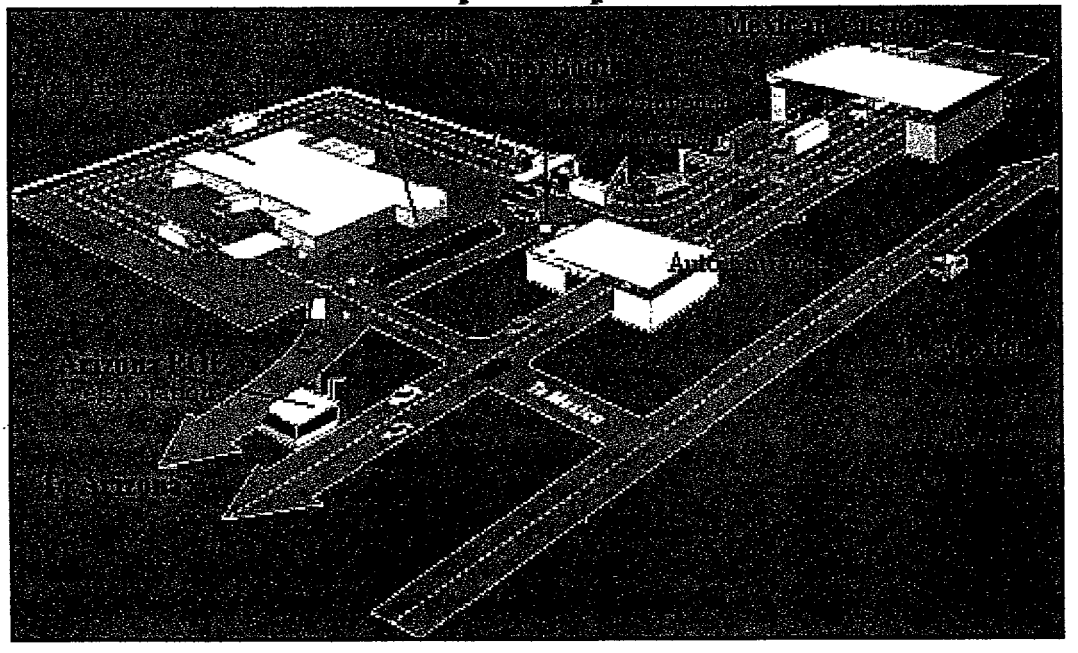
The original EPIC scope of work was changed several times in response to infrastructure and regulatory changes. These changes affected both the EPIC implementation and the evaluation process. These changes included:

U.S. Customs Withdrawal from EPIC: EPIC was originally envisioned as a means of improving both state and federal border crossing requirements. The U.S. Customs Service decided not to

participate in EPIC in order to focus on testing an in-house border crossing electronic system, the North American Trade Automation Prototype (NATAP). NATAP underwent testing in Nogales and at border crossings in California and Texas. The withdrawal of Customs from the EPIC FOT meant that EPIC would focus only on state border crossing requirements.

Infrastructure Changes.- In early 1998, after EPIC was operational, a "SuperBooth" and bypass lane for pre-cleared commercial vehicles were constructed just outside the Mariposa compound, located immediately before and to the west of the main compound entrance. The SuperBooth, now known as the Rapid Enforcement Lane, is staffed by both Customs and ADOT personnel, and is intended to expedite truck movement into the United States by eliminating the need to enter the compound. U.S. Customs determines which trucks can use the SuperBooth. Other trucks must proceed to the main entrance gates and enter the compound as normal. Once at the SuperBooth, trucks are either approved to proceed directly to the ADOT POE, or they are told to proceed back into the compound for further inspection.

Mariposa Compound



Arizona Regulatory Changes: Arizona eliminated the weight-distance tax and truck cab cards effective January 1, 1998. Previously, trucks were taxed, in part, based on their weight and the distance traveled in Arizona. Before the weight-distance tax was repealed, all trucks had to stop at the ADOT trailer located inside the Maripsosa compound. Arizona registered trucks had to have their cab card read electronically for each northbound border crossing to keep track of how many times each truck entered Arizona. Those trucks not registered in Arizona paid the weight-distance tax when they purchased their single trip permit at the ADOT trailer. In place of the weight-distance tax, Arizona raised registration fees and gasoline/diesel taxes.

The EPIC Solution

The EPIC solution combined proven, low cost technology (through use of existing commercial vehicle operations (CVO) software) and the use of the intemet to provide a blend of expedited processing and compliance monitoring.

EPIC System Overview: Each truck that participated in EPIC was equipped with a transponder mounted on the inside of the windshield. An identification number was then read by an automated vehicle identification (AVI) reader at the Mariposa compound to identify the truck, activate the EPIC system and communicate with the driver. Located in the ADOT office was the server for the EPIC system and a dedicated ADOT workstation. While the EPIC computer was checking the truck and driver's status to enter Arizona, the truck continued to the compound entrance or the SuperBooth. Before reaching the compound entrance, or the SuperBooth, the transponder in the truck's cab would either light up green or red. If the driver received a green light the truck could enter Arizona (after meeting all federal requirements). If the driver received a red light, the driver needed to check with an ADOT officer to resolve any problems before proceeding into Arizona. Combined, this hardware allowed the system to track a truck from Mexican Customs to the ADOT POE.

Participant Recruitment: The EPIC partners of ADOT, Lockheed Martin IMS, and the American Trucking Associations Foundation, identified and recruited companies and drivers. Companies were identified through meetings with the brokers' association and direct company contacts. Motor carriers who expressed an interest in participating in EPIC received an enrollment application. ADOT reviewed the applications for any continuing safety problems or overdue fee payments.

Carrier Enrollment: The EPIC motor carriers provided information on each individual truck they enrolled. This individual truck information included valid registration, proof of insurance, and a current safety inspection certificate. These credentials were checked at enrollment and periodically during the test. Trailers were enrolled in EPIC as well. Inspection data were provided for each trailer enrolled under a specific carrier account. Drivers were enrolled in a similar fashion. Drivers were required to have a valid current Commercial Driver's License (CDL), as well as a U.S. Customs compound card. After enrollment, a radio-frequency transponder was issued to the carrier to be installed behind the windshield of each owned or leased truck that participated in EPIC.

Pre- Shipment Procedures: Once a shipment was ready for transport from Mexico to the U.S. (this test was only designed for movements from Mexico into the United States), the motor carrier logged onto the EPIC internet web site ***(www.epic-ibc.com)*** using any World Wide Web browser to complete a trip detail form. This form contained data fields for all transport elements required for entrance into Arizona. Trip permits were also requested via this form. For those trucks that did not need a single trip permit, no information needed to be entered into EPIC. In those cases, truck and company information were already entered in the EPIC database.

If a single trip permit was required, the completed form was then submitted to the EPIC system where the data were analyzed. If all EPIC operational criteria (i.e. truck registration, insurance) were met, an electronic trip permit was issued. A copy of the electronic permit could also be printed in the shipper's office via the EPIC web server. If the operational criteria were not met, a message stating the reason(s) for refusal was displayed to the shipper via their web server. The motor carrier was then able to electronically resubmit missing or incorrect information for the trip detail form, or manually take care of the problem inside the compound. Permitting fees (for single tip permits) were maintained within the EPIC system and were tallied periodically based upon the arrangements made during the enrollment process. These reports were sent to the appropriate motor carrier and/or broker. ADOT permit summaries were issued via fax on a daily basis.

Arrival at Compund: The truck then proceeded to the Mariposa compound using either the primary entrance or the SuperBooth for federal processing following existing federal review procedures. Customs officials determined which vehicles could use the SuperBooth and Rapid Enforcement Lane at a point upstream of the compound entrance. Installed at the primary gate is the EPIC decision reader which transmitted the appropriate 'red' or 'green' entry signal to the transponder. A red status meant the driver must park and proceed to the ADOT office. The SuperBooth was staffed by ADOT personnel, and a truck which received a red light was able to resolve problems while at the SuperBooth. A 'green' signal indicated the truck satisfied all ADOT requirements and could proceed through the compound or through the SuperBooth lane to the ADOT weigh station, and into Arizona (after meeting all federal inspection and paperwork requirements).

Services Provided by EPIC

In addition to issuing single trip permits, EPIC provided other informational services accessed via the EPIC web pages. Available information included:

Shipment Notification: Motor carriers could request that e-mail and/or fax notification be delivered to the shipper and/or the receiver when the truck left the Mariposa compound. This service could be requested on a per trip basis and notification was made when the vehicle exited the Arizona POE.

Mariposa Traffic Conditions: The EPIC web page was also designed to display traffic volume data on a quarter hour time period. Additionally, pictures of the road and current traffic conditions entering and exiting the compound were also displayed on this web page. Toward the end of the test period, the entrance camera was shut down at the request of U.S. Customs because drug screening was moved closer to the compound entrance and was in view of the camera.

Individual Truck Information: Another web page provided motor carrier transit data for both motor carriers and shippers. This page provided up to the minute information concerning specific vehicles, or for all of a motor carrier's vehicles, for a specified time period. This truck information also showed the exact times when vehicle(s) passed any of the readers for trucks entering into the United States as well as those returning to Mexico.

Evaluation Overview

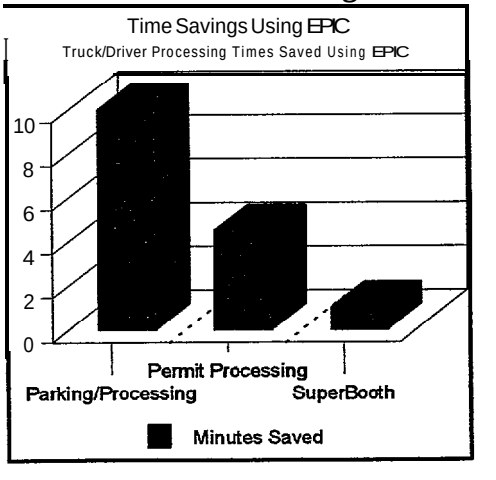
The purpose of the FOT was to evaluate EPIC technologies and services under actual operating conditions. Formal technical evaluations of operational tests are conducted to ensure that, once the test is concluded, sufficient information will be available to guide future development and deployment decisions. These evaluations assess both the quantitative and qualitative aspects of how well the technologies implemented in the test performed, and the level of benefits and support they provide to the participants. EPIC was operational, and data collection occurred for a six month period between December 1997 and May 1998. For the EPIC evaluation, individual trial tests were the means through which evaluation data were obtained. Data collection included attitudinal surveys to assess both public and private sector impressions of the value and effectiveness of the EPIC system, and the collection of travel time data through the compound.

Tie data were collected as part of the original baseline condition on the time needed to park a vehicle within the compound starting immediately after the vehicle was cleared for entry at the compound entry gate. Data were also collected on the time spent by drivers having paper work processed at the ADOT permit trailer (located inside the Mariposa compound). Under this condition, parking a vehicle within the compound and having trip permit papers processed at the ADOT trailer (for those who needed a single trip permit) were activities with associated time that were considered to be potentially eliminated through participation in EPIC. Additional data were automatically collected for trucks equipped with transponders. Transponder equipped trucks were divided into two groups, those that participated in EPIC and those that did not. The transponders allowed for a comparison between the groups and an indication of the time savings provided by EPIC.

Evaluation Results - Time Savings Using EPIC

In general, it appears as though the EPIC concept did have the potential to lessen the processing time for vehicles through the compound area, and therefore reduce vehicle travel time for the compound design and traffic flow pattern that existed when the system technology design was first conceived. However, the EPIC test did not provide an ideal environment for the quantitative analysis of travel time through the compound area and an assessment of the impact of EPIC on travel time. Several factors affected the evaluation of travel time including the reconfiguration of the compound and traffic flow structure after EPIC had been designed and implementation had been nearly completed. The combination of the low number of vehicles enrolled in the EPIC program and the intermittent failure of the EPIC data management system to track vehicles through the compound area resulted in a very small sample size for the analysis.

EPIC Time Savings



Trucks Entering the Compound: The data indicate that there was a significant potential for EPIC to improve travel time through the Mariposa compound if drivers do not have to stop for ADOT

review of trip permits. This is provided drivers do not have to stop within the compound for other reasons not related to State permitting. Therefore, prior to the installation of the SuperBooth, EPIC could have eliminated the need for drivers to park vehicles within the compound and spend time at the ADOT permit trailer. It is feasible that the average time saved inside the compound could have been on the order of 8.8 to 12.9 minutes depending on the entry gate used. However, if drivers are going to park their vehicles inside the compound for reasons other than those related to State of Arizona processing requirements, irrespective of the presence of EPIC technologies, than the overall time savings related to EPIC within the compound may only have been that time associated with the processing of drivers at the ADOT permit trailer. This latter time was 4.4 minutes on average with two windows open for processing within the ADOT trailer.

Trucks Using the SuperBooth: The pre-clearance of vehicles to use the SuperBooth and avoid entering the compound had the single most dramatic impact on travel time through the compound area for commercial vehicles. This feature alone reduces travel time by approximately 25 minutes on average (83 percent) in comparison to entering the compound for transponder equipped vehicles not using EPIC. EPIC vehicles using the SuperBooth had a 21 percent lower travel time than the non-EPIC vehicles that participated in the test (on average, approximately a one minute time savings).

Evaluation Results - Participant Interviews

For the interview process, participating companies were divided into two categories: first, the motor carrier who used EPIC to obtain single trip permits, and, second, those motor carriers whose trucks were registered in Arizona and therefore did not need single trip permits and used EPIC for data information services.

Single Trip Permit Motor Carrier: In general, this company was very positive about EPIC and believed it improved company efficiency and productivity. The time-savings using EPIC was through the driver not having to stop at the ADOT trailer in the compound for a single trip permit. This time savings can be significant during agricultural season when parking spaces are sometimes limited and congestion makes parking difficult. Using the SuperBooth provides the same benefits as EPIC. They found EPIC easy to learn and use. There was a slight increase in company administrative time using EPIC.

Arizona Registered Trucks: These motor carriers believed EPIC provided limited benefits and border crossing time savings. There was some productivity savings for one company that used EPIC printouts to record truck trips, improving company record keeping. They also saw some benefits from the congestion information, especially the real-time pictures of the compound. In general, these motor carriers participated in EPIC because they support any new technology that may come on line and they are usually willing to participate in any test.

Arizona Department of Transportation: ADOT estimated they saved about two minutes for each permit issued using EPIC. The time savings was from not having to enter the credential information into the ADOT database and printing a copy of the permit. If more motor carriers

used EPIC, ADOT believed there would also be about a fifteen minute time savings for each officer by eliminating the need to sort permits by import broker. For motor carriers that did not need single trip permits (vehicles registered in Arizona), ADOT did not use, nor could they identify any reason, to use EPIC as tested.

Lessons Learned

Control Operational Test Changes: The physical and operating conditions of the FOT need to be controlled and held constant during the design implementation, and evaluation phases of the test. In this FOT, the physical and operating conditions of the compound changed significantly after the system design had been completed and implementation had begun. This altered several aspects of the FOT and ultimately impacted the potential effectiveness of the technology to reduce vehicle-processing time within the compound. When it is not possible to control changes, their effect on the system design and the evaluation process should be communicated to the FOT participants.

Increase Data Collection Methods: The data collection plan for the evaluation should not rely entirely on the FOT technologies to provide the required data. While the primary functional aspects of the FOT may operate completely, the data retrieval and database management functions may not operate as well, and may require tie-tuning during the FOT evaluation phase. Reliance on the FOT technology for data collection can result in critical problems due to system failure. The accuracy of the data collected by the FOT technology should also be verified through an independent and parallel data collection process. At a minimum, the evaluation design should be considered when developing the system design.

Ensure System Design Complete Before Designing Evaluation: It is difficult to conduct a true before and after evaluation in a rapidly changing, uncontrolled environment, particularly if there is a long time between the before and after data collection. It would be better for evaluation purposes if the evaluation process could be designed after implementation and testing of the FOT technology. For example, through a process where the technology is "turned-off' while the 'before" data are collected and then "'turned-on" during the collection of the "after" data. This entire process should be accomplished over a reasonable time fiame with extraneous factors being controlled for as much as possible.

Recruitment of Operational Test Participants: The changes in the project scope, focus on state issues and the delay in NAFTA implementation combined to change the focus from primarily U.S. to Mexican carriers which increased the difficulty in recruiting carriers to participate in EPIC. To improve carrier recruitment and support, the customs brokers should have been brought into the partnership much earlier in the project.

Conclusions

Given the limited number of participants and transactions it was difficult to draw specific conclusions concerning the use of EPIC. In general, both motor carriers and ADOT expressed general satisfaction with EPIC and the potential use of electronic systems to improve traffic congestion at border crossings. EPIC showed the potential to both save time for motor carriers and improve administrative efficiencies for state agencies. The potential for EPIC is most

apparent in issuing single trip permits. Since the majority of trucks crossing the border (at least during agricultural season) require single trip permits the aggregate time savings could be substantial and help reduce congestion. With the recruitment difficulties for the EPIC test, it remains to be seen how readily other motor carriers would join EPIC or a similar system. For motor carriers who did not need single trip permits, both ADOT and the participating companies had a more difficult time identifying any tangible benefits from EPIC. To justify EPIC for these motor carriers and for state agencies, it would be necessary to increase the benefits provided. This could include increased vehicle safety information, insurance, flagging vehicles with delinquent tax accounts, or increased use of by-pass lanes.

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1. INTRODUCTION

1. INTRODUCTION

The EPIC Final Evaluation Report presents the evaluation framework, test environment, and evaluation results from the Expedited Processing at International Crossings (EPIC) Intelligent Transportation Systems (ITS) Field Operational Test (FOT). To provide some perspective, Chapter 1 summarizes the background, purpose, and process associated with the operational test evaluation and describes the organization of the ***EPIC Final Report.***

1.1 Background

The EPIC focus was on the transport component of international border crossings. Transport includes border crossing requirements for motor carriers, trucks, trailers, and drivers. Each year over three million trucks cross the U.S.-Mexican border, and by the year 2000 this number is expected to rise to five million. Trucks carry over 85 percent of the $100 billion in trade between the two countries. Approximately 11,000 trucks cross daily from Mexico into the United States.

State agencies which are responsible for commercial vehicle border crossings are faced with the challenge of accommodating increased traffic with limited resources. While working to quickly process border traffic, officials must ensure that operators have a valid commercial vehicle driver license, vehicles are registered, meet safety requirements, meet weight limits, and pay required fees. Motor carriers are responsible for ensuring their shipments cross the border without any delay caused by failure to meet regulatory and permitting requirements. EPIC offered the opportunity to test how a balance could be achieved between processing speed and compliance, while maximizing the liited resources of border crossing personnel.

The EPIC solution combined proven, low cost technology (through use of existing commercial vehicle operations (CVO) software) and the use of the intemet to provide a blend of expedited processing and compliance monitoring. The United States Department of Transportation's (USDOT's) ITS Program Plan describes the national strategy for deploying advanced technologies and services into the national transportation system. The Federal Highway Administration (FHWA) ITS Field Operational Tests provide the needed transition between research, development, and fill scale implementation. The purpose of the test was to evaluate EPIC technologies and services under actual operating conditions, in order to assess benefits and impacts before moving towards possible national deployment.

The EPIC Field Operational test used actual shipments, drivers, and vehicles moving across the border at Nogales, Arizona to provide real evaluation data. Nogales, Arizona, along with its Mexican sister city of Nogales, Sonora were chosen as the test site for several reasons: a separate commercial vehicle processing compound; manageable daily truck volumes; a mix of produce and maquiladora traffic; and typical border infrastructure constraints. Most importantly, for site selection, there was an established forward-looking institutional environment where U.S., Mexican and Arizona officials work together in cooperation with shippers, customs brokers, and truckers to find practical solutions to border crossing congestion.

To implement the proposed solution, the Arizona Department of Transportation (ADOT) assembled a team of public, private, and academic organizations with extensive knowledge and understanding of CVO, border crossing issues, and ITS applications. The Western Highway Institute (WHI) and SAIC Transportation Consulting Group, in association with Booz Allen & Hamilton (BA&H), served as the objective technical evaluators.

1.1.2 Purpose

The purpose of the EPIC Field Operational Test was to demonstrate and test the capability to more efficiently process motor carriers through international border crossings. The EPIC concept was intended to benefit motor carriers and state agencies through the creation of an information management solution that efficiently linked each independent processing step through an operations system that made the information accessible to those who needed it within the current regulatory environment.

It is essential to conduct formal technical evaluations of operational tests to ensure that, once the test is concluded, sufficient information will be available to guide future development and deployment decisions. Technical evaluations assess both the quantitative and qualitative aspects of how the technologies deployed in the test worked, and the level of benefits and support they provided. This information is essential for identifying appropriate paths of action for both public and private sector stakeholders.

1.1.3 Evaluation Process

The growing number and complexity of ITS operational tests, and the importance of integrating the results of such tests to provide insight for National ITS program efforts, led to a need for standardization in operational test technical evaluations. In response to this need, the FHWA issued the ***Intelligent Vehicle Highway Systems Operational Test Evaluation Guidelines*** in November, 1993. The EPIC Field Operational Test conducted technical evaluation in concert with the FHWA guidelines.

The FHWA guidelines provide a structured, incremental approach to technical evaluations, incorporating a six-phase process:

- Operational 7" Development-Formation of a test partnership and development and submission of an offer to participate, including a General Evaluation Plan;
- Goal Setting-Establishment of an Evaluation Team and definition of evaluation goals, objectives, and approach, as well as a preliminary scope of work and schedule;
- Definition-Preparation of an Overall Evaluation Plan;
- Design-Preparation of a Detailed Evaluation Design including individual trial test plans;

- Execution-Actual conduct of the evaluation, including test data collection, analysis, and documentation of the results;

- Reporting-Production of individual trial test reports and a final project report, including recommendations for future development and deployment.

This document-the ***Final Evaluation*** Report-represents the culmination of the ***Reporting Phase*** noted above.

1.1.4 Structure of this Report

The ***Final Evaluation Report*** lays out the framework followed in conducting the EPIC Field Operational Test technical evaluation, system information, operational test environment, and operational test results.

As indicated in the Table of Contents, this deliverable is organized into the following seven chapters and six appendices:

- Chapter 1 introduces the evaluation's structure and process;

- Chapter 2 discusses the background of EPIC, provides a description of the test environment, and provides an overview of the regulatory environment and physical infrastructure;

- Chapter 3 explains the EPIC system, operational procedures and system requirements;

- Chapter 4 describes evaluation team members, their roles and responsibilities, and explains the strategy and data collection procedures that were followed in conducting the evaluation;

- Chapter 5 presents the quantitative findings from the EPIC Field Operational Test;

- Chapter 6 presents the qualitative findings from the EPIC Field Operational Test;

- Chapter 7 presents the evaluation conclusions and lessons learned from the EPIC Field Operational Test;

- Appendix A contains a list of acronyms and a glossary of key trucking terms;

- Appendix B lists Evaluation Steering Committee members;

- Appendix C contains the data collection instruments;

- Appendix D contains the automatic data collection results;
- Appendix E contains the EPIC enrollment, registration and trip detail forms;
- Appendix F contains EPTC recruitment materials.

2. TESTENVIRONMENT

2. EPIC BACKGROUND and TEST ENVIRONMENT

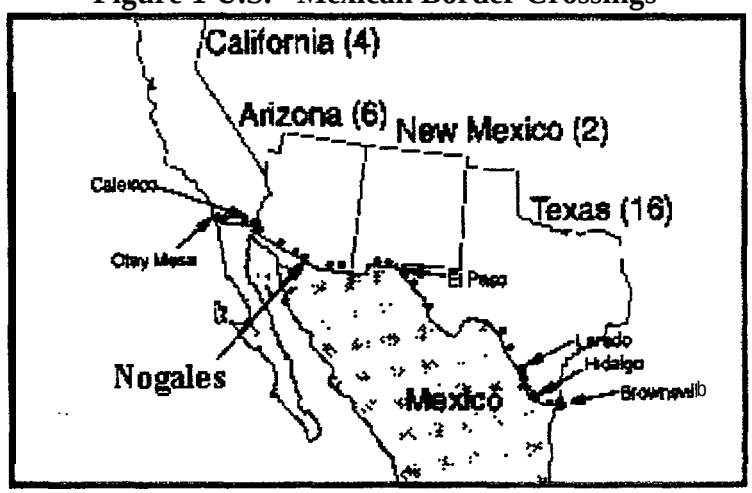
To provide a better understanding of EPIC, this chapter provides an overview of the regulatory agencies, import procedures, and physical infrastructure of the Mariposa crossing between Nogales, Sonora and Nogales, Arizona.

2.1 U.S. - Mexican Trade

Trade between Mexico and the United States has increased at a rapid pace over the last 12 years. Since 1986, the volume of U.S. - Mexico trade has grown over 300 percent. About 90 percent of U.S. exports to Mexico, and 85 percent of Mexican exports to the U.S. are moved by truck. Major Mexican exports include agriculture, petroleum products and manufactured goods produced by maquiladora plants. Maquiladora operations are manufacturing and assembling plants located in Mexico. Maquiladoras produce goods made primarily with U.S. components and are usually intended for the U.S. market. A large percentage of these products consist of automobiles, electrical components, and consumer products. Maquiladora plants located in the Mexican State of Nogales employ about 40,000 workers.

2.1.1 Nogales Port-of-Entry Profile

Figure 1 U.S. - Mexican Border Crossings



The Nogales, Arizona port-of-entry is the main crossing for commercial traffic between San Ysidro, California, and El Paso, Texas. The commercial truck crossing, Mariposa, is located approximately three miles west of central Nogales. Mariposa is the largest inland port for winter fruits and vegetables in the United States. More than fifty percent of all produce consumed in the U.S. and Canada during the winter months is imported through the Nogales port-of-entry. Within the Nogales, Arizona area, is a large concentration of produce distribution centers and warehouses. Over 55 produce warehouses process approximately $1.4 billion of fresh fruits and vegetables imported from Mexico annually. Most of the traffic through the Mariposa compound is concentrated during the winter months, roughly November through April.

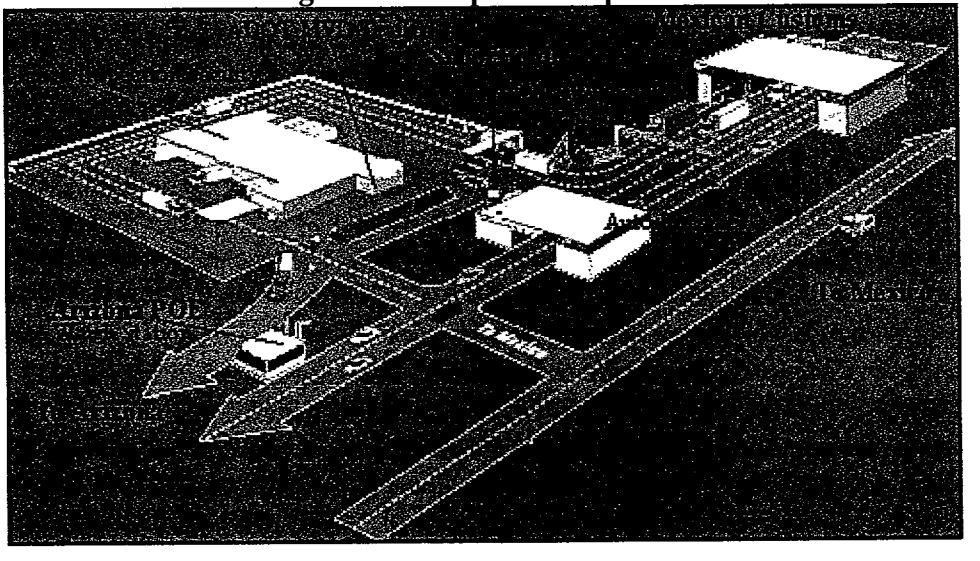
2.1.2 Mariposa Compound Infrastructure

The Mariposa facility processes both commercial and passenger vehicle traffic. The border crossing in downtown Nogales does not process any commercial vehicles with the exception of passenger bus traffic. The Mariposa compound, built in 1976, has four primary truck lanes (one lane, however, is not used) and a commercial import dock with space for 92 trucks. ADOT maintains a trailer for permit processing and a Port-of-Entry (POE) weigh station where trucks are weighed before entering Arizona.

The road leading up to Mexican Customs from the south is primarily a two-lane lane roadway with no easy avenue for expansion. A new four-lane truck bypass is planned. However, plans or guarantees for completion have not been available. The road from Mexican Customs to U.S. Customs is a three-lane road spanning 1,000 feet. There is little room to merge and often the entire roadway is filled with trucks queuing to be processed at the U.S. compound. The truck queue will often extend back through the Mexican customs gate and beyond into Mexico.

The roadway divides to serve four entry gates into the U.S. compound. However, only three of these gates are used due to traffic conflicts and congestion immediately inside the compound if all four gates are open. Of these three gates, two are usually operational. The gates are numbered 1 through 4. Gate 4 is usually open, Gate 3 opens next, followed by Gate 2, depending on demand. Gate 1, which is closest to the compound, never opens and is considered unusable because of the limited area for trucks to merge. The roadway on the U.S. side is a relatively new four lane highway connecting to Interstate 19 and provides access to frontage roads where many of the distribution centers are located.

Figure 2: Mariposa Compound



In early 1998, a "SuperBooth" and bypass lane for pm-cleared commercial vehicles were constructed just outside the Mariposa compound, located immediately before and to the left of the main compound entrance. The SuperBooth, now known as the Rapid Enforcement Lane, is staffed by both Customs and ADOT, and is intended to expedite truck movement into the United States. A truck must have the equivalent of an invoice to go through the SuperBooth lane. The invoice is issued by Customs to selected motor carriers and exporters. Once at the SuperBooth, trucks are either approved to proceed directly to the ADOT POE, or they are told to proceed into the compound for a more detailed inspection.

Two new traffic lanes were also built to support the SuperBooth operation. One lane is a by-pass lane to the left of the compound which leads directly to the ADOT POE/weigh station, the other is a short lane that leads back to the compound. Because of the location of the SuperBooth, the primary drug screening location has been moved to an area several hundred feet before the SuperBooth and the main compound entrance.

2.2 Regulatory Enforcement

Regulating commercial traffic into the U.S. is the responsibility of both the federal and state governments. ADOT Motor Vehicle Division (MVD) and the Arizona Department of Public Safety (DPS) are responsible for enforcing all Arizona laws and regulations. This includes state permitting requirements, insurance, safety enforcement, commercial drivers license, weight restrictions, and collecting all applicable fuel taxes and registration fees. In general, the federal government enforces all applicable laws and regulations regarding cargo.

2.2.1 Regulatory Background

Trucks crossing into Arizona are either registered in Mexico, the United States, or dual registered in both countries. Most of the U.S. trucks crossing the border in Nogales are registered in Arizona. Commercial vehicles owned by Mexican companies even those trucks that are registered in Arizona, are limited by U.S. law (49 C.F.R 372(b)) to operating within-a international commercial zone along the U.S. border. In Nogales, the vast majority of warehouses used to transfer cargo from Mexican to U.S. motor carriers are located within roughly ten miles of the Mariposa compound.

Foreign ownership of U. S. and Mexican motor carriers are limited, and both the U.S. and Mexico require that goods within each country be transported only by national motor carriers (other than within the international zone). Within the international zone, trucks from either country are free to pick-up and deliver freight. However, outside the international zone, only trucking companies from that country may carry cargo. The truck provisions of NAFTA would significantly change these rules. First, they would completely open border states to trucking companies from each country. Eventually, NAFTA will permit motor carriers from each country to deliver cargo to its final destination throughout the U.S., Canada, and Mexico. NAFTA will also open up each country's motor carriers to foreign ownership. However, the NAFTA truck provisions have yet to be implemented as scheduled.

2.2.2 Federal Government Enforcement Responsibilities

The federal government, in general, focuses on truck cargo in enforcing applicable federal rules and regulations. The compound is run by the federal government and they allow ADOT to operate within that compound. The agencies which share the major responsibility for imports into the United States include: Customs, the Drug Enforcement Agency (DEA), the Food and Drug Administration (FDA), The U.S. Department of Agriculture (USDA), and the Immigration and Naturalization Service (INS). There are several other federal agencies which have lesser enforcement responsibilities.

2.2.3 Arizona Department of Transportation Enforcement Responsibilities

ADOT is responsible for enforcing Arizona laws and regulations primarily pertaining to the truck, trailer, and driver. Drivers entering into Arizona must have a valid commercial driver's license (CDL) from either Mexico or the United States. The CDL is checked at the ADOT trailer when the driver applies for a single trip permit, and/or immediately before the truck reaches the ADOT weigh station. Trucks and trailers must have current safety certificates. The Arizona Department of Public Safety (DPS) will also inspect a percentage of trucks for safety violations. Trucks are individually selected based either on the DPS officer's experience or randomly selected to undergo a safety inspection. Those trucks that fail the inspection process are not allowed into Arizona and are either repaired or return to Mexico.

ADOT also ensures trucks entering Arizona do not exceed state size and weight limits. Trucks that exceed the weight limits are not allowed to enter Arizona, unless they have an overweight/oversize permit issued by ADOT, which are generally issued only for nondivisible loads such as construction equipment. Trucks that are overweight usually unload a portion of their cargo to another truck in the compound. All trucks must have current liability insurance that is valid in the United States. Motor carriers can either obtain insurance annually, monthly, or on a single trip basis. This is done through insurance agents who issue proof of insurance certificates.

ADOT is also responsible for collecting all applicable fees from single trip permits or 30/60/90 day permits, and ensuring annual registrations are current. A single trip permit temporarily registers a truck in Arizona, and expires after the truck returns to Mexico. Motor carriers who do not annually register their trucks in Arizona are generally agricultural carriers who operate in Nogales only part of the year. To obtain a single trip permit, a truck must have a current Mexican registration, safety certificate, and valid insurance. During the agricultural season (November-April), ADOT estimated that on average, about 70 percent of commercial vehicles crossing the border through Nogales were Mexican registered carriers and required a single trip permit to enter Arizona. This estimate was based on the total number of trucks crossing the border compared to the total number of single trip permits issued. Because most of the vehicles that require single trip permits are agricultural haulers this figure varies, during the summer months the majority of the commercial vehicles crossing the border are registered in Arizona.

Nogales Port-of-Entry Vehicle Counts (shaded months indicate EPIC Operational Test period)					
Date	**Total # Trucks Screened Inbound**	**Total Permits Issued**	**Dual Plated Vehicles (assumed)**	**Percentage of Dual Plated Vehicles**	**Percentage of Single Trip Permitted Vehicles**
July 1997	7,268	2,469	4,799	66.03%	33.97%
August 1997	6,700	2,259	4,44 1	66.28%	33.72%
September 1997	5,895	2,133	3,762	63.82%	36.18%
October 1997	7,717	3,732	3,985	5 1.64%	48.36%
November 1997	10,482	7,401	3,081	29.39%	70.61%
December 1997	12,566	9,7 16	2,850	22.68%	77.32%
January 1998	**16,949**	12,321	4,628	27.3 1%	72.69%
February 1998	17,498	12,936	4,562	26.07%	73.93%
March 1998	20,352	15,075	5,277	25.93%	74.07%
April 1998	19,540	14,5 16	5,024	25.71%	74.29%
May 1998	16,307	11,113	**5,194**	3 1.85%	68.15%
June 1998	12,840	7,593	5,247	40.86%	59.14%
July 1998	8,684	2,600	6,084	70.06%	29.94%
Totals July 1997-July 1998	**162,798**	**103,864**	58,934	36.20%	63.80%

There have been several regulatory changes since EPIC planning began in 1996. The most significant change was the elimination of the Arizona weight-distance tax and truck cab cards effective January 1,1998 Previously, trucks were taxed, in part, based on their weight and the distance traveled in Arizona. Before the weight-distance tax was repealed, all trucks registered in Arizona had to stop at the ADOT trailer to have their cab card swiped and read electronically. This cab card, which was required, kept track of how many times each truck entered Arizona, which was then matched up to the quarterly reports trucking companies submitted to ADOT. Those trucks not registered in Arizona, purchased a single trip permit also paid the weight-distance tax. In place of the weight-distance tax, Arizona increased the fuel tax and vehicle registration fees.

2.2.4 Mexican Custom Brokers

All exports from Mexico into the United States are done through customs brokers. Brokers, who are licensed by Mexico and Mexican States, are responsible for filling out all Mexican and U.S.

paperwork required for exports and imports. There are twelve brokers that operate in Nogales. Brokers have employee booths in the Mariposa truck inspection facility to handle any problems that occur with the transport.

Cargo will often be combined from two or more shippers. If a truck's cargo is from a combination of shippers, the broker divided the costs, as appropriate, among the shippers. The motor carrier is responsible for annual insurance, safety certificates, the driver's license. If the carrier is registered in Arizona, they are also responsible for yearly registrations fees. If the carrier is not registered in Arizona and needs a single trip permit, the broker will pay for the permit and charge the costs to the shipper. Brokers are also responsible for single trip insurance which is purchased from insurance agents. Motor carriers are responsible for annual insurance.

Drivers who need a single trip permit usually go to the appropriate broker's booth, located in the truck inspection facility, and receive a piece of paper that has the broker's name or identifying mark. That paper, along with other credentials (e.g. proof of insurance, safety certificate, CDL) are taken to the ADOT trailer. At the ADOT trailer, the driver presents the broker's slip and other credentials to ADOT personnel who will indicate which broker is responsible for the payment of the single trip permit fee. One copy of the trip permit is given to the driver and another is picked up by the broker. At the end of the business day, each broker will total the single trip permit fees for which they are responsible and submit payment to ADOT. ADOT will tally the permit copies for each broker to ensure proper payment is made. The broker then bills each shipper for the appropriate portion of the single trip permit fee. Since the installation of the SuperBooth, several brokers have stopped issuing slips of paper and instead, arrange to have their name on the carrier's paperwork, or provide a similar form of approval, allowing trucks to be processed at the SuperBooth, without first having to see a broker's representative.

2.5 EPIC - Background

The U.S. Department of Transportation's (USDOT) National ITS international border electronic clearance program was initiated because of delays and congestion at international crossings, caused, in part, by credential verification and paperwork. The goal of the program is to allow vehicles (particularly with frequent and known cross-border drivers) to clear international border crossings with minimal delays.

2.5.1 Original EPIC Scope

The EPIC ITS Field Operational Test originally proposed to demonstrate integrated commercial vehicle electronic trip clearance processing for cargo, vehicles, and drivers; electronic data interchange (EDI) of regulatory data; and compliance monitoring employing advanced technologies such as vehicle-to-roadside (VRC) devices, roadway sensors, electronic cargo seals, and license plate readers. EPIC was conceived and designed to improve border crossing transportation management. Further, to manage infrastructure and operational needs not addressed by automating the tiling and processing of motor carrier, vehicle, and driver data, EPIC also recommended traffic flow strategies and implementation of tools for traffic management.

2.5.2 Changes to EPIC

The original EPIC scope of work was changed several times in response to infrastructure and regulatory changes, and the U.S. Customs decision to not participate in the EPIC Operational Test. EPIC was originally designed as a complete solution for border crossings, including the truck, cargo and driver. The U.S. Customs Service decided not to participate in EPIC to focus on testing an in-house border crossing electronic system, the North American Trade Automation Prototype (NATAP). NATAP underwent testing in Nogales and border crossings in California and Texas. The withdrawal of Customs from the EPIC program meant that EPIC would focus only on state border crossing requirements. Testing electronic truck cargo seals was no longer feasible because Customs is responsible for most aspects of cargo enforcement. License plate readers were not deployed as originally proposed because of problems reading two different license plates on dual plated vehicles and with the color of Mexican license plates.

2.5.3 EPIC Proposed Traffic Management Improvements

EPIC originally proposed limited improvements to the compound infrastructure. This included re-striping the lanes starting from Mexican customs to better demarcate traffic lanes, and using barriers to further separate traffic and improve traffic flow. The General Service Administration, which is responsible for the compound infrastructure, completed these traffic improvements before EPIC began, based on recommendations contained in the Arizona Port Efficiency Study (1997) sponsored by ADOT.

As previously indicated, the construction of the SuperBooth and the new bypass lanes also changed the traffic flow through, and around, the compound. Therefore, some vehicles no longer had to enter the compound or receive their permits only from the ADOT trailer. These changes decreased the congestion and gridlock within the compound. Congestion, however, has increased immediately before the new drug interdiction area, as well as, immediately before the ADOT POE where trucks leaving the compound coupled with those from the SuperBooth lane must merge into one lane before the weigh scales.

3. EPIC SYSTEM

3. OPERATIONAL TEST DESCRIPTION

Chapter 3 outlines the goals, objectives, scope, and work plan associated with the EPIC Field Operational Test, and provides both a functional and physical description of the EPIC System.

3.1. Goals and Objectives

The primary goal of the EPIC Field Operational Test was to demonstrate potential productivity gains for motor carriers and state administrators through automating and integrating administrative functions. These administrative functions included: vehicle registration, safety verifications, fee payments, tax and insurance compliance, and permit issuance.
Goals and objectives for the EPIC Program were to:

- Establish methods for reducing the impacts of institutional and legal barriers to commercial vehicle border crossings;
- Utilize electronic vehicle and driver information necessary to meet regulatory needs;
- Provide congestion and truck crossing information to government agencies and motor carriers;
- Provide electronic trip information and verify the commercial drivers license of the vehicle operator.

3.1.1 Hardware Placement

Hardware placement included:

6 AVI Readers:

4 Northbound (import)

- Advance Reader (NB Advance) between U.S. and Mexican Customs (single antenna).
- U.S. Compound entrance (NB entrance). Four antennas, one for each of the entrance lanes (2,3, and 4), as well as, the SuperBooth.
- Compound exit booth (NB exit). Single antenna.
  Arizona POE/weigh station (NB POE). Single antenna.

2 Southbound Readers (export).

- Advance reader (SB advance). Single antenna.
- Gate reader (SB gate). Single antenna.

3.1.2 Computer Location

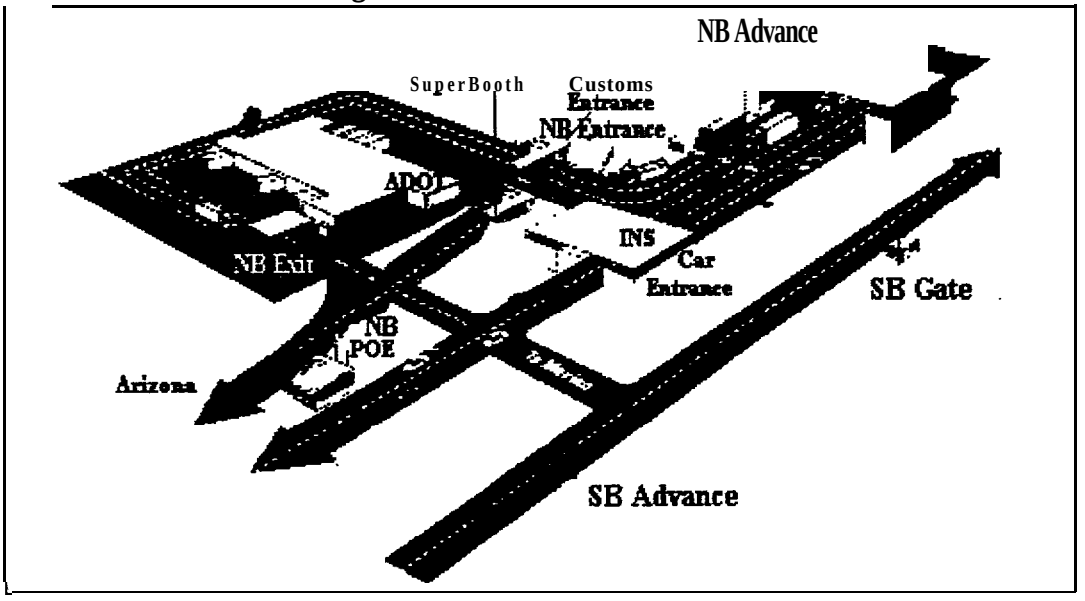
The server for the EPIC and MIST systems and a dedicated MVD workstation was located in the ADOT/MVD office. EPIC's server provided the red and green light information for the EPIC workstation, as well as the trip detail information at the ADOT POE/weigh station and ADOT/MVD office. A red light indication signifies that there may be a problem with the vehicle information (e.g. insurance, registration, safety inspections, or CDL). A vehicle receiving a red light

would be directed into the compound for vehicle or paperwork inspection. A green light indication signified the vehicle information appeared to be complete and correct and the vehicle could proceed directly to the ADOT weigh station.

The MIST® server collected data from acoustic detectors to provide information regarding truck traffic volumes and queue lengths. AVI readers were used to provide information on transponder equipped EPIC trucks. ADOT was provided with a workstation to update and query the EPIC system.

Combined, this hardware allowed the system to track a truck from Mexican Customs to the ADOT POE and out again. The system recognized a truck with an EPIC transponder prior to its arrival at the Mariposa primary gate. The appropriate trip detail form, complete with the agency red or green decision, was communicated to the driver via the EPIC decision reader. If the truck was cleared to proceed, a green light would flash on the in-cab transponder, if there was a problem and the driver must speak to an ADOT officer, a red light would flash. The detailed trip information, including the driver photo ID, enabled the ADOT POE to make final visual verification. The driver would slow roll across the ADOT scale, and would receive another red or green decision notification via the in-cab transponder. The truck then proceeded to the appropriate inspection area or exited into Arizona.

Figure 3 EPIC Reader Location



3.1.3 Technologies Deployed

Primary technologies which were demonstrated, and the functions they supported included:

- Internet links for transmission of the trip detail form, for pre-trip processing and clearance functions.
- 6 AVI Readers to identify the truck, activate the EPIC system and communicate with the driver.

- Electronic photographs to enhance the driver clearance process for CDL purposes.
- Traffic management and control systems to minimize average processing times for north-bound movements.Acoustic detectors (for traffic counts)
- Traffic lights and signals
- 170 controller cabinets

- ***Computers***

EPIC system	3 PC (Pentium 166MZ)
MIST	2 PC (Pentium 200Mz)
SPS	1 PC (Pentium 200Mz)

- ***AVI Readers***

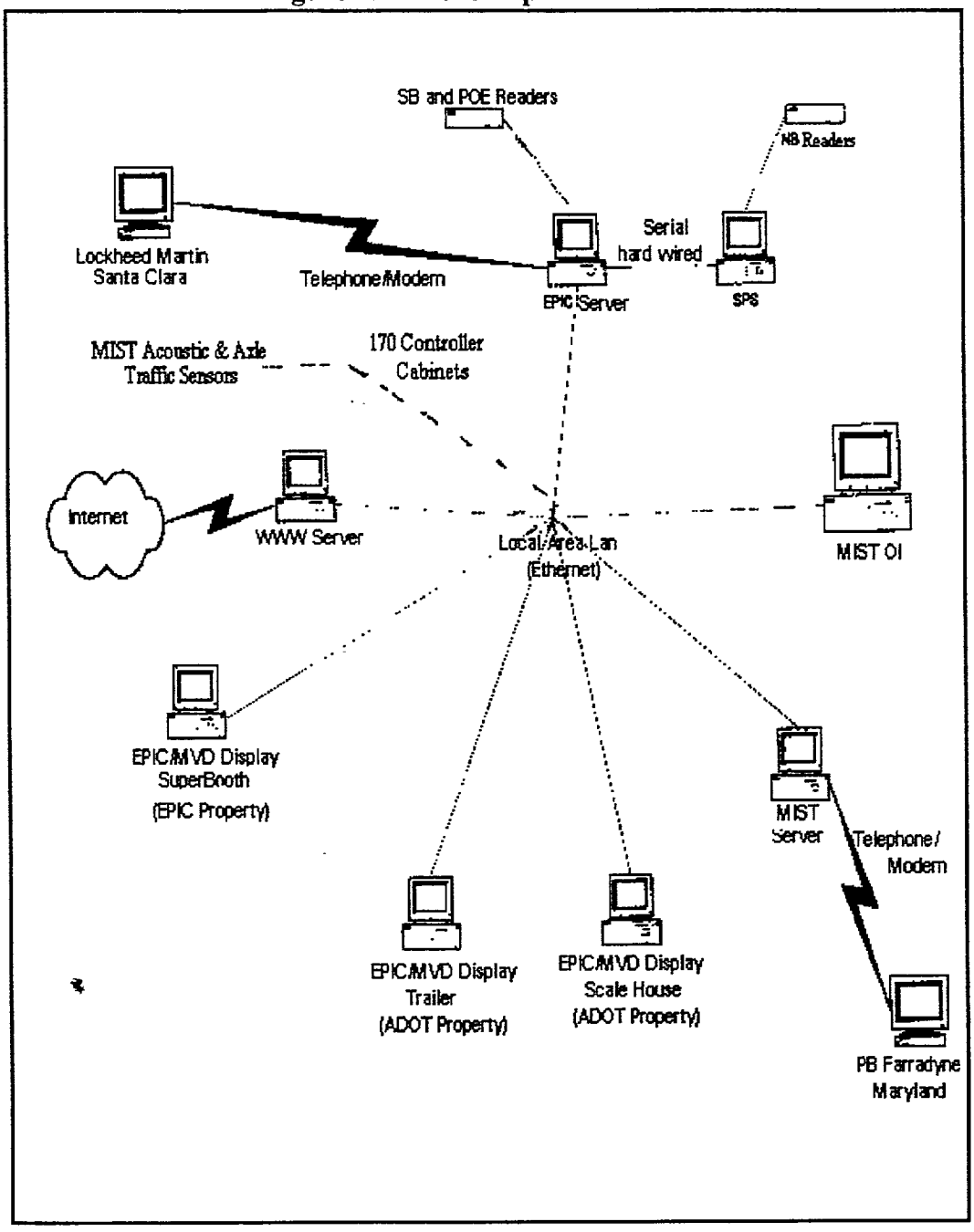
Hughes	6 model 200

- ***Truck Transponders***

Hughes	Type III (41 installed)

Figure 4 provides as schematic diagram indicating how these technologies were interconnected into the EPIC network.

Figure 4: EPIC Computer Network



3.2 OPERATIONS

The operational test was conducted under real world conditions, using actual commercial movements crossing the border into the United States. This section describes the EPIC processes from motor carrier recruitment to permit issuance.

3.2.1 Recruitment of Participants

EPIC solicited volunteer participation from motor carriers and brokers. The EPIC partners of ADOT, Lockheed Martin IMS, and the American Trucking Associations Foundation, identified and recruited volunteer companies and drivers. Companies were identified through meetings with the brokers' association and direct company contacts. Motor carriers who expressed an interest in participating in EPIC received an enrollment application. ADOT reviewed the applications for any continuing safety problems or overdue fee payments. (Please see Appendix F for recruitment materials).

3.2.2 Install Transponders and Populate Data Bases

Transponders were distributed through ADOT at the Mariposa compound. Installation was completed by the participating motor carriers. The system operator provided instructions for installation.

3.2.3 Participant and Technical Support

A service center was staffed to establish and maintain client accounts, and to answer participant questions during the test. Maintenance support was also provided to ensure that equipment deployed for the operational test worked as intended.

3.2.4 Enroll-Initializing and Updating of the EPIC Enrollment Data Base

The EPIC motor carriers provided information on each. individual truck they enrolled. This individual truck information included valid registration, proof of insurance, and a current safety inspection certificate. These credentials were checked at enrollment and periodically during the test. Trailers were enrolled in EPIC as well. Inspection data were provided for each trailer enrolled under a specific carrier account. Drivers were enrolled in a similar fashion. Drivers were required to have a valid current Commercial Driver's License (CDL), as well as a U.S. Customs compound card. The CDL, and a close-up picture of the driver were required for initial enrollment.

After enrollment, a radio-frequency transponder was issued to the carrier to be installed behind the windshield of each owned or leased truck that participated in EPIC.

3.2.5 *The Transport Preparation Process – The Trip Detail Form*

Once a shipment was ready for transport from Mexico to the U.S. (this test was

only designed for movements from Mexico into the United States), the motor carrier logged onto the EPIC intemet web site (www.epic-ibc.com) using any World Wide Web browser to complete a trip detail form. This form (see Appendix E) contained data fields for all transport elements required for entrance into Arizona. Trip permits were also requested via this form. For those trucks that did not need a single trip permit, no information needed to be entered into EPIC. In those cases, truck and company information was already entered in the EPIC database.

If a trip permit was required, the completed form was then submitted and sent to the EPIC system where the data were analyzed. If all EPIC operational criteria (i.e. truck registration, insurance) were met, an electronic trip permit was issued. A copy of the electronic permit could also be printed in the shippers office via the EPIC web server. If the operational criteria were not met, a message stating the reason(s) for refusal was displayed to the shipper via their web server. The motor carrier was able to electronically resubmit missing or incorrect information for the trip detail form, or manually take care of the problem inside the compound.

3.2.6 Pre-arrival

After completing and submitting the trip detail form, the motor carrier dispatched the truck from Mexico to its destination in Arizona. As the truck approached the Nogales border crossing, the transponder was read by a roadside reader located just past Mexican Customs. This was the advance reader (NB Advance on the diagram). This information was sent to the EPIC operational screens located in the ADOT trailer and inside the SuperBooth.

3.2.7 Arrival at the Mariposa Compound

The truck then proceeded to the Mariposa Customs entrance (the primary gate) or the SuperBooth for federal processing following existing federal review procedures. Installed at the primary gate is. the EPIC decision reader which transmitted the appropriate 'red' or 'green' entry signal to the transponder. A red status meant the driver must park and proceed to the ADOT office. The SuperBooth was staffed by ADOT personnel, and a truck which received a red light was able to resolve problems while at the SuperBooth. A 'green' signal indicated the truck satisfied all ADOT requirements and could proceed through the compound or through the SuperBooth lane to the ADOT weigh station, and into Arizona.

3.2.8 Gate-to-Gate Mariposa Compound Process

The EPIC decision reader transmitted one of two possible status conditions to the driver through a light display and sound signal on the transponder:

1. Green, indicating clearance and approval for bypass of the ADOT office; or
2. Red, directing a stop required at the ADOT permit office.

In the case of an EPIC green light, the truck proceeded toward the Mariposa exit gate and the Arizona POE. When required, all international border zone trip

permits were "issued" electronically, meaning the driver did not have to stop and obtain a permit. Trucks registered in Arizona did not need a trip permit.

In the case of an EPIC red light, the driver parked the vehicle and appeared at the ADOT office or the SuperBooth The ADOT office located in the Mariposa compound and the SuperBooth both had an EPIC PC for processing red light cases.

A traffic light located to the right of the entrance area was illuminated at the same time and with the same color as the transponder. The cause of a red light required resolution prior to continuation. A red condition indicated a problem with the pre-filed trip detail form, or that an ADOT enforcement officer decided to stop the vehicle for another reason. If the cause could not be resolved, the truck was directed to return to Mexico.

3.2.9 Process for Exiting Mariposa and Processing through the ADOT POE

After meeting all federal and state requirements for entrance into the United States (DEA, Customs, INS, FDA, USDA, etc.), the truck approached the Mariposa Compound exit gate (NB exit in Figure 3). Installed at the exit gate was an EPIC reader, where the truck transponder was read again. This exit reader alerted the EPIC system when an EPIC truck was approaching the Arizona POE (NB POE in Figure 3). The POE reader sent a status indication to the driver. The EPIC system displayed the exit status for the truck plus carrier, vehicle, and driver information to the state agency enforcement officer at the POE. While the truck was weighed, the enforcement officer had an opportunity to conduct a visual review of the vehicle and driver and could override a green EPIC status. An external light signal at the POE turned red for an override condition, including weight violations.

3.2.10 MIST

The Management Information System for Transportation (MIST) software was a key ingredient in the traffic management strategies. Developed by PB Farradyne, Inc., the purpose of MIST was to provide a general development platform from which customized traffic control systems could be more effectively provided.

MIST is a flexible product that can be used for signal systems, traffic monitoring systems, and traveler (CVO) information systems. MIST has the capability to monitor and control traffic signal controllers, manage variable message signs (VMS), ramp metering equipment, count stations, and closed circuit television (CCTV) cameras. EPIC drew upon several of those capabilities. Looking to the future, MIST® provides the technical foundation for expanded border crossing traffic management capabilities.

MIST® also provided transport "event" data for the border crossing. Transport event data includes the location, date, and time. From this data, EPIC generated the duration patterns of transports and frequencies of border activity. These data were

provided periodically to participating motor carriers. This transport information was useful for motor carrier border crossing transport management. For example, this information could assist just in time (JIT) operations to improve their export controls. The transport event data and resultant reports were confidential, and a participating motor carriers were only provided with their own data. Company level data were not shared between motor carrier participants.

3.2.11 Information Services Provided by EPIC

Motor carriers could request that e-mail and/or fax notification be delivered to the shipper and/or the receiver when the truck left the Mariposa compound. This service could be requested on a per trip basis and notification was made when the vehicle exited the Arizona POE.

Permitting fees (for single trip permits) were maintained within the EPIC system and were tallied periodically based upon the arrangements made during the enrollment process. These reports were sent to the appropriate motor carrier and/or broker. ADOT permit summaries were issued via fax on a daily basis.

The EPIC web page was also designed to display traffic volume data on a quarter hour time period. However, early in the test period the acoustic reader that counted entrance traffic was hit by lightening and never functioned. Additionally, pictures of the road and current traffic conditions entering and exiting the compound were also displayed on this web page. Toward the end of the test period, the entrance camera was shut down at the request of U.S. Customs because drug screening was moved closer to the compound entrance and was in view of the camera. Data was also accessible by US Customs to monitor the compound and track congestion for more effective personnel planning.

Another web page, which was password protected, provided motor carrier transit data for both motor carriers and shippers. This page provided up to the minute information concerning specific vehicles, or for all of a motor carrier's vehicles, for a specified time period. This truck information, displayed as a web page, showed the exact times when vehicle(s) passed any of the readers for trucks entering into the United States as well as those returning to Mexico (from the readers at the SB gate location).

3.2.12 Traffic Data Collection

Keeping with the desire to leverage existing investments, MIST® served as a data gathering and management platform for this application. The movement of traffic participating in the EPIC program, as well as a control group of vehicles, was monitored.

4. EPIC EVALUATION OVERVIEW

4. EVALUATION DESIGN OVERVIEW

Chapter 4 of the ***Evaluation Final Report*** contains the procedures used to conduct individual trial tests for the evaluation of the EPIC Field Operational Test. Some of the information contained in this overview was drawn from the ***Evaluation Design*** released in April, 1997. It is repeated so the ***Evaluation Final Report*** is understandable on a stand-alone basis.

4.1 Evaluation Purpose and Process

Formal technical evaluations of ITS operational tests are conducted to ensure that, once the test is concluded, sufficient information will be available to guide future development and deployment decisions. These evaluations assess both the quantitative and qualitative aspects of how well the technologies implemented in the test worked, and the level of benefits and support they provide to the participants. This information is essential for identifying appropriate paths of action for both public and private sector stakeholders.

4.1.1 Evaluation Participants

To be successful, technical evaluations demand the input and assistance of the developers and users involved in the operational test. In the EPIC Field Operational Test, this input and assistance was primarily channeled through the EPIC Steering Committee. The sections below briefly describe the participants general evaluation responsibilities in the EPIC Field Operational Test.

- ***Arizona Department of Transportation*** (ADOT) served on the Evaluation Team, supported evaluation meetings, reviewed evaluation materials, and provided information on commercial vehicle regulatory processes.

- ***Booz, Allen and Hamilton*** (BA&H) a management consulting firm under contract to the Federal Highway Administration, provided evaluation oversight support for the ITS Operational Test Program. Booz-Allen supported the WHI/TransCore team throughout the evaluation process.

- ***The Federal Highway Administration*** (FHWA) participated in evaluation meetings, monitored activities, reviewed deliverables, and coordinated the evaluation with other ITS projects and plans.

- ***Heavy Vehicle License Plate (HELP), Inc.*** Provided project administrative support for the operational test.

- ***SAIC Transportation Consulting Group*** served as an objective, technical co-evaluator, assuming responsibility for evaluation planning, conduct, analysis, and reporting.

- ***Lockheed Martin IMS*** the principle private sector partner, developed and operated the system and supported evaluation data collection, meetings, and reviewed evaluation deliverables.

- ***Western Highway Institute (WHI),,***served as an objective technical co-evaluator, assuming responsibility for evaluation planning, conduct, analysis, and reporting.

Steering Committee members worked in conjunction with WHI, SAIC, and BA&H, to serve as a technical advisory group to address evaluation questions and decisions, provide oversight of the evaluation activities, review evaluation documents, and maintain the evaluation momentum. Additionally, they supported trial test data collection efforts by completing surveys, information requests and cooperating with interviews.

4.1.2 Goals and Objectives

In conjunction with the EPIC Steering Committee, WHI, and SAIC developed a list of Evaluation Goals and Objectives. These goals guided the EPIC evaluators in designing and conducting the evaluation. ***A complete list of the evaluation goals, objectives, hypothesis statements, and conclusions are found in Chapter Seven.***

41.3 Individual Trial Tests

Individual trial tests were the means through which evaluation data was obtained. These tests grouped data needs by the venue in which they were collected, to support differences in evaluation planning, economize on project resources, and minimize respondent burden. The three trial tests developed for the EPIC Field Operational Test evaluation were:

1. ***System Record Selection —*** Evaluators collected operational data (e.g., number, length of transactions) automatically from the system every month throughout the execution phase. A pilot test was conducted before the operational test began.

2. ***System User Surveys & Interviews —*** Evaluators collected operational data (e.g., services used) plus behavioral and attitudinal data (e.g., rating of services) from motor carrier and state agency users. Interviews collected operational data (e.g., cycle times, costs, configuration requirements) from motor carrier/service agent and probed responses to survey questions. A operational survey and follow up interview were conducted in the last month of the operational phase. A pilot test of the survey and interview instruments was conducted before the operational test began. (The interview questions are contained in Appendix C).

3. ***System Operator Interview —*** Evaluators collected operational data (e.g., number of service center calls) plus attitudinal data (e.g., institutional problems) from system operator. Operational information (e.g., cycle times, costs, configuration requirements) was also collected.

4.1.4 Establishment of a Basis for Comparison

A basis for comparing the EPIC system with current approaches to meeting motor carrier regulatory requirements was needed to determine whether evaluation hypotheses should be accepted or rejected. Both a treatment and non-treatment group were established during the EPIC Field Operational Test. The treatment group consisted of six vehicles from three carriers that were recruited to participate in the program. The non-treatment group consisted of 17 vehicles from two carriers.

Baseline data were also collected prior to EPIC installation on the time needed for trucks to be parked after entering the compound, and the time needed to process drivers at the ADOT permit trailer. At that time (prior to SuperBooth installation) all vehicles entered the compound so EPIC would eliminate the need for vehicles to be parked and drivers to be processed at the ADOT permit trailer. Therefore, it was envisioned that EPIC would eliminate time spent in the compound associated with these activities.

4.2 Data Collection, Tabulation, Statistical Analysis, and Reporting

The sections below describe the data tabulation, statistical analysis, and reporting plans that were followed in conducting individual trial tests for the EPIC Field Operational Test evaluation, as well as the key issues associated with these plans.

4.2.1 Data Tabulation

Data were collected and tabulated to provide a basis for an assessment of the impacts and effectiveness of the EPIC system to improve processing of commercial vehicles through the Mariposa compound. Data collection included baseline information and information collected during the FOT. Data collection involved attitudinal surveys to assess both public and private sector impressions of the value and effectiveness of the EPIC system, and the collection of time data associated with travel through the compound.

Prior to the installation of the SuperBooth and the associated compound bypass lane, all vehicles were required to enter the compound. Under this condition, parking a vehicle within the compound and having trip permit papers processed at the **ADOT** trailer (for those who needed a single trip permit) were activities with associated time that were considered to be potentially eliminated through participation in EPIC. Data were collected as part of the original baseline condition on the time needed to park a vehicle within the compound starting immediately after the vehicle was cleared for entry at the compound entry gate. Data were also collected on the time spent by drivers having paper work processed at the ADOT permit trailer. Data were collected during a single day of peak traffic season activity. Data were tabulated, with means and standard deviations computed for the baseline condition. Daily traffic volume information was also compiled for the day when baseline time data were gathered.

The installation of the SuperBooth and the compound bypass lane in represented a significant alteration from the base condition that was in place at the inception of the EPIC concept.

Under this new condition, approximately twenty-six percent of all commercial vehicles approaching the compound were no longer required to enter the compound and were cleared by federal and state officials at the SuperBooth to proceed directly to the ADOT POE/weigh station. This new condition applied to both EPIC and non-EPIC vehicles during the FOT. This altered the base condition of the FOT and directly impacted the potential effectiveness of EPIC, which was designed and partially implemented prior to the conceptualization of the SuperBooth and bypass lane. In effect, the combination of the SuperBooth (with the inspection of paperwork for both federal and state purposes), the bypass lane, and pre-clearance of vehicles duplicated the vehicle processing benefits envisioned for EPIC and provided a more direct, and less congested, travel route from the compound entrance to the ADOT weigh station.

In response to the change brought on by the SuperBooth a modified evaluation plan design, and data collection plan were formulated. Baseline and treatment travel time data were collected simultaneously by the EPIC system data capture capabilities. Both baseline and treatment vehicles were equipped with transponders that were read at specific locations throughout the compound area allowing the EPIC system to track each vehicle and time stamp its passage of each reader. The data provided by the EPIC system included the vehicle identification number, the motor carrier name, the date, the time each vehicle was detected by each reader, the reader location, and whether the vehicle was an active or inactive (baseline) EPIC vehicle. These data were compiled, summarized and evaluated for a two month period beginning April 1, 1998 through May 31, 1998. This information was used to evaluate vehicle travel time in the compound area. The details and results of this analysis are provided in Chapter 5 of the document.

Total daily traffic volume data into the compound area and daily traffic volume data for vehicles using the SuperBooth were provided by Customs and ADOT MVD. This information was tabulated and used to develop information on traffic flow into the compound and past the SuperBooth during the time period of the FOT evaluation.. It was originally. envisioned that traffic volume data by entry lane by hour of the day would be provided by the MIST system, as this is one of the functions that it was intended to perform. However, the installation of a loop detector and configuration of MIST software to include the SuperBooth lane were never envisioned, and other technical problems prevented hourly traffic volume data capture by the system during the FOT. As the FOT and evaluation data collection unfolded it was realized that the lack of traffic volume data by hour of the day was not a significant factor in the evaluation process.

Descriptive statistics were generated for the travel time and traffic volume data (e.g., minimums, maximums, means, and standard deviation) along with graphics (e.g., bar charts). The quantitative analysis summary statistics and results are presented in Chapter 5. Qualitative information from the interviews were recorded and summarized. A summary of the qualitative information gathered during the FOT is provided in Chapter 6. The collected data are contained in Appendix D.

4.2.2 Data Reporting

The final evaluation report was screened through two review processes: Evaluators internal review and EPIC Steering Committee review. Following these reviews, the final report was revised, as appropriate, to incorporate the input received.

To maintain the confidentially of both proprietary information and personal opinions, evaluation data were only released in areas where there were sufficient responses to screen organizations/individuals, unless specific permission was otherwise obtained.

4.2.3 Quality Control/Quality Assurance Procedures

Formal quality control and quality assurance procedures were followed during the EPIC Field Operational Test evaluation. Quality control procedures were used by the Evaluators to ensure that evaluation activities were properly conducted, analyzed, recorded, and documented. Quality assurance procedures were also used by the Evaluators to oversee quality control.

4.3 Human Factors And Privacy Considerations

The EPIC Field Operational Test evaluation required the participation and support of many individuals and organizations in a new endeavor — one that often fell outside everyday roles and responsibilities, and in some cases could raise confidentiality concerns. In recognition of this, key human factors and privacy considerations associated with the evaluation, and a discussion of how these considerations were addressed, are outlined below.

4.3.1 Evaluation Data Confidentiality

- Provided ***evaluation participants with adequate information on evaiuation expectations and activities.*** As part of the evaluation baseline data collection interviews, WHI and/or SAIC met individually with motor carrier/service agents and state agency users and explained what was expected of them and, in turn, what they could expect from the evaluation.

- ***The demands on evaluation participants was minimized*** To encourage full cooperation and avoid negative reactions to data collection instruments (which could affect results), the evaluation:

  Collected only the data necessary to address specified evaluation factors.

  Made use of simple, quick to complete, and carefully pilot-tested data collection instruments.

  Arranged interviews to be as convenient and unobtrusive as possible (e.g., limited to one hour or less, and held at a convenient location).

Built on data already collected during the system design process to avoid duplication of effort.

- ***Synchronized evaluation and system design/operations.*** Evaluation data collection instruments for system users closely reflected the EPIC system's features, terminology, and user interface, which eliminated respondent confusion and simplified completion.

- ***The evaluation recognized the importance of maintaining the confidentially of both proprietary information and personal opinions.*** Evaluation data security procedures addressed participants' private sector competitiveness concerns and ensured candidness by shielding the identity of individual responses.

5. QUANTITATIVE RESULTS

5. QUANTITATIVE RESULTS

This chapter presents a description of the data collection, analysis, and results of the quantitative assessment of the EPIC FOT that was conducted as part of this evaluation. This quantitative assessment focused on elements of time associated with the processing of vehicles through the Mariposa compound for State of Arizona related requirements, and the potential reduction in travel time through the compound related to EPIC technologies. The basic hypothesis was that there would be a travel time savings for commercial vehicles through the Mariposa compound as a result of participation in the EPIC process by commercial vehicle operators.

At the outset of the project the physical layout of the Mariposa compound did not allow for commercial vehicles to enter the U.S. without first entering the compound for federal inspections and State of Arizona processing. Initially it was envisioned that EPIC would be designed to address both federal and State processing requirements and information needs. However, as discussed in Chapter 2, the federal aspects of the border crossing process were removed from the EPIC FOT by the U.S. Customs Service, leaving EPIC to focus on only the state border crossing requirements. Therefore, the quantitative evaluation focused on the elements of the state border crossing process that could be affected by EPIC.

The baseline data collection for the quantitative analysis was conducted for two conditions. The first was the condition where all commercial vehicles were required to pass through the compound prior to entering the U.S. The second was the condition where the Superbooth and the compound bypass lane were operational allowing vehicles to proceed from the Superbooth directly to the ADOT weigh station without entering the compound. Treatment data collection and analysis could only be done for the second condition as this was the condition that existed during the EPIC FOT. The data collection procedure, analysis, and results for both conditions are provided below.

5.1 Condition 1 – Initial Compound Structure

Under the initial compound structure all commercial vehicles were required to enter the compound through the primary entrance. It was envisioned that, under this compound and vehicle processing structure, EPIC could eliminate the time required for vehicles to park inside the compound and the time required for drivers to be processed at the ADOT permit trailer.

Baseline data collection was conducted for two time elements: 1) the time required to park a vehicle after entering the compound, and 2) the time spent at the ADOT trailer to process permit documents. Walk time data were not collected because in most cases drivers did not move directly from parking their vehicle to the ADOT permit trailer. However, a driver could walk directly from any parking space to the ADOT trailer within a minute.

This baseline data collection was conducted on March 19th, 1997. The data collection was conducted by a team of three persons. Two of the data collectors collected data on the time required to park a commercial vehicle after entering the compound. The third data collector recorded the time spent by commercial vehicle drivers at the ADOT permit trailer within the compound. Data collection began at approximately 9:00 AM and ended at approximately 6:00 PM. Data collection was a continuous activity (except for short breaks) during the data collection hours and as many vehicles and drivers were included in the sample as possible. The following sections describe the data collection procedures and provide a summary of the data collected during these activities.

5.1.1 Truck Parking Time

Truck parking time was defined as the time elapsed from the moment the truck began to move after being released to enter the compound from inspection at the primary compound entrance, to the moment the truck came to a stop in one of the parking spaces at the compound loading dock. Two data collectors observed trucks entering the compound through the primary entrance from Mexico and entered the following information on a data entry form (see Figure 5 for a sample of the data entry form):

- The gate used to enter the compound. On the day these data were collected only two of the three available gates where open to the compound as shown in Figure 6. These gates were designated as Gate 2 (farthest from the loading docks) and Gate 3 (closest to the loading docks). The traffic lane within the compound for Gate 2 was separated from the adjacent lane for Gate 3 by a concrete barrier wall. The purpose of the barrier wall is to prevent vehicles entering through Gate 2 from turning left across the lane for Gate 3 directly into the parking spaces on the west end of the loading area. Trucks entering through Gate 2 must proceed to the south side of the loading area for the first opportunity to park, and may park in any of the available spaces by traveling counterclockwise around the structure.
- Tie truck leaves primary inspection. The data collector, using a digital watch, noted the time the vehicle left the primary inspection to the nearest second.
- Time truck stops at dock. The data collector would follow a vehicle being sampled until the vehicle backed up to the loading dock and stopped. This time was noted on the data collection form to the nearest second. It was also noted if a vehicle proceeded from the entry gate to the exit gate without stopping.
- Dock number. This is the number of the parking space at the loading dock. Note that as shown in Figure 6, two of the parking spaces within the compound are numbered 24.

Figure 5

EPIC – Nogales POE – Truck Movement Study Sample Data Collection Form

Instructions – Note gate the truck is entering through. When truck finishes primary inspection, note the time of day (to the second). Follow truck around the dock while he finds his parking place. When the truck hits the bumper on the loading dock, note time of day (to the second). Note the dock number and if the truck is full or empty.

Ref. No.	Gate No.	Time Truck Leaves Primary Inspection	Time Truck Stops at Dock	Dock No.	Empty (E) or Full (F)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
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16					
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25					

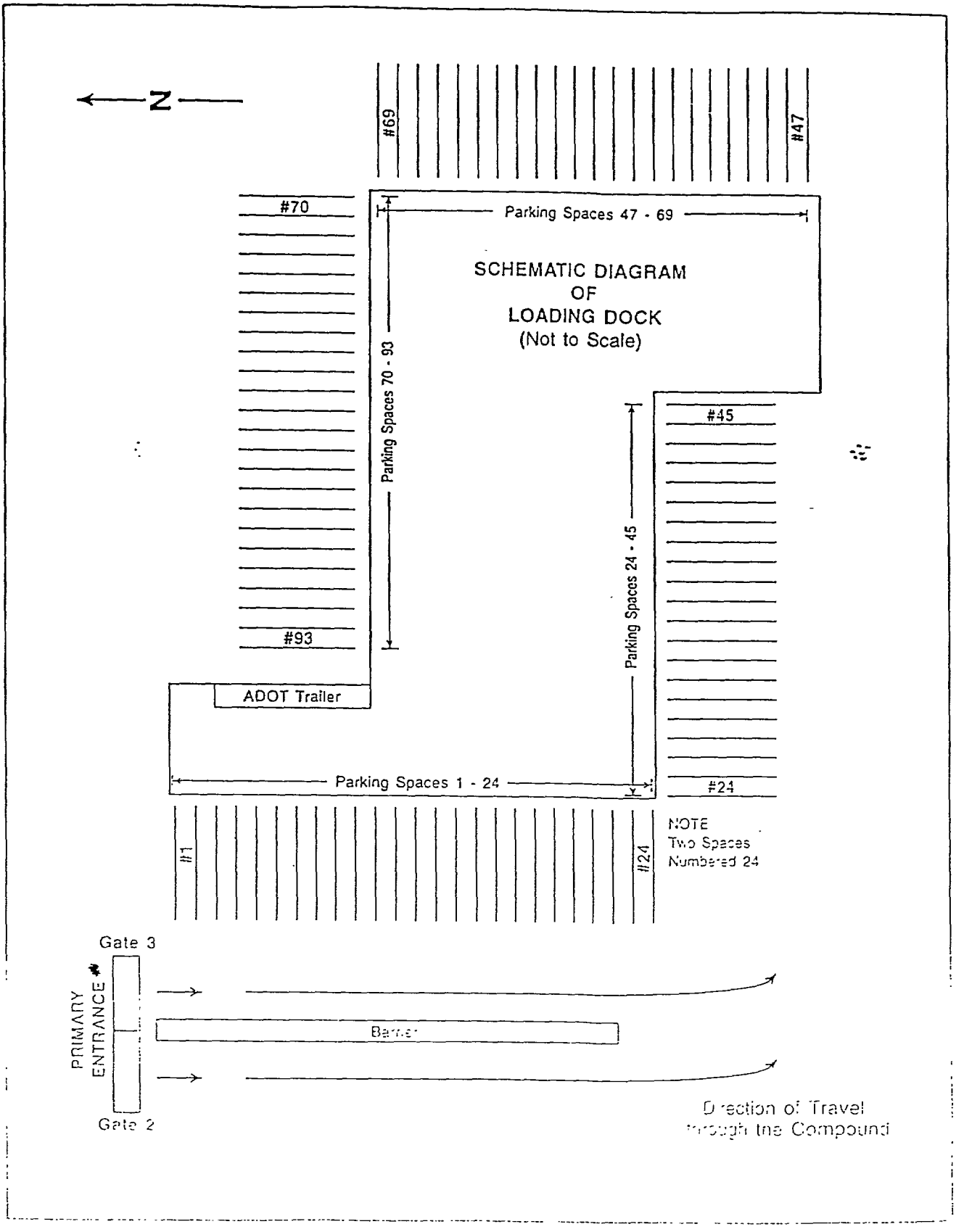


Figure 6
Schematic Diagram of Compound Loading Dock Area

- Empty or full. This designation refers to whether or not the truck was carrying cargo at the time it parked at the loading dock. No trucks in the sample are known to have parked at the loading dock empty, although several drivers did not open the back of their trailer as they parked.

On the day of the data collection Customs data indicates that a total of 1183 commercial vehicles entered the compound (194 empty, and 989 with cargo). ADOT data indicates that 964 vehicles entered the compound, with 667 trip permits issued, and 536 vehicles weighed. While customs counts each vehicle entering the compound, ADOT does not count small trucks, vans or automobiles that do not need a trip permit. Therefore, the ADOT count is less than the Customs count for the same day.

A total of 79 vehicles were sampled for parking time, 26 entering through Gate 2 and 53 entering through Gate 3. In addition, six trucks entering Gate 2 that were sampled proceeded directly to the exit gate of the compound, and four vehicles went directly to the Drug Enforcement Agency (DEA) x-ray station without parking.

A summary of the parking time data for vehicles entering both gates is provided in Table 2. Note that there is a distinct difference in the mean parking time depending on which gate was used for entry, with entry through Gate 2 resulting in approximately twice as much parking time as entry through Gate 3. Therefore, these data were not combined into an overall average. The mean parking time with entry through Gate 2 was 8.43 minutes with a standard deviation of 5.17 minutes. The minimum parking time recorded for entry through Gate 2 was 2.92 minutes with a maximum time of 24.72 minutes. The mean parking time with entry through Gate 3 was 4.37 minutes with a standard deviation of 2.28 minutes. The minimum parking time recorded for entry through Gate 3 was 1.20 minutes with a maximum time of 13.30 minutes.

Table 3 provides a summary of the data on parking location within the compound. The data indicate that for the vehicles sampled that entered the compound through Gate 2, none traveled completely around the structure and parked on the west side. The majority of the vehicles entering Gate 2 parked in the first available spaces on the south side of the structure. For the vehicles sampled that entered through Gate 3 the vast majority (90 percent) parked in the first available spaces nearest the entry gate on the west side of the structure. The remaining 10 percent parked on either the south or east side, with none of the sample traveling all the way to the north side of the structure to park.

5.1.2 Time Spent at the ADOT Trailer

Two processing windows were open in the ADOT trailer for most of the day during this data collection. For most of the time only one or two drivers would be waiting in queue to be processed. However, during the busiest periods some queuing of up to seven or eight drivers did occur. Three particularly busy time periods were noted by the data collector; 9:21 AM to 9:54 AM, 1:30 PM to 2:10 PM, and 3:05 PM to 3:20 PM.

Table 2
SUMMARY OF PARKING TIME DATA

Entry Gate	Sample Size	Parking Time (Minutes				
		Mean	Medium	Minimum	Maximum	Standard Deviation
2	26	8.4	7.2	2.9	24.7	5.2
3	53	4.4	4.0	1.2	13.3	2.3

Table 3
SUMMARY OF TRUCK PARKING LOCATION DATA

Entry Gate No. Use	Number of Vehicles Parking in Designated Spaces			
	Westside (l-24)	Southside (24-45)	Eastside (47-69)	Northside (70-93)
2	0	16	4	6
3	48	3	2	0

As shown in Figure 6, the ADOT permit trailer was located on the north side of the main structure. A data collector was positioned outside of the ADOT trailer to observe and record the time spent by drivers inside the trailer obtaining ADOT permits. The data collector used a lap top computer to record the driver entry and exit time at the trailer and directly enter this information into a database. A sample of 401 drivers was generated from the data collection. While this is not a one-hundred percent sample, it does represent a very large sample size in proportion to the total number of drivers entering the compound that required ADOT permits (401 out of 667 permits issued or 60 percent).

The process within the ADOT trailer did not result in a first-in first-out handling of drivers. Frequently, drivers would exit the trailer before other drivers that had entered before them. On occasion, drivers would enter the trailer, exit in short amount of time (less than a minute) and return a short time later. These drivers were only sampled the first time they appeared at the trailer. Three drivers appeared to have serious problems and repeatedly returned to the trailer with a uniformed person (ADOT, U.S. DOT, or State Police). Although this latter type of condition could be eliminated by EPIC, these drivers were not timed and are not included in the sample.

A brief summary of the results of the driver time spent at the ADOT permit trailer is provided in Table 4. The average time spent at the trailer was 4.4 minutes, with a minimum time of 0.5 minutes and a maximum time of 14.2 minutes.

5.1.3 Summary

The data indicate that there was a significant potential for EPIC to improve travel time through the Mariposa compound if drivers do not have to stop for ADOT review of trip permits. This is provided drivers do not have to stop within the compound for other reasons not related to State permitting. Therefore, prior to the installation of the Superbooth, EPIC could have eliminated the need for drivers to park vehicles within the compound and spend time at the ADOT permit trailer. It is feasible that the average time saved inside the compound could have been on the order of 8.8 to 12.9 minutes depending on the entry gate used. However, if drivers are going to park their vehicles inside the compound for reasons other than those related to State of Arizona processing requirements, irrespective of the presence of EPIC technologies, than the overall time savings related to EPIC within the compound may only have been that time associated with the processing of drivers at the ADOT permit trailer. This latter time was 4.4 minutes on average with two windows open for processing within the ADOT trailer.

Table 4
SUMMARY OF DRIVER TIME SPENT
AT THE ADOT PERMIT TRAILER

	Time (Minutes)				
Sample Size	**Mean**	**Median**	**Minimum**	**Maximum**	**Standard Deviation**
401	*4.4*	*3.8*	*0.5*	*14.2*	*2.6*

5.2 Condition 2 -- Data Collection and Analysis with the Superbooth and Bypass Lane in Place

The implementation of the Superbooth and the compound bypass lane created a condition that was significantly different than existed when the EPIC technology application was first conceived and then designed for the Mariposa compound. The Superbooth provided for both federal and state document review prior to entering the compound. Initial DEA inspection was also moved outside the compound and conducted in the queue approaching the Superbooth. The bypass lane provided a direct connection from the Superbooth to the ADOT weigh station. For commercial vehicles with proper federal and state documentation and permits, the Super-booth and bypass lane eliminated the need to enter the compound and significantly reduced travel time through the compound area. In effect, this change in the compound and process structure addressed the same travel time factors that EPIC was envisioned to address at its inception. However, this change in the compound structure applies to both EPIC and non-EPIC vehicles.

The implementation of the Superbooth altered the analysis of travel time through the compound area. EPIC vehicles were no longer required to enter the compound for state functions. A new data collection plan was developed to provide for an assessment of a baseline condition for non-treatment vehicles and an evaluation of the impact of EPIC on treatment vehicles under the new compound structure.

5.2.1 Data Collection Procedure

A process for acquiring data for both treatment and non-treatment vehicles was developed to provide information for both a baseline condition and a treatment condition during the EPIC FOT with the Superbooth in operation. The data collection process was tested during February of 1998, and fully implemented for the data collection period of March 1 through May 3 1, 1998.

Data for the analysis of vehicle travel time through the compound area during the FOT were provided primarily by the elements of the EPIC data collection and database management capabilities. Data were accumulated on a daily basis within the EPIC database and downloaded periodically into a separate database for analysis.

Treatment and non-treatment vehicles were equipped with transponders that contained a vehicle identification number. Five electronic readers were placed within the compound area at strategic locations as part of the FOT and the transponder signal was read by each reader as the vehicle passed the reader location. Included in the database was the date and time of day to the nearest second that the signal from the transponder was detected by each of the readers. This provided the basis for determining the travel time between points within the compound area.

The difference between treatment and non-treatment vehicles in the sample was the data contained in the EPIC database for each of the vehicles. Treatment vehicles were fully enrolled in the EPIC process and the database of each vehicle contained the information required for State of Arizona processing (i.e., verification of insurance, verification of a safety inspection, driver's license information, and trip permit information). Non-treatment vehicles had no such vehicle or permit information in the database and were therefore the same as all other vehicles in the commercial traffic except for the presence of a transponder with a vehicle identification number, The database for all vehicles with transponders (treatment and non-treatment) contained the name of the trucking company (or carrier) that owned the vehicle, and the status of the vehicle. The status of the vehicle indicated whether a vehicle was a treatment vehicle (status = 1) or a non-treatment vehicle (status = 3).

Initially, three carriers with six vehicles were recruited as treatment vehicles, and two carriers with 17 vehicles were recruited as non-treatment vehicles. It was intended that during the FOT the non-treatment vehicles would be phased in as treatment vehicles, so that by the end of the FOT all vehicles with transponders would be treatment vehicles. However, the process for completing the enrollment of the non-treatment vehicles was not accomplished by the end of the FOT. Therefore, throughout the entire data collection period for the FOT there were six treatment and 17 non-treatment vehicles in the commercial fleet passing through the compound area.

Four of the five readers were used to track vehicles entering the U.S. from Mexico (northbound traffic) and one was used to track vehicles leaving the U.S. going into Mexico (southbound traffic). A brief description of each location is provided below.

- Reader 1 was the advance reader for northbound traffic located on the north side of the Mexican customs compound.
- Reader 2 was located at the primary entrance gate to the Mariposa compound, and included the lane used for Superbooth traffic as well as the lanes to the primary entrance.

- Reader 3 was located at the exit gate from the Mariposa compound.
- Reader 4 was located at the ADOT weigh station outside the compound.
- Reader 5 was located adjacent to the southbound roadway going into Mexico and was placed to detect vehicles returning to Mexico.

Data on the total traffic volume entering the compound on a daily basis were provided by U.S. Customs. Daily data on the volume of traffic using the Superbooth, the traffic volume cleared at the Super-booth to proceed directly to the ADOT weigh station, and the volume of traffic directed to enter the compound from the Superbooth were provided by ADOT These data were used to provide a general background context of traffic operations in the compound area in comparison to the traffic volume of both treatment and non-treatment vehicles. Data for the distribution of Superbooth traffic between being cleared to the ADOT weigh station and being directed into the compound were only available for April and May of 1998. Therefore, the presentation of total traffic volume data, and the percent of traffic using the Superbooth is confined to this two month period instead of the three month period used for the analysis of travel time.

5.2.2 Travel Time Data Review

Information is presented in this section to provide the appropriate background for the analysis of the impact of EPIC on travel time through the compound. Information is provided on the amount of data reported by the EPIC system for treatment and non-treatment vehicles, the results of the quality control of the data, and other issues regarding the travel time data used in the analysis.

Table 5 provides a summary of the quantity of data reported by the EPIC system on vehicle travel through the compound area. The data collection period consisted of 92 days, with the compound open 78 of those days. Data were reported for 66 of those 78 days (85 percent of the days). For 12 days (15 percent of the days the compound was open) EPIC system problems resulted in no data reporting.

The data recorded in the EPIC system consisted of individual records for each time a transponder was detected by a reader. Each record consisted of data including the vehicle identification number, transponder identification number, carrier name, status of the vehicle (treatment versus non-treatment), the date, the time to the nearest second, and the reader number (1 through 5 as described above). Records were grouped by vehicle identification number, date, and time of day to track vehicles through the compound area and determine whether or not a legitimate northbound movement (henceforth referred to as an event) of a commercial vehicle had occurred.

Not all groupings of records resulted in events for several reasons. First, each vehicle was not always detected by each reader along its path, and there is no way of knowing how often or specifically when this occurred. Second, often times vehicles were detected

only by reader 5, or by reader 5 and reader 1 in that time sequence, indicating the vehicle was southbound entering Mexico. Third, some vehicles were only detected by reader 1 with no other evidence that they entered the compound area. With a detection at only reader 1 there is no way of knowing whether a vehicle was north or southbound because reader 1 would detect transponders on vehicles moving in either direction.

Table 5
Summary Information on EPIC System Data

Days in Data Collection Period	92
Days Compound Open	78 (1)
Days with Data Reported	66
Days with No Data Reported	12 (2)

	Vehicle Type	
	Treatment (Status = 1)	Non-Treatment ('status = 3)
Records Reported	749	957
Events Reported	192	250
Complete Events	83	136
Usable Complete Events (Sample sizes for the analysis)	67	107
Events per Day	2.9	3.8
Complete Events per Day	1.3	2.1
Usable Events per Day	1.0	1.6
Total Vehicles Equipped	6	17
Total Carriers	3	2

(1) The compound is closed on Sunday.
(2) The system failed to record data on May 10, and for the period April 24 through May 6, 1998.

Each event represented a condition where the vehicle was detected by reader 1 and either reader 3, 4, or 5 in the proper time sequence (indicating the vehicle did pass through the compound area in a northbound direction), was detected by reader 2 only (vehicle was at

the compound entry gate and is assumed to have either entered the compound or proceeded to the ADOT weigh station), or was detected by reader 3 only (vehicle was leaving the compound and was assumed to have passed readers 1 and 2).

Each event was interpreted as a condition where a vehicle was actually moving northbound into the U.S. either through the compound or passed the Superbooth and moved directly to the ADOT weigh station. A total of 192 events for treatment vehicles and 250 events for non-treatment vehicles were identified in the data. This translates to 2.9 events per day for treatment vehicles and 3.8 events per day for non-treatment vehicles. However, as described below, not all of the identified events were useable in the travel time evaluation.

Each event was further investigated to determine whether or not the vehicle travel time through the compound area could be determined. This required detection by reader 2 and either reader 3 or 4. Vehicles detected by reader 2 and 3 traveled through the compound. Vehicles detected by readers 2 and 4 only were initially assumed to have traveled past the Superbooth and directly to the ADOT weigh station without entering the compound. However, upon investigation this assumption did not always appear to be correct. A vehicle traveling past the Superbooth to the ADOT weigh station looked the same in the database as a vehicle that entered the compound but was not detected by reader 3, except perhaps for the elapsed travel time between reader 2 and reader 4. In each case the database contained detection records at readers 2 and 4.

A more detailed evaluation of the quality of the travel time data for the recorded events was also conducted. This evaluation revealed some problems with several of the events for both treatment and non-treatment vehicles. The travel time for treatment vehicles from reader 2 to reader 4 appeared inexplicably long for 14 events, ranging from approximately 18 minutes to 76 minutes (see Figure 7). This is unusual because the direct travel time between readers 2 and 4 should typically take no more than three to four minutes. This indicates that these vehicles were delayed, stopped, or entered the compound (and were not detected by reader 3) for some reason. It is unknown whether this lengthy travel time was related in any way to federal or state processing functions, or resulted from some other reason. Therefore, these events were considered outliers and were not included in the travel time analysis. The travel time for treatment vehicles from reader 2 to 3 was reviewed and all events appeared usable (see Figure 8).

Figure 7

Travel Time for Treatment Vehicles - Reader 2 to Reader 4

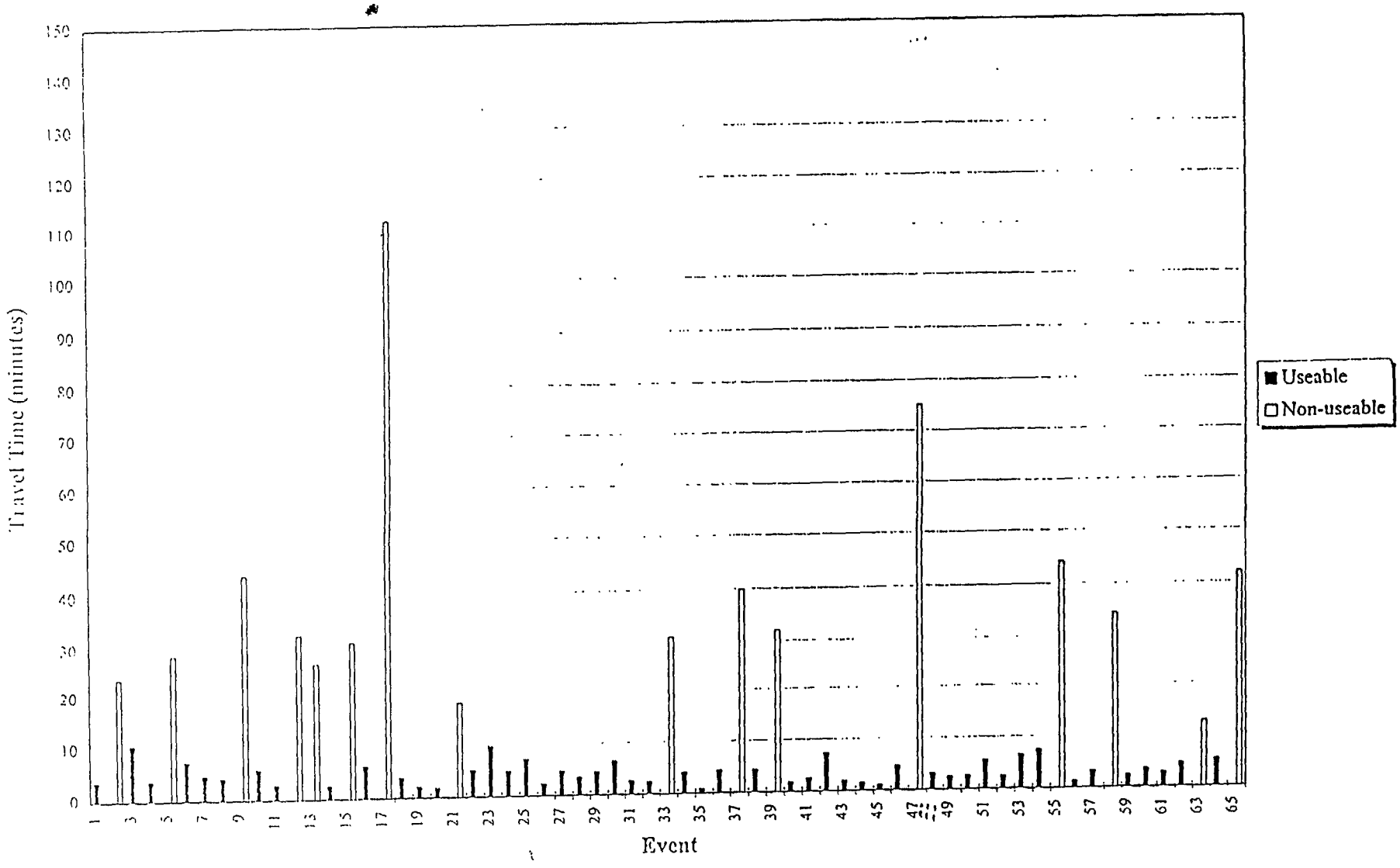
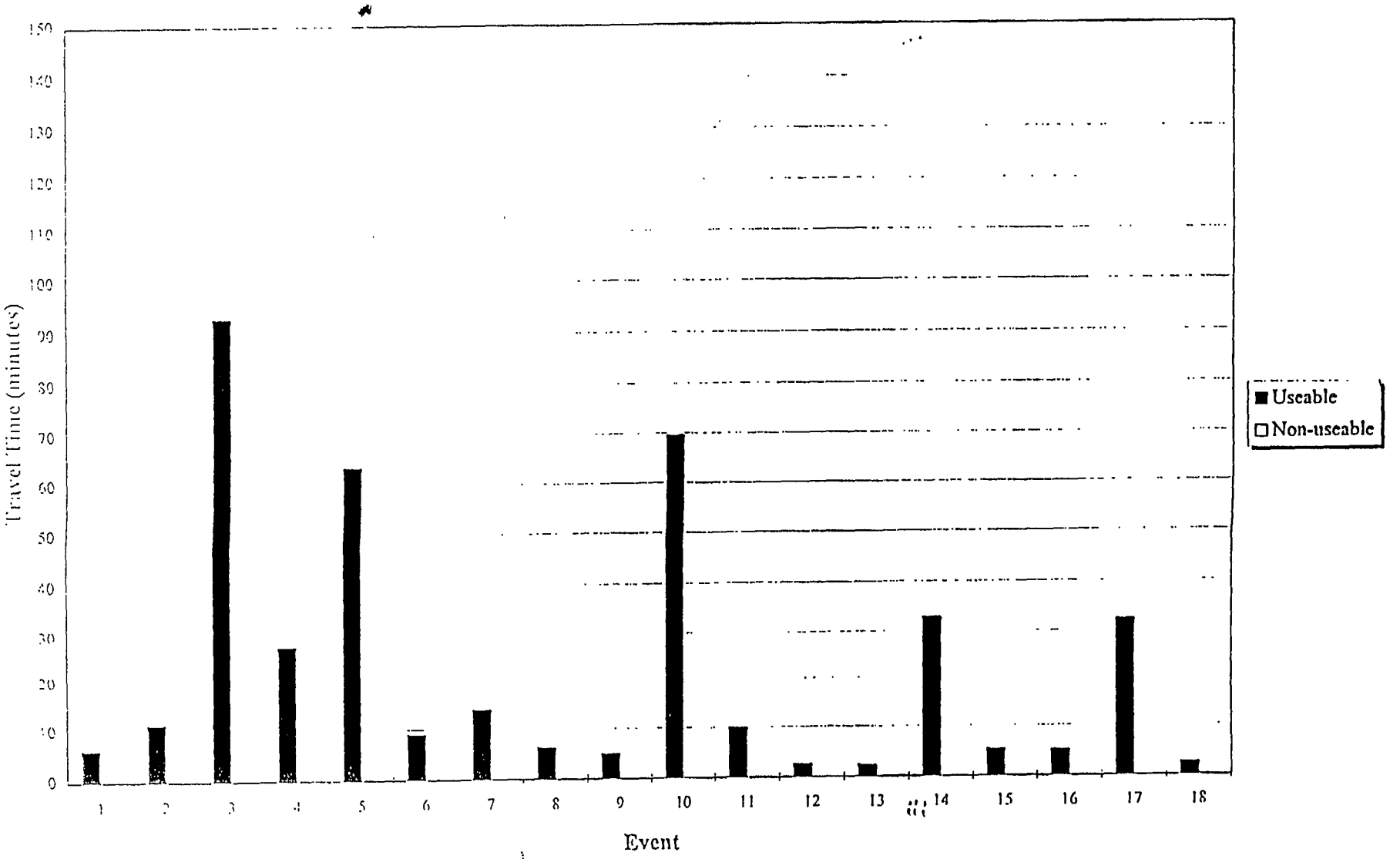


Figure 8

Travel Time for Treatment Vehicles - Reader 2 to Reader 3



For non-treatment vehicles, the travel time from reader 2 to reader 4 appeared inexplicably long for 22 events, ranging from approximately 12 minutes to nearly five hours (see Figure 9). These events were also eliminated from the travel time analysis for the same reasons as stated above for the treatment vehicles. Also for non-treatment vehicles the travel time from reader 2 to reader 3 appeared inexplicably short for seven events, ranging from 4 to 27 seconds, with a group of five events on March 18th at 4 seconds each (see Figure 10). Considering the configuration of the compound and the type of vehicles being tracked, these short travel times were considered a system malfunction and were eliminated from the evaluation of travel time.

After careful review and quality control of the data and elimination of events as either incomplete or having questionable travel time information, there remained 67 useable complete events for treatment vehicles and 107 for non-treatment vehicles. These useable events were carried forward to the analysis of travel time through the compound area. This resulted in one useable event per day for treatment vehicles and 1.6 useable events per day for non-treatment vehicles.

5.2.3 Traffic Volume Data

Figure 11 provides a summary of the commercial vehicle traffic volume flow through the compound area for April and May of 1998. Figure 11 also shows the distribution of traffic between the Superbooth and the primary compound entry gate, and the amount of traffic directed from the Super-booth into the compound. These data do not include the month of March because the distribution of traffic from the Super-booth between the ADOT weigh station and the compound was not available. Total traffic volume data were provided by the U.S. Customs Service and the data for Superbooth activity were provided by ADOT.

Over fifty-five thousand commercial vehicles passed through the Mariposa compound area from Mexico during April and May combined. The average number of trucks passing through the compound area was 1,067 per day. Twenty-nine percent of the trucks used the Super-booth, with 90 percent of these trucks being released to the ADOT weigh station and only 10 percent directed into the compound. Therefore, a total of 74 percent of the total traffic entered the compound for processing, and 26 percent of the total traffic was released by the Super-booth to the ADOT weigh station.

The number of trips by treatment vehicles through the compound was less than 0.3 percent of the average daily traffic based on 2.9 events per day. Non-treatment vehicles accounted for 0.36 percent of the average daily traffic entering the compound based on 3.8 events per day. This is a very small sample space as a percent of the population of trucks entering the compound.

Figure 9

Travel Time for Non-Treatment Vehicles - Reader 2 to Reader 4

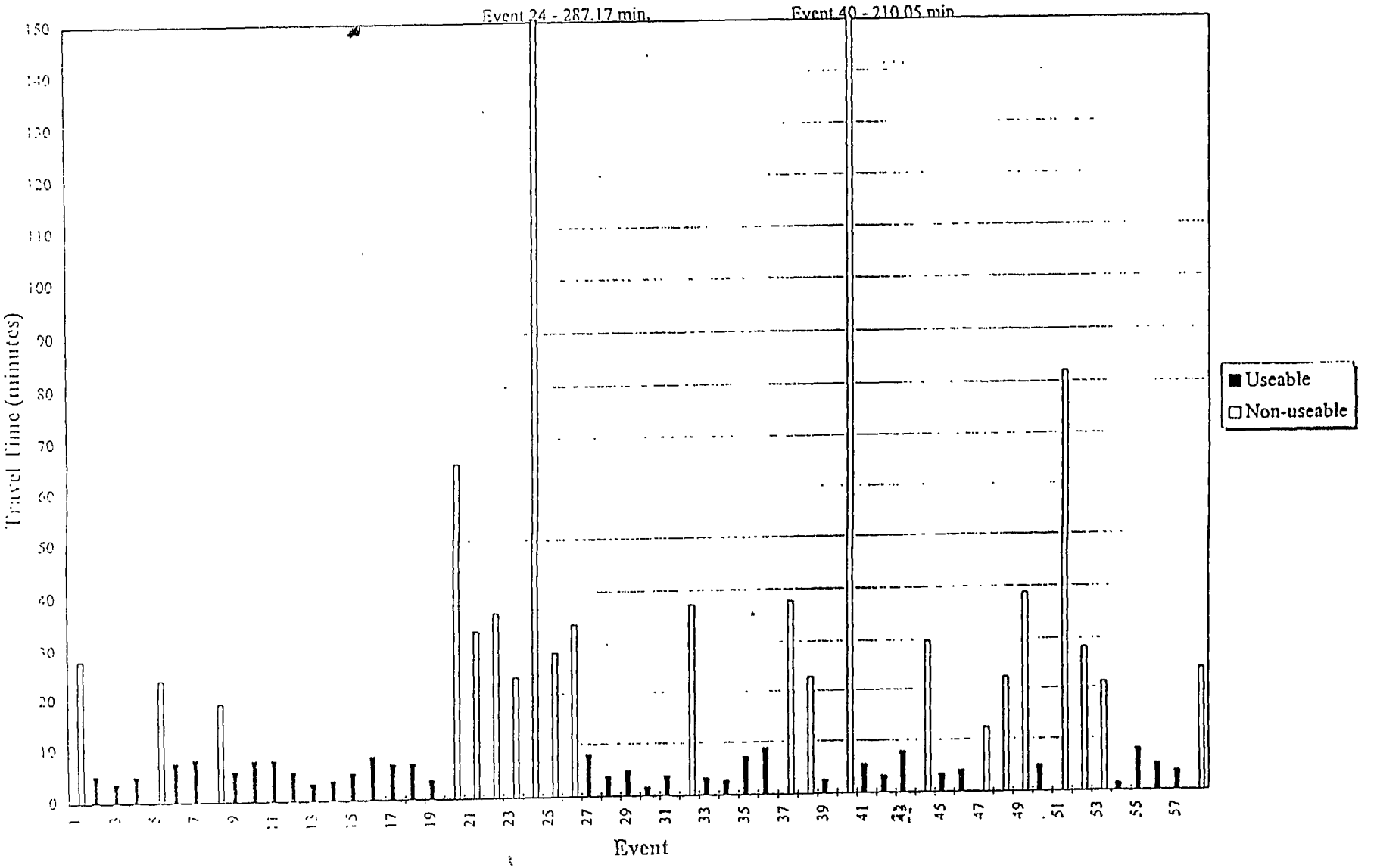


Figure 10

Travel Time for Non-Treatment Vehicles - Reader 2 to Reader 3

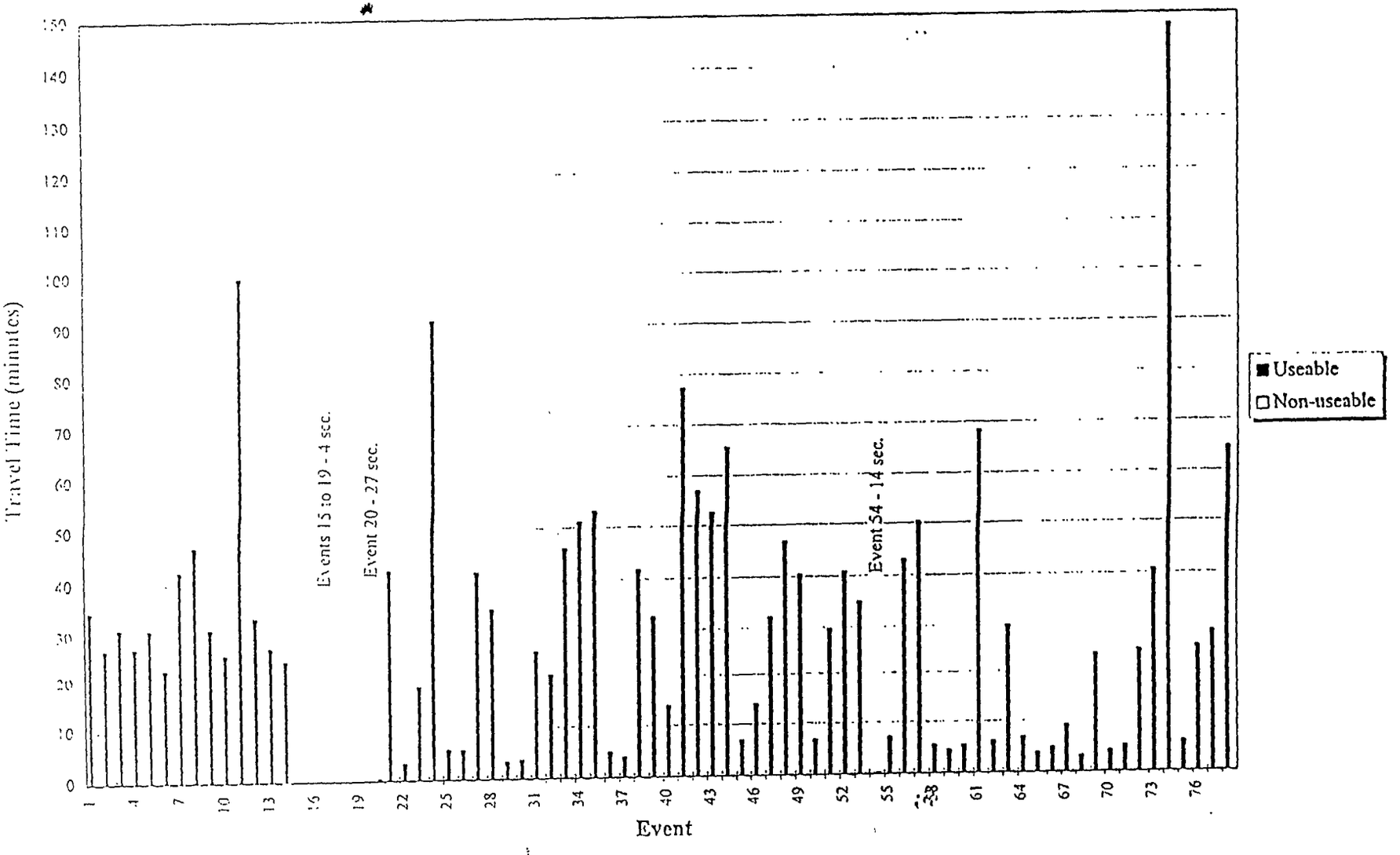
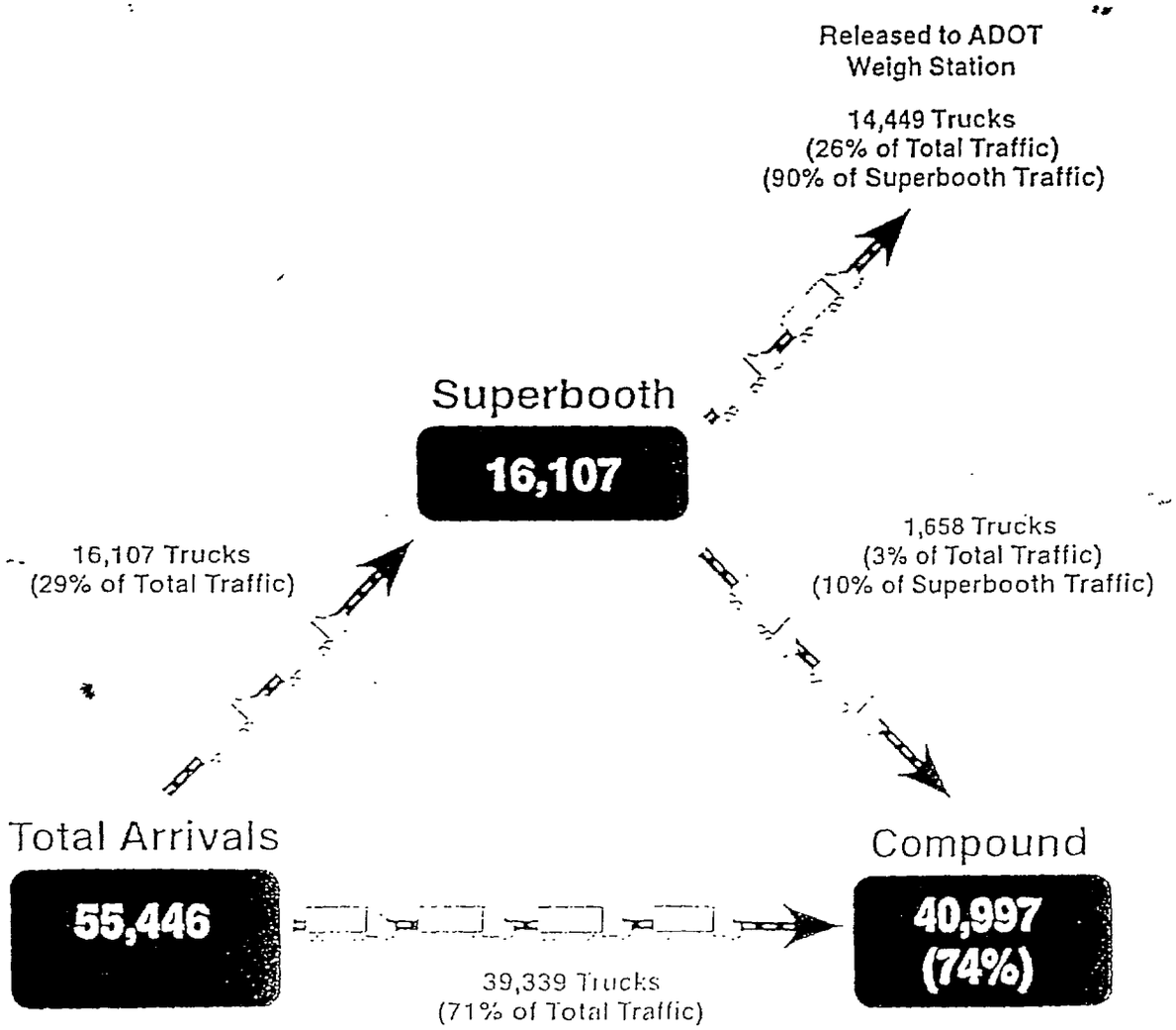


Figure 11
Northbound Commercial Vehicle Traffic Flow
Nogales Port of Entry Mariposa Compound
during April and May 1998

Total Trucks Served:	55,466
Total Days of Operations:	52
Average Trucks Served per Day:	1,067
Trucks Served by Superbooth:	16,107 - 29% of Total
Trucks Cleared at Superbooth:	14,449 - 90% of Superbooth Traffic 26% of Total Traffic
Total Trucks Entering Compound:	41,017 - 75% of Total Traffic



5.2.4 Travel Time Analysis Results

The Arizona Port Efficiency Study (ADOT 1997) contained an evaluation of the travel time of vehicles through the Mariposa compound during the week of May 28 through June 5, 1997, before the installation of the Superbooth and the bypass lane. During that week the traffic volume entering the compound averaged approximately 800 vehicles per day, 1.3 percent more than the 790 daily average for this study during April and May of 1998 (74 percent of 1,067). The Arizona Port Efficiency Study (APES) reported an average travel time through the compound of 35.8 minutes per vehicle (page 5-28).

Figures 12 through 15 provide the frequency distributions for the data used in this analysis. A summary of the travel time statistics generated from the analysis of travel time data from this study is provided in Table 6.

Travel time through the compound for non-treatment vehicles averaged 30.7 minutes per vehicle. This average travel time is comparable to, but less than the value reported in the APES study. The sample size in this study was much smaller (71 vehicles) than that used in the APES (over 650 observations). Given that the daily traffic volume entering the compound was approximately the same for the APES and for this study, there is no reason to attribute the difference in travel time through the compound to a reduction in traffic volume entering the compound due to the Super-booth. Therefore, the basis of comparison for the improvements in travel time used in this analysis was the non-treatment vehicle travel time determined in this study.

Overall, the implementation of the Superbooth and bypass lane along with the preclearance of vehicles by Customs has provided a tremendous time savings compared to travel through the compound. On average the preclearance to use the Superbooth appears to save approximately 25.5 minutes per vehicle for non-treatment vehicles in this study in comparison to travel through the compound. In addition, the standard deviation of travel time through the compound is much greater (26 minutes compared to 2 minutes).than for travel passed the Superbooth directly to the ADOT weigh station. Therefore, the potential for delays beyond the average travel time is much greater when traveling through the compound.

However, the treatment vehicles appear to have a travel time advantage through the compound area. First, only 27 percent of the treatment vehicles traveled through the compound compared to 66 percent for the non-treatment vehicles. Therefore, it appears that the likelihood of entering the compound was much less for the treatment vehicles, resulting in an overall average travel time savings of approximately 10 minutes per trip for all treatment vehicles in comparison to all non-treatment vehicles. It is cautioned that this travel time savings may not be related to enrollment in the EPIC program. There may have been other differences between the treatment and non-treatment vehicles that may have resulted in a higher percent of non-treatment vehicles entering the compound. For example, the treatment vehicles were all from maquiladoras which only haul their own manufactured products, cross the border at regular intervals, and use the same drivers.

Figure 12

Travel Time for Treatment Vehicles - Reader 2 to Reader 4

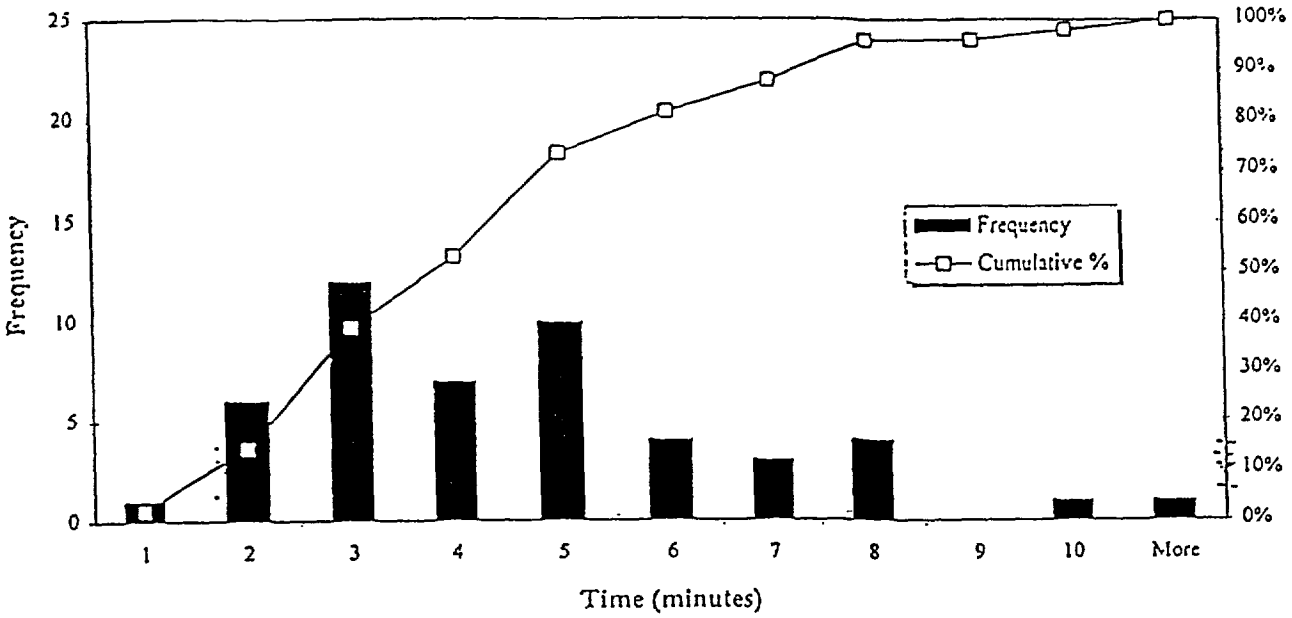


Figure 13

Travel Time for Treatment Vehicles - Reader 2 to Reader 3

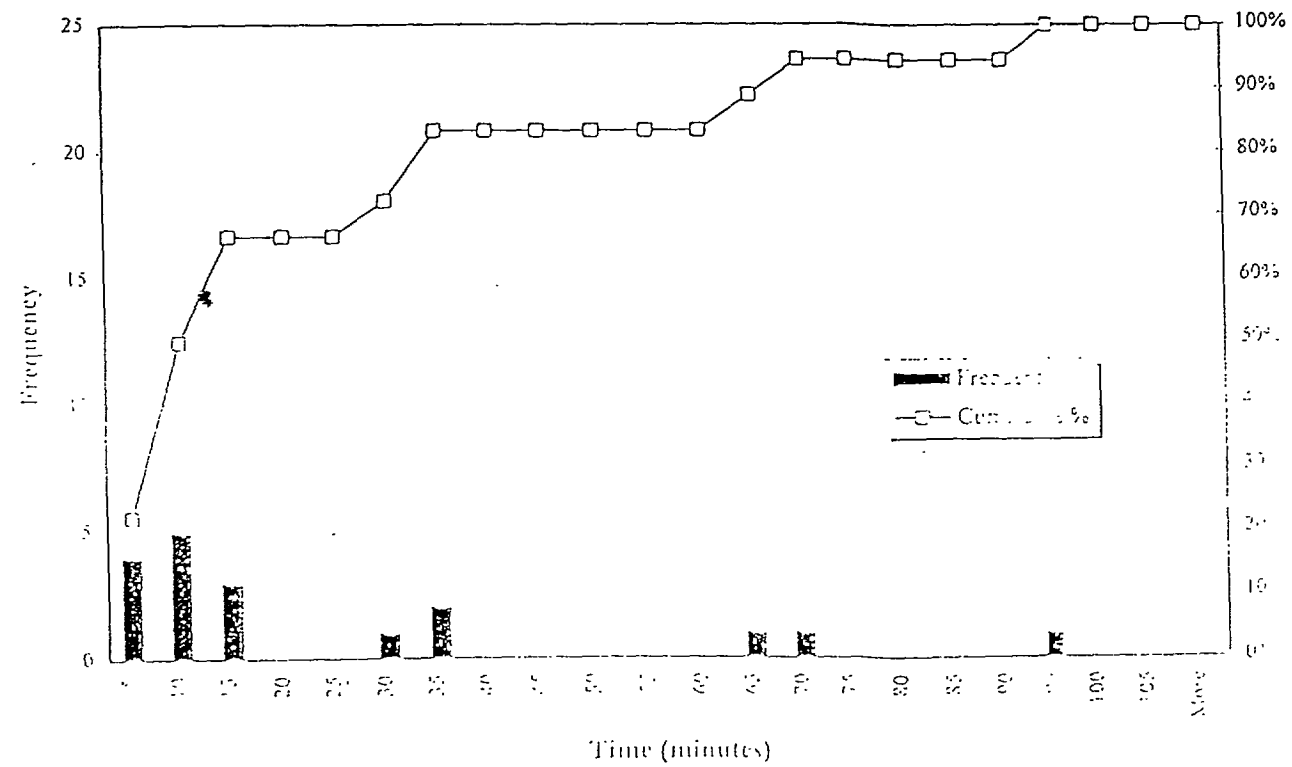


Figure 14

Travel Time for Non-Treatment Vehicles - Reader 2 to Reader 4

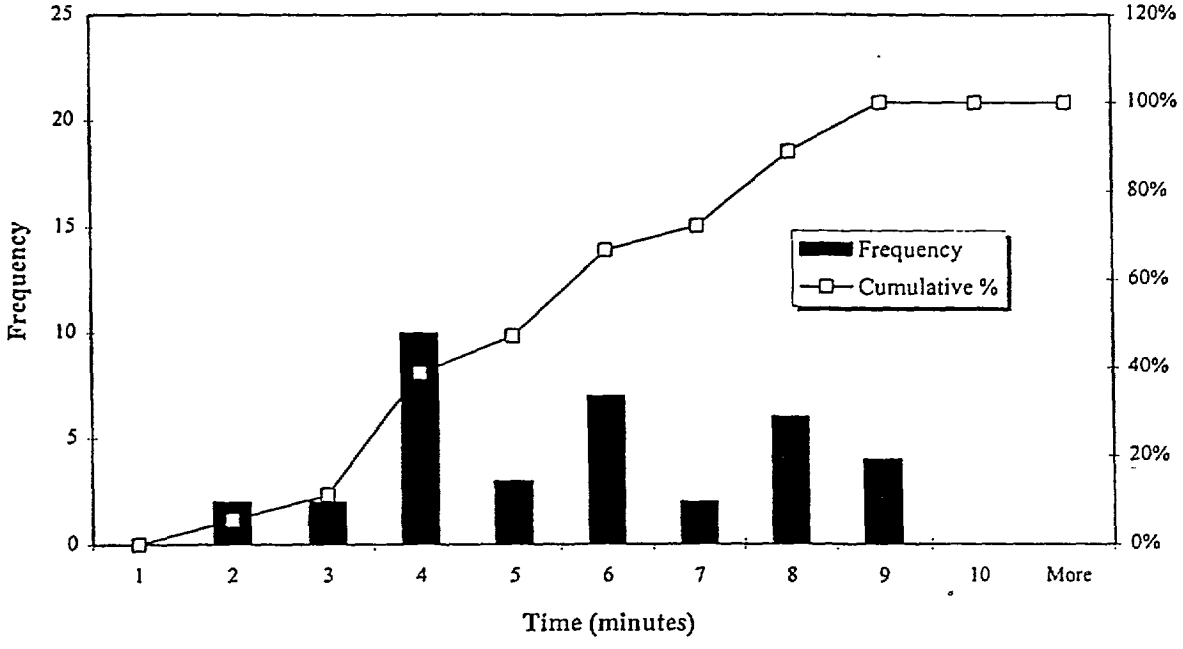


Figure 15

Travel Time for Non-Treatment Vehicles - Reader 2 to Reader 3

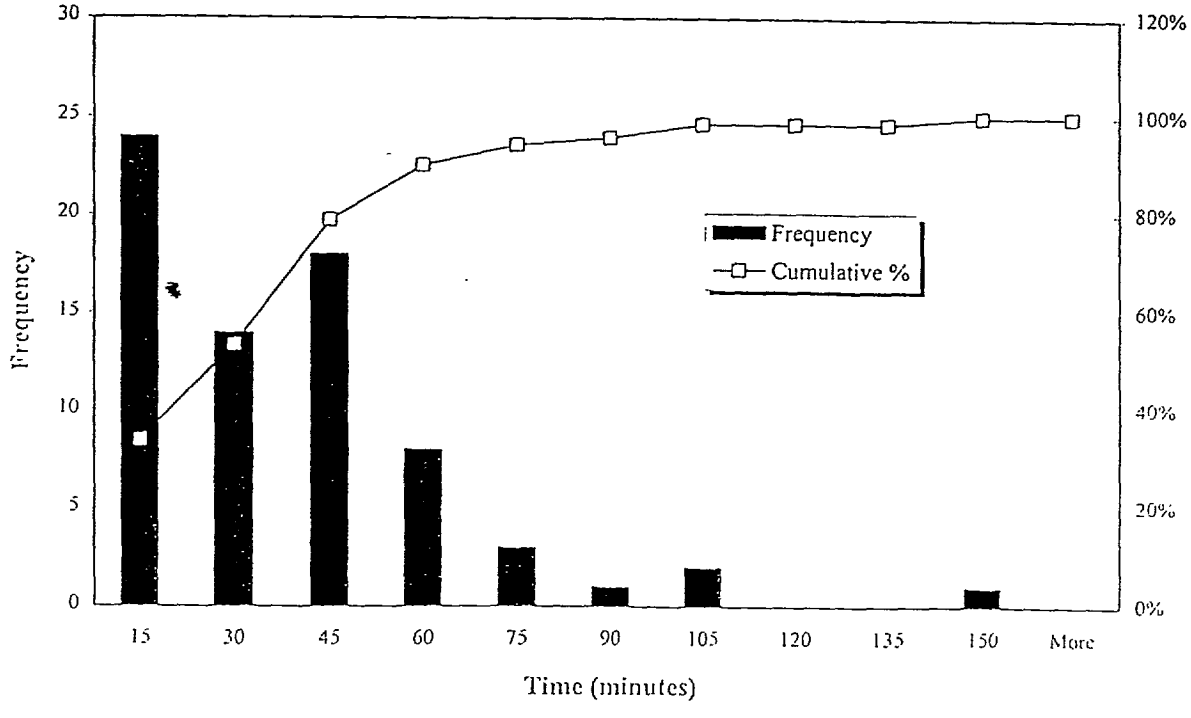


Table 6
Travel Time Summary Statistics

		Vehicle Type	
		Treatment	Non-Treatment
Travel From	**Events**	**49**	36
	Median time (minutes)	3.8	
Reader 2 to 4	Mean Time (minutes)	**4.1**	5.2
(Superbooth to weigh station)	Standard Deviation (minutes)	2.2	2.1
	Minimum time (minutes)	0.9	1.5
	Maximum time (minutes)	10.7	8.9
Reader 2 to 3	**Events**	18	71
(entry gate to	Median time (minutes)	9.6	27.4
exit gate)	Mean Tie (minutes)	22.2	30.7
	Standard Deviation (minutes)	26.9	26.2
	Minimum Time (minutes)	2.3	3.2
	Maximum time (minutes)	93.0	147.9
	Overall Mean (minutes)	9.0	19.1

For vehicles that did not enter the compound, but traveled directly from the Superbooth to the ADOT weigh station, there appears to be a slight time advantage for the treatment vehicles. On average the travel time between reader 2 and reader 4 was 1.1 minutes less (21 percent) for the treatment vehicles. The difference in the mean travel time for this condition was determined to be statistically significant at a 0.05 level of significance using a T-test of means. From a practical standpoint the result may not be viewed as meaningful. However, on a typical day in April or May, if all of the vehicles passing the Superbooth that move directly to the ADOT weigh station saved 1.1 minutes in travel time on average this would result in 5.7 vehicle-hours of travel time saved per day (based on an average of 309 vehicles served per day), Treatment vehicles that did not enter the compound had the lowest average travel time through the compound area.

For vehicles that entered the compound, the treatment vehicles also appeared to have a travel time advantage. Treatment vehicles that traveled through the compound took 8.5 minutes less time (27.7 percent) on average than non-treatment vehicles. Here again the difference in the means is statistically significant based on a T-test of means at a 0.05 level of significance. This reduction in travel time through the compound is comparable to the anticipated travel time savings through the compound discussed earlier ifvehicles were not required to park within the compound for reasons of obtaining a state permit (see Section 5.1). It may be that fewer of the treatment vehicles were required to stop within the compound. It is cautioned that it is not certain that this travel time savings is entirely attributable to enrollment in the EPIC program. There were other differences between the treatment and non-treatment vehicles that may have contributed to this result.

5.2.5 Summary

The FOT did not provide the most desirable technical environment for the evaluation of the impacts of EPIC technology on travel time through the compound area. Several aspects of the FOT fell short of system characteristics that were originally envisioned when the evaluation plan was designed, and these shortcomings directly affected the evaluation process and may have affected the results. These shortcomings are briefly described below:

- The EPIC system was originally designed for a compound configuration and traffic flow pattern that was different than those that existed during the FOT.
- There were too few carriers, treatment vehicles, and non-treatment vehicles involved in the FOT in comparison to the population of vehicles moving through the compound. The sample sizes are very small, and the relatively rare appearance of an EPIC vehicle in the traffic stream made it impossible to track vehicles manually to verify data provided by the system.
- There were other differences between the treatment and non-treatment vehicles, besides enrollment in EPIC, that may have affected the travel time results These differences may include, the type of motor carrier (maquiladora versus for-hire), the type of goods transported (manufactured

products versus agricultural and general freight), driver turnover, and frequency of border crossings.

- EPIC system malfunctions significantly reduced the availability of data for treatment and non-treatment vehicles, and raised questions on the validity of reported data. No data were reported for at least 15 percent of the data collection period. There appears to have been numerous reader malfunctions affecting an unknown amount of data, and raising questions about the validity of the vehicle travel route through the compound area indicated by the data. There was no way to verify whether a vehicle detected at reader 2 and reader 4, but not at reader 3 was actually in the Superbooth lane and did not enter the compound.
- The traffic counting element of the data system did not function as anticipated because the accoustic sensors were not functioning and did not provide any information on traffic volume by lane in the compound area on an hourly basis. This would have made it possible to compare travel times through the compound area for treatment-and non-treatment vehicles to total demand volume at the time the test vehicles were in the compound.

With consideration of the problems cited above, the following provides a brief summary of the results of the evaluation of the impacts of EPIC on travel time through the compound area.

The preclearance of vehicles to use the Superbooth and avoid entering the compound had the single most dramatic impact on travel time through the compound area for commercial vehicles. This feature alone reduces travel time by approximately 25 minutes on average (83 percent) in comparison to entering the compound for non-treatment vehicles.

The implementation of the EPIC technologies appears to be a good complement to the Superbooth in that treatment vehicles using the Superbooth had a 21 percent lower travel time than non-treatment vehicles (1.1 minutes lower on average). This could be a direct result of more rapid processing of treatment vehicles for State of Arizona purposes at the Superbooth. Treatment vehicles passing the Superbooth had the lowest travel time through the compound area.

Non-treatment vehicles that entered the compound had the longest travel time of all vehicles in the sample. Treatment vehicles that entered the compound had a significantly lower (8.5 minute, 27.7 percent) travel time through the compound than non-treatment vehicles. Treatment vehicles were also much less likely to enter the compound than non-treatment vehicles resulting in an overall average travel time savings of 10 minutes (52 percent) for treatment vehicles overall. However, it is unclear as to whether these latter two results are related to EPIC, and they may be a result of other differences in the treatment and non-treatment vehicles.

In general, it appears as though the EPIC concept did have the potential to reduce the processing time for vehicles through the compound area, and thus reduce vehicle travel

time for the compound design and traffic flow pattern that existed when the system technology design was first conceived. However, with the SuperBooth and bypass lane in place the potential for EPIC to provide reductions in travel time has been seriously compromised. Although the treatment vehicles did exhibit lower travel time through the compound area, only the difference in travel time past the SuperBooth in comparison to non-treatment vehicles appears related to EPIC. The likelihood of entering the compound, and travel time through the compound, while lower for treatment vehicles, could also be related to other differences in the treatment and non-treatment samples.

6. QUALITATIVE RESULTS

6. QUALITATIVE FINDINGS

Chapter 6 presents the ***qualitative*** results of the EPIC Operational Test evaluation with respect to a series of interview's with participating motor carriers and the Arizona Department of Transportation. In total, four motor carriers and one state agency were interviewed. Interviews were conducted at the participants place of business and follow-up phone calls were made to solicit more information where necessary. The interviews took place at the end of June, after the EPIC Operational Test was completed. Because of the limited number of test participants and their limited experience using the EPIC System, it is difficult to draw specific conclusions about EPIC. (For the complete interview questions please see Appendix C).

To provide a clear understanding of EPIC services, the EPIC participants are broken down between the one motor carrier who used EPIC to obtain single trip permits, and the other three motor carriers who did not use EPIC to obtain permits. This chapter is separated into the following sections:

- Dual plated motor carriers who ***did not*** need single trip permits (Section 6.1)
- Mexican registered motor carrier who ***did*** need single trip permits (Section 6.2)
- ADOT (Section 6.3)
- EPIC System Operator (Section 6.4)

6.1 Motor Carriers Survey Results
Annual Registration Companies (no single trip permits required)

This section presents the questions and responses for the three motor carriers who did not use the EPIC System to obtain single trip permits. Not every carrier was able to respond to each question. For example, one carrier never used the EPIC homepage, and others rarely used it for a specific purpose such as to check on a truck. These EPIC motor carriers were dual-registered in both the United States and Mexico (usually in the states of Arizona and Sonora). These companies paid annual registration fees to Arizona, and therefore did not need single trip permits.

6.1.1 EPIC Services Provided for Annual Registration Companies

For udal plated motor carriers, EPIC provided access to truck and compound information over the internet. This was supposed to included two cameras that showed the entrance and exit of the compound, and traffic data that would provide historical congestion information. This information was available to anyone who logged onto the EPIC homepage. However, as mentioned in chapter 3, the entrance reader never worked (which would have provided the number of trucks entering the compound), and the entrance camera was taken off-line at the request of U. S. Customs.

Additional data was available only to participating EPIC motor carriers. To access this information, carriers clicked on a specific link on the EPIC homepage and entered a password. These pages provided specific truck information including: location in the compound; time a

truck entered or left the compound; historical truck information including number of crossings (by specific truck or for an entire fleet); and number of times a truck went through the compound on a specific day. These carriers also had the option of having EPIC automatically notify, by e-mail, the shipper or receiver when a truck crossed the compound.

6.1.2 Participant Profile

Two of the three motor carriers were maquiladoras. They owned from one to three trucks and only transported goods produced at their plants to distribution centers in Arizona and brought parts and supplies back into Mexico. On average, each truck made one or two border crossings per day.

The other EPIC participant was a for-hire motor carrier with 27 trucks. Their truck fleet averaged about 75 border crossings each day. About 90 percent of their cargo was manufactured goods for the maquiladora industry, or supplies for the maquiladoras, and the remainder were agricultural products.

6.1.3 Summary of Interviews with Annual Registration Motor Carriers

These motor carriers believed the EPIC System provided limited benefits and they could not identify any border crossing time savings. There was some productivity savings for the maquiladora that used EPIC printouts to record truck trips, improving company record keeping. This company also received some benefits from the congestion information, especially real-time pictures of the compound. However, congestion information farther into Mexico would have been more useful. Maquiladoras usually have limited shipment windows, and, for the most part, know that during agricultural season the compound is always congested. One maquiladora bought radios to communicate with their drivers, limiting the usefulness of EPIC truck and congestion information.

Only one carrier, a maquiladora, used EPIC information on a regular basis. For the most part, the maquiladoras know where their trucks were and how long it took to cross the border. In general, these motor carriers participated in EPIC because they supported any new technology that may come on-line and were willing to participate in any test. One carrier believed that the EPIC System was supposed to help his trucks cross the border by providing information to ADOT Department of Public Safety (DPS) who are responsible for safety enforcement, limiting the number or length of safety inspections. EPIC did not provide information to DPS.

6.1.4 Interview Questions and Responses - Annual Registration Companies

One of these carriers never accessed any congestion or truck information available over the intemet. Their active participation in EPIC ended after enrollment and transponder installation. This company had very little flexibility to re-schedule their trucks, so congestion information was of no value. The other two motor carriers (both maquiladoras) did make some use of the congestion information. One carrier used the information as a log of truck activity (number and time of crossings). The other carrier seemed to access the congestion information out of a general curiosity. Neither carrier could identify any quantifable benefits from the EPIC System.

One company did like the idea of being able to notify the warehouse in Arizona when the truck reached the compound, but didn't want to take the time necessary (entering the data into EPIC) to request automatic notification be made.

Only one of the companies would recommend EPIC to other motor carriers. The other two were more ambivalent, saying they would recommend EPIC to other motor carriers if they had a need for the type of information provided, or if additional benefits or services were provided by EPIC.

Figure 16: Motor Carrier Rating of EPIC Services

	Level of Importance			Level of Satisfaction		
Functions	**3 Very Important**	**2 Somewhat Important**	**1 Not Very Important**	**3 Very Satisfied**	**2 Somewhat Satisfied**	**1 Not Very Satisfied**
Ability to access real time congestion information	✓	✓		✓	✓	
Ability to access specific company truck border crossing information		✓✓		✓		
Ability to automatically notify shippers of truck border crossings	✓		✓✓			
Ability to automatically notify receivers of truck border crossings	✓		✓✓			

These motor carriers found EPIC easy to use and thought the training provided was very adequate. The EPIC internet connection speed was acceptable. The EPIC server was available at all times with just a few minor disruptions. All participants have used the internet for business purposes prior to EPIC, primarily e-mail. None of the companies called the service center for assistance. The system operator was able to answer all questions during training and on subsequent visits. The only costs associated with test participation was identified as personnel time, which average about two hours for each company. The range of personnel time was from one to four hours. Training time and the enrollment process accounted for the majority of this time.

Figure 17: Motor Carrier Rating of EPIC Training

	4 Very Helpful	3 Somewhat Helpful	2 A Little Helpful	1 Not Helpful at All	0 Not Applicable/ No Opinion
Written User's Guide and Training Materials					✓
In Person Training	✓✓✓				
On-Line Training/Instructions	✓				✓
Service Center Assistance					✓✓

Motor carriers believe electronic systems, in general, can help lessen congestion and improve efficiency in processing trucks into the United States. However, they thought the main causes of congestion and delays were the lack of personnel and inadequate infrastructure. Specifically, the road in Mexico which leads to the compound is too narrow. Lack of parking spaces inside the compound was also mentioned as a cause of excessive delays. The narrow road and entrance area result in trucks, that, for example, could be processed more quickly through the SuperBooth, but were caught behind other trucks trying to enter the compound. Motor carriers said an increase in personnel and possibly lengthening compound operating times would provide the greatest reduction in congestion.

Participants believe electronic transfer of information would be beneficial only if more information such as cargo records were provided to enforcement agencies. One maquiladora thought a system should be developed for a motor carrier to weigh their trucks in Mexico and then by-pass the ADOT weigh station.

6.2 Survey Results - Mexican Registered Company (single trip permits required)

This section is for the one motor carrier that used EPIC to obtain single trip permits. They used EPIC to obtain a total of three single trip permits during the operational test.

6.2.1 Services Provided by EPIC for Mexican Registered Motor Carriers

A single trip is required for trucks which are only registered in Mexico. Only one Mexican registered motor carrier was recruited for EPIC. To obtain a single trip permit ***prior*** to EPIC, a driver would go to the ADOT MVD office located near the truck inspection facility and present credentials for insurance, a truck safety certificate, Mexican registration, and a CDL. The MVD officer would then enter the information into the ADOT database and issue a single trip permit to the driver. A single trip permit could also be processed by ADOT at the SuperBooth. Using the SuperBooth, a truck driver saves did not have to park his/her truck in the compound and go to the ADOT office.

To obtain a single trip permit ***using*** EPIC, the motor carrier supplied the credential information during enrollment and then requested a trip permit through the intemet. This request was done prior to the truck leaving for the border. The driver does not go to the MVD office and ADOT does not enter the information into their database or print out a copy of the permit.

6.2.2 Participant Profile

The motor carrier that used the EPIC System to acquire single trip permits is an agricultural hauler with 12 trucks. From November through March their fleet averaged about 20 crossings each day from Mexico into the United States. They had fewer trips in April and May, averaging about 9 crossings per day. During the summer and early fall, their trucks operate only within Mexico.

6.2.3 Summary of Interviews with Single Permit Motor Carrier

In general, this company was very positive about EPIC and felt it improved company efficiency and productivity. The time savings using EPIC was through the driver not having to stop at the ADOT trailer in the compound for a single trip permit. This time savings could be significant during agricultural season when parking spaces are at a premium. However, this motor carrier thought the SuperBooth provided the same time savings as the EPIC System. They found the EPIC System easy to learn and use. Using EPIC there was a slight increase in administrative time from requesting a permit be issued, estimated at about three minutes for each permit.

6.2.4 Interview Questions and Responses - Mexican Registered Motor Carrier

This motor carrier believed acquiring permits using EPIC increased the efficiency of company operations by reducing truck processing time in the Mariposa compound. They would like to continue to use EPIC and would recommend the system to other motor carriers. Although they rated the congestion information as valuable, they could not identify any specific benefits for their company. They also said that notifying shippers and receivers of truck border crossings was important, however they were not sure how often, or if they used this service.

Under their current process for obtaining permits, there is little, if any, office administrative time involved. Using EPIC, it was necessary for the motor carrier to enter trip detail information for each trip permit. The motor carrier estimated it took about three minutes to enter the required permit information into EPIC (this is done over the internet). The motor carrier believed the time savings from the driver not having to park the truck inside the compound outweighs the additional administrative time. The time it took to park the truck and receive a permit from ADOT was from eight to twelve minutes (see Chapter 5).

Figure 18: Motor Carrier Ratings of EPIC Services

	Level of Importance			Level of Satisfaction		
Functions	**3 Very Important**	**2 Somewhat Important**	**1 Not Very Important**	**3 Very Satisfied**	**2 Somewhat Satisfied**	**1 Not Very Satisfied**
Ability to issue single trip permits	✓			✓		
Ability to calculate permit fees	✓			✓		
Ability to print transaction activity reports		✓		✓		
Ability to access historical congestion information	✓				✓	
Ability to access real time congestion information				✓		
Ability to access specific company truck border crossing information			✓	✓		
Ability to automatically notify shippers of truck border crossings	✓			✓		
Ability to automatically notify receivers of truck border crossings	✓			✓		

Figure 19: EPIC Productivity Benefits

	4 Great Extent	3 Considerable Extent	2 Some Extent	1 Little or no Extent	0 No Opinion
EPIC has reduced use of staff resources in acquiring permits (increased productivity)			✓		
EPIC has increased the percentage of transports that successfully complete the border crossing processes without being delayed	✓				
Faster turnaround time between applying for and receiving permits	✓				

As with other motor carriers, this company found EPIC easy to use and thought the training was adequate. They have used the internet for business purposes prior to EPIC, primarily e-mail. This motor carrier did call the Service Center on one occasion when they were unable to submit data over the internet. They reported the Service Center was able to correct the problem the next day. The system operator was able to answer all questions during training and on subsequent visits. The only costs for this participant was for personnel time, which was estimated at three hours. The majority of personnel time was for training and the enrollment process. They thought other motor carriers would start using EPIC once they see it working and in use over a period of time,

Figure 20: Motor Carrier Rating of EPIC Training

	4 Very Helpful	3 Somewhat Helpful	2 A Little Helpful	1 Not Helpful at All	0 Not Applicable/ No Opinion
Written User's Guide and Training Materials					✓
In Person Training	✓				
On-Line Training/Instructions	✓				
Service Center Assistance	✓				

6.3 Survey Results - ADOT Motor Vehicle Division

This section presents the interview questions and responses for ADOT MVD.

6.3.1 Services provided by EPIC

ADOT only used EPIC to process single trip permits. Using EPIC, ADOT could check credentials required for a single trip permit (registration, insurance, safety certificate, CDL), before the vehicle reached the compound. The EPIC System also notifled the appropriate broker (by fax) responsible for the respective trip permit(s). The broker would then remit payment to ADOT Under current processes (not using EPIC), an ADOT officer entered the credential information into their database for each vehicle that required a single trip permit. Additionally, each ADOT officer was responsible for sorting permit applications by broker at the end of each shift so ADOT could verify proper permit fees were paid. EPIC provided a trip permit summary for ADOT at the end of each business day with the number of permits separated by broker which eliminated the need for ADOT to enter permit information and to sort each permit by broker.

6.3.2 Participant Profile

ADOT MVD was responsible for enforcing all Arizona truck and driver regulations (see Chapter 2 for more information). This included ensuring trucks have proper insurance, safety certificates, registration, and the driver has a valid CDL. Additionally, ADOT was responsible for collecting all applicable Arizona truck taxes and fees and ensuring all trucks met weight restrictions. If the vehicle was registered in Arizona, the truck must had a current state license plate. If the truck was registered only in Mexico, they must be issued a single trip permit by ADOT before the truck entered Arizona. All trucks were also weighed before entering Arizona. An ADOT officer usually checked each drivers CDL and other paperwork (proof of insurance, safety certificate, registration, and the drivers CDL) immediately prior to the weigh station where trucks were normally waiting in line. Paperwork was also checked at the SuperBooth.

6.3.3 Summary of Interviews with ADOT Staff

Because of various system and operational delays (see system operator interview), the ADOT staff only used EPIC to issue three electronic single trip permits. ADOT staff estimated they saved about two minutes for each permit issued using EPIC. ADOT staff identified the majority of time savings was from not having to enter the credential information into the ADOT database and printing a copy of the permit. If more motor carriers used EPIC, ADOT staff believed there would also be about a fifteen minute time savings for each officer by eliminating the need to sort permits by broker. For motor carriers that did not need single trip permits (vehicles registered in Arizona), ADOT staff did not use, nor could they identify any reason, to use EPIC. ADOT staff thought EPIC could provide benefits for Arizona registered motor carriers if additional information was provided. For example, a way to flag Arizona registered motor carriers with delinquent Use Fuel Tax accounts.

6.3.4 Interview Questions and Responses- ADOT

There were two ADOT employees who answered the interview questions. While all ADOT MVD employees were trained on EPIC, only a few actually used the system. For some questions, one or both respondents did not feel they had enough experience using EPIC to answer a particular question.

Figure 21: EPIC Compared With Customary Methods of Issuing Permits - ADOT

	Compared to your Customary Method of Issuing Permits/Credentials, EPIC is:				
	5 Significantly Better	**4 Somewhat Better**	**3 No Difference**	**2 Somewhat Worse**	**1 Significantly Worse**
Amount of time required to issue permits/credentials		✓	✓		
Convenience of issuing credentials/permits	✓	✓			
Convenience of receiving credentials/permits payments			✓	✓	
Accuracy in calculating credentials/permits taxes and fees					
Credential/permit approval rate	✓				

Note: Accuracy of calculating fees – the respondents felt EPIC was probably accurate, but they did not process enough to judge whether accurate or not.

Because of the limited number of ADOT Officers and scheduling requirements (ADOT must have at minimum one employee staffing the ADOT trailer, SuperBooth, the weigh station, and usually someone checking paperwork before the weigh station), this limits ADOT's ability to reduce staff resources even if more information was provided electronically. ADOT respondents did not believe using EPIC would reduce congestion in the compound, primarily because there were so many vehicles in a small area that all trucks were delayed, even those that could be processed more quickly. ADOT did find it a little more difficult using two processes to issue permits, but thought more familiarity with EPIC would ease any confusion.

Figure 22: Rating EPIC Benefits - ADOT

	Benefits				
	4 Great Extent	**3 Considerable Extent**	**2 Some Extent**	**1 Little or no Extent**	**0 Not Applicable/ No Opinion**
EPIC has reduced use of staff resources in issuing credentials/ permits (increased productivity)			✓	✓	
More consistent processing time (less variability in the length of Time it takes to issue credentials/ permits)				✓	✓
Increases in credential/permit application approval rates				✓✓	
Decreased vehicle congestion at the Arizona POE				✓	✓

The only benefit ADOT could identify using EPIC was the ability to issue single trip permits and print transaction reports. ADOT thought if EPIC information could be increased, for example to flag vehicles/drivers/ that may have credential problems such as drivers with expired CDL's, or motor carriers with Use Fuel Accounts in bad standing. This information would be applicable for vehicles that did not use EPIC for single trip permits. In general, ADOT could benefit from automatically providing as much information on driver and trucks as possible. This would allow ADOT personnel to focus on inspecting trucks and drivers which they have less information on.

Figure 23: Rating EPIC Benefits - ADOT

	Level of Importance			Level of Satisfaction		
Functions	**3 Very Important**	**2 Somewhat Important**	**1 Not Very Important**	**3 Very Satisfied**	**2 Somewhat Satisfied**	**1 Not Very Satisfied**
Ability to issue credentials/permits	✓	✓		✓	✓	
Ability to calculate taxes/fees		✓✓			✓	
Ability to print transaction activity reports	✓✓				✓	

ADOT personnel were trained in-person by the EPIC System Operator. The ADOT staff found the training very helpful and EPIC easy to use. Those who received training from ADOT supervisors rather then directly from the system operator, also found EPIC easy to use. In general, ADOT supported any new electronic system that could make their operation more efficient. ADOT personnel were generally comfortable operating computers and easily adapted to new technology.

Figure 24: EPIC Training

	4 Very Helpful	3 Somewhat Helpful	2 A Little Helpful	1 Not Helpful at All	0 Not Applicable/ No Opinion
Written User's Guide and Training Materials					✓✓
In Person Training	✓✓				
Service Center Assistance					✓✓

6.3 Interview Results - System Operator

The interview with the system operator, Lockheed Martin IMS, was done by telephone after the operational test was completed. Lockheed Martin IMS, in addition to developing the EPIC system and process, were responsible for recruiting EPIC participants, training test participants, and they staffed a service center to enroll carriers and answer participant questions. The main purpose of the interview was to focus on institutional or technical issues that arose during the operational test.

6.3.1 Delays Caused by Institutional issues and Business Practices

Verifying Insurance: The motor carrier who utilized EPIC to obtain single trip permits also used single trip insurance. ADOT required visual verification of the insurance certificate which is issued by the insurance company. As with the single trip permit, The motor carrier's broker was responsible for payment of the single trip insurance. Under the current process, the truck driver showed the insurance certificate to an ADOT officer when they acquired the single trip permit. Originally, using EPIC, the broker was supposed to fax proof of insurance to ADOT for verification before the EPIC vehicle reached the compound. However, the brokerage office in Mexico did not have a fax machine and it would have cost $3 to use a nearby fax. It was arranged for the motor carrier to use the SuperBooth, where the ADOT officer could visually inspect the insurance certificate. Solving this problem caused the greatest delay in not being able to issue more single trip permits.

Incomplete Permit Information: When the operational test began, the motor carrier would often enter incomplete information. Instead of trying to correct the information when notified by EPIC, they would have the driver obtain the permit in the compound.

Motor Carrier Operations: The motor carrier did not allow their dispatcher in Mexico to input the information required by EPIC for single trip permits. Instead, the dispatcher sent faxes to the motor carrier office in Arizona who would enter the information. The Arizona office was responsible for selling and distributing produce and was not familiar with truck operations. There was also some confusion because the dispatcher in Mexico kept track of their trucks by OEN number (an equipment manufacturing number), while EPIC and ADOT required license plate or VIN number.

6.3.2 Changes in EPIC During the Operational Test

Originally, all EPIC vehicles would use the EPIC internet connection to fill out and submit a trip detail form for each truck that crossed the border. The only way the company would get truck crossing information was to fill out the trip detail form. But motor carriers that did not need a single trip permit (all but one carrier), did not want to take the time to enter information for each tip. So the trip detail requirement was eliminated (except for the motor carrier that used EPIC to acquire single trip permits). Each company could still get vehicle information from EPIC because each truck had a transponder with a unique identifier number.

6.3.3 Communication With Participants

The system operator maintained a service center during the operational test. In addition to entering truck and company enrollment information into the database, they were available to answer any

questions EPIC participants had via a toll free telephone number. The service center only received a few calls from one company that never actually installed transponders. Another carrier called a couple of times with software problems, when entering the information and clicking on submit, the screen would not send the information. The service center was quickly able to resolve the problem.

6.3.4 Technology Issues

There were no problems with the EPIC intemet provider in Arizona. Once, the intemet connection was cut off because the phone company accidentally cut a cable. It took four days to fix that problem.

6.3.5 Recruitment

It was very difficult to recruit companies to participate in EPIC. When the scope of EPIC was modified to focus on state issues the result was a change of preferred carriers from primarily U.S. to Mexican. Additionally, the increase in data entry requirements for the motor carriers and the delay in NAFTA implementation compounded the recruitment difficulties. In retrospect, to gain support, the customs brokers should have been brought into the partnership much earlier in the project.

7. CONCLUSIONS

7. CONCLUSIONS

This chapter presents the evaluation conclusions and summary of results from the EPIC Operational Test. In addition to summarizing the evaluation results, each evaluation goal, objective, and hypothesis statements which guided the evaluation are presented. This chapter is separated into the following sections:

- Summary of Quantitative Findings
- Summary of Qualitative Findings
- Evaluation Lessons Learned
- Potential Uses for the EPIC System
- Evaluation Goals, Objectives and Results

7.1 Summary of Quantitative Findings

The EPIC FOT did not provide an ideal environment for the quantitative analysis of travel time through the compound area and an assessment of the impact of EPIC on travel time. Several factors affected the evaluation of travel time including the reconfiguration of the compound and traffic flow structure after EPIC had been designed and implementation had been nearly completed. The recruitment and enrollment of vehicles in the EPIC program did not proceed as envisioned resulting in fewer vehicles in the FOT process than originally anticipated. The combination of the low number of vehicles enrolled in the EPIC program and the intermittent failure of the EPIC data management system to track vehicles through the compound area resulted in a very small sample size for the analysis.

It does appear as though there was a difference in travel time through the compound area for treatment and non-treatment vehicles. This appears true for both vehicles using the SuperBooth and for vehicles entering the Mariposa compound. Treatment vehicles passing the SuperBooth and proceeding directly to the ADOT weigh station had a travel time that was 1.1 minutes (21 percent) lower per vehicle in comparison to non-treatment vehicles. It is possible that the reduction in travel time for this movement was a result of a lower processing time at the SuperBooth related to ADOT functions, and thus this benefit may be attributable to EPIC.

The likelihood that a treatment vehicle would enter the compound was lower by more than half (66 percent for non-treatment vehicles versus 27 percent for treatment vehicles) thus providing additional travel time savings. Treatment vehicles that entered the compound had a 8.5 minute lower (28 percent) travel time on average through the compound than non-treatment vehicles. This result is very consistent with the expectations for the improvement in travel time through the compound for EPIC treatment vehicles as a result of eliminating the need to park within the compound. These latter two results may not be related to enrollment in EPIC as other differences in the treatment and non-treatment vehicles may have been more influential contributory factors.

7.1.2 Summary of Qualitative Findings

Dual Plated Motor Carriers: For these trucks, which were registered in Arizona, the motor carriers could only identify limited benefits from participating in the EPIC FOT. There were some productivity savings for the maquiladora that used EPIC printouts to record truck trips, improving company record keeping. One company also identified as beneficial the congestion information, especially real-time pictures of the compound. The participating motor carriers have a limited ability to re-schedule when their trucks leave for the border so congestion information had a limited impact on their operations.

Mexican Registered Motor Carrier: In general, the one motor carrier that used EPIC to obtain single trip permits was very positive about the EPIC System **and** felt it improved company efficiency and productivity. Productivity improvement identified from EPIC was through the driver not having to stop at the ADOT trailer in the compound for a single trip permit. This time savings could be significant during agricultural season when parking spaces are at a premium. The SuperBooth appeared to have provided the same time savings as the EPIC System. There was a slight increase in company administrative time from requesting a permit be issued, estimated at about three minutes for each permit. Mexican registered motor carriers represent approximately 70 percent of commercial vehicles crossing the border during the agricultural season.

Arizona Department of Transportation: ADOT estimated they saved about two minutes for each permit issued using EPIC. The time savings was from not having to enter the credential information into the ADOT database and printing a copy of the permit. If more motor carriers used EPIC, ADOT believed there would also be about a fifteen minute time savings for each officer by eliminating the need to sort permits by broker. For motor carriers that did not need single trip permits (vehicles registered in Arizona), ADOT did not use, nor could they identify any reason, to use EPIC. ADOT personnel did find EPIC easy to use and were very supportive of electronic systems in general.

7.1.3 Potential Use of EPIC Services

Given the limited number of participants and transactions it was difficult to draw specific conclusions concerning the use of EPIC. In general, both motor carriers and ADOT expressed general satisfaction with EPIC and the potential use of electronic systems to improve traffic congestion at border crossings. EPIC showed the potential to both save time for motor carriers and improve administrative efficiencies for state agencies. The potential for EPIC is most apparent in issuing single trip permits. Since the majority of trucks crossing the border (at least during agricultural season) require single trip permits the aggregate time savings could be substantial and help reduce congestion.

With the recruitment difficulties for the EPIC FOT, it remains to be seen how readily other motor carriers would join EPIC or a similar system. For motor carriers who did not need single trip permits, both ADOT and the participating companies had a more difficult time identifying tangible

benefits using EPIC. Given the limited amount of benefits these motor carriers could identify it is doubtful they would be willing to pay a monthly fee or purchase transponders if EPIC were to be deployed. To justify EPIC for these motor carriers and for state agencies, it would be necessary to increase the benefits provided, this could be accomplished through increased vehicle safety information, insurance, flagging vehicles with delinquent tax accounts, or increased by-pass lanes.

The most useful information for annual'registration motor carriers was the general congestion information they received over the intemet, especially the real-time picture of compound traffic when it was available. ADOT could also benefit from the congestion and vehicle information provided by the MlST system. Congestion information would give ADOT additional data for administrative purposes, personnel planning, and traffic updates could help ADOT avoid bottle necks at the POE.

7.1.4 Evaluation Lessons Learned

Control Operational Test Changes: The physical and operating conditions of the FOT need to be contolled and held constant during the design, implementation, and evaluation phases of the test. In this FOT the physical and operating conditions of the compound changed significantly after the evaluation design had been completed and implementation had begun. This altered several aspects of the FOT and ultimately impacted the potential effectiveness of the technology to reduce vehicle-processing time within the compound.

Communication is ***Critical:*** When it is not possible to control changes, their effect on the system and the evaluation process should be communicated to the FOT participants as soon as possible. ***Consistent, effective communication between the system operator, the steering committee, and the evaluation team is of critical importance in any FOT.*** For example, in the EPIC FOT, delays were caused by motor carrier business practices (single trip insurance verification for instance) which not only delayed the FOT but changed the flow of the EPIC processes. These changes directly effected the type and quantity of evaluation data which, if communicated, the evaluation team could have adjusted for by changing data collection processes and interview questions. It is equally important for the evaluation team to keep the steering committee and the system operator aware of changes which could potentially effect how the evaluation is conducted.

Data Collection Methods: The data collection plan for the evaluation should not have relied entirely on the FOT technologies to provide the required data. While the primary functional aspects of the FOT may operate completely, the data retrieval and database management functions may not operate as well, and may require fine-tuning during the FOT evaluation phase. Reliance on the FOT technology for data collection can result in critical problems due to system failure. The accuracy of the data collected by the FOT technology should also be verified through an independent and parallel data collection process. At a minimum, the evaluation design should be considered when developing the system design.

Complete System Design Before Planning Evaluation: It is difficult to conduct a true before and after evaluation in a rapidly changing, uncontrolled environment, particularly if there is a long time between the before and after data collection. It would be better for evaluation purposes if the evaluation process could be designed after implementation and testing of the FOT technology. For example, though a process where the technology is "turned-off while the 'before" data are collected and then "turned-on" during the collection of the "after" data. This entire process should be accomplished over a reasonable time frame with extraneous factors being controlled for as much as possible.

Ensure Stakeholder Commitment and Communication: The border crossing process is controlled by numerous agencies which each have their own responsibilities, goals, and priorities. For a border crossing project of any type to succeed it is important that, prior to committing to a FOT, all agencies agree on the projects goals and objectives. Of equal importance is ensuring the local and regional offices of federal agencies have the support of their leadership (and vice-versa as well) before agreeing to participate in a FOT.

7.1.5 EPIC Goals and Objectives

The EPIC Evaluation sought to achieve specific goals and objectives. The goals and objectives were developed and adopted by the EPIC Steering Committee. The achievement of these goals and objectives were measured through data collected in support of evaluation factors and hypothesis statements. For the purposes of the evaluation, these terms were defined as follows:

- ***Goals*** were the ends toward which the evaluation effort was directed.
- ***Evaluation factors*** were the qualitative or quantitative measurements used to validate the objectives under consideration.
- ***Hypothesis statements*** were tentative assumptions made to test the logical or empirical evidence associated with evaluation factors. For example:
  If a hypothesis states that a certain test will show a difference in an evaluation factor, but testing did not show a statistically significant probability that such a difference existed, the hypothesis was rejected.
  If testing shows that there was a statistically significant probability that a difference existed, the hypothesis was accepted.

The following section presents the EPIC Goals, Factors, Hypothesis, and the Evaluation Results for each factor.

Goal 1: Evaluate EPIC System Effectiveness

Evaluation factor 1.1.1: Reduction in private and sector (brokers, motor carriers) cycle times to

accomplish border crossing processes.
Hypothesis: The EPIC -system will reduce private sector cycle times to accomplish border crossing processes as compared to current methods.
Results: Arizona registered companies did not perceive there were any time advantages using EPIC to cross the border (quantitative analysis did show some time benefits). For the Mexican registered company, there is a approximately ten minute time savings from not having to park in the compound and from the driver standing in line to receive a permit. This time savings is eliminated using the SuperBooth There is a slight increase in company administrative time using EPIC to enter the information for each trip and for the initial enrollment process.

Evaluation factor 1.1.2: Reduction in public sector cycle times to accomplish border crossing processes.
Hypothesis: The EPIC system will reduce public sector cycle times to accomplish border crossing processes as compared to current methods.
Results: To process single trip permits, ADOT estimated there was about a two minute time savings for each truck that uses EPIC from not having to enter the information into the ADOT database. ADOT did not use EPIC for any function for those trucks that were registered in Arizona.

Evaluation factor 1.2.1: The number of border crossing processes that are conducted (as a result of faster inspection times).
Hypothesis: The EPIC system will increase the number of border crossings that can be conducted (as a result of reduced inspection cycle times) as compared to current methods.
Results: Not enough trucks were processed using EPIC to test this hypothesis. There would probably be no difference for trucks that are registered in Arizona. For those that need single trip permits, the number of trucks that ADOT processes per ADOT officer could improve.

Evaluation factor 1.3.1: Increase in the convenience of submitting and receiving border crossing trip information.
Hypothesis: The EPIC system will increase the convenience of submitting and receiving border crossing trip information for both the private and public sector.
Results: For the public sector, EPIC could be more convenient by reducing the amount of paperwork involved for each permit issued. For the motor carrier, it is more convenient for the driver, but there is slightly more administrative work involved using EPIC.

Evaluation factor 1.3.2: Percent of border crossing processes that are completed using the EPIC system.
Hypothesis: No relevant hypothesis; percent of border crossing processes completed by the EPIC system was documented but not evaluated.
Results: Please see Chapter Five for the number of transactions completed using EPIC.

Goal 2: Evaluate the EPIC System Operation

Evaluation factor 2.1.1: Improvement in system accuracy.
Hypothesis: The EPIC system will improve the accuracy of border crossing trip information transactions as compared to current methods.
Results: Not enough vehicles were processed using EPIC to evaluate error rate. If there are any accuracy problems it would probably be during the initial enrollment process.

Evaluation factor 2.1.2: Acceptability of system on-line, interactive response speed.
Hypothesis: Private and public sector users will indicate that the EPIC system's response speed is acceptable.
Results: Both ADOT and the motor carriers indicated the intemet connection and software speed were acceptable.

Evaluation factor 2.1.3: Acceptability of system volume sensitivity.
Hypothesis: The EPIC system will be able to support increased trip information transaction volumes without degraded cycle times.
Results: Not enough permits were processed using EPIC to gauge volume sensitivity.

Evaluation factor 2.2.1: Acceptability of system availability at the times' desired.
Hypothesis: Private and public sector users will indicate that the EPIC system's availability is acceptable.
Results: Motor carriers reported few problems with system availability. The intemet connection or the homepage were shut down four times during the test period, only once for an extended time period (about 4 days).

Evaluation factor 2.2.2: Acceptability of instances and duration of scheduled and unscheduled maintenance.
Hypothesis: Private and public sector users will indicate that the EPIC system's instances and duration of scheduled and unscheduled maintenance are acceptable.
Results: Motor carriers had no problems with maintenance of EPIC. Once a motor carrier was not able to submit data because of a software problem which was quickly fixed. For the most part, all maintenance was done on-line.

Evaluation factor 2.2.3: Acceptability of operational interface.
Hypothesis: Private and public sector users will indicate that the EPIC system's operational interface is acceptable.
Results: Both ADOT and the motor carriers indicated that they were able to access and use EPIC through the intemet without any significant problems or delays.

Evaluation factor 2.2.4 Private and public sector users will indicate that the EPIC system's installation and maintenance environment is acceptable.

Hypothesis: EPIC system operators will indicate that the EPIC system's capability for supporting hardware and software upgrades is acceptable.
Results: Installation for motor carriers was done primarily on-line. ADOT reported the initial installation caused some minor disruption in daily operation.

Evaluation factor 2.2.5: Acceptability of training provided.
Hypothesis: Private and public sector users will indicate that the training provided on EPIC system is acceptable.
Results: Both the private and public sector participants indicated the training was acceptable. Almost all of the training was done in person by the system operator.

Goal 3: Determine the Physical Conditions and Requirements of the EPIC System
Evaluation factor 3.1.1: Operational test costs (including fixed and variable initial capital, transition, and operational).
Hypothesis: No relevant hypothesis; costs were documented but not evaluated.
Results: There were no significant costs, other then personnel time, associated with participation in the operational test.

Evaluation factor 3.1.2: Operational test configuration requirements (of private and public sector).
Hypothesis: No relevant hypothesis; requirements were documented but not evaluated.
Results: Private sector- PC, modem, intemet connection
Public sector- PC, intemet connection, AVI readers

Evaluation factor 3.2.1: Deployment costs (including fixed and variable initial capital, transition, and operational).
Hypothesis: No relevant hypothesis; costs were documented but not evaluated.
Results:

- PC's - about $2,000 (ADOT had three PC's for EPIC test, each motor carrier used one PC they already owned). Modem and intemet connection also required.
- Transponder readers- about $10,000 for each reader (six readers were used in this test).
- EPIC Software- development, testing, and final implementation for the FOT, about $275,000
- MIST system (not required to operate EPIC) about $3 10,000.
- Truck transponders- $83.5 0 each.
- Enrollment software- development, testing, and final implementation for the FOT, about **$600,000.**

Goal 4: Evaluate User Acceptance of the EPIC System
Evaluation factor 4.1.1: Private sector preferences (functions, design, use over current methods).
Hypothesis: Private sector users will indicate that EPIC system functions and design are acceptable and that they prefer to use the system over current methods.

Results: For single trip permits, the motor carrier expressed preference for using EPIC over the current methods.

Evaluation factor 4.1.2: Changes in private sector attitudes and behavior over time.
Hypothesis: Private sector users will demonstrate an improvement in attitudes and an increase in the ways in which they use EPIC system over time.
Results: Test did not last long enough for participants to evaluate over a long time period.

Evaluation factor 4.2.1: Public sector preferences (functions, design use over current methods).
Hypothesis: Public sector users will indicate that EPIC system functions and design are acceptable and that they prefer to use the system over current methods.
Results: Public sector participants did not believe they used EPIC enough to evaluate this factor. Based on their limited experience, ADOT personnel did believe EPIC improved permit issuance.

Goal 5: Document and assess institutional issues that arise during the epic operational test
Evaluation factor 5.1. 1: Private sector views (re: organizational, regulatory/policy, legal/liability, etc., issues) on the EPIC system and expedited border crossing.
Hypothesis: No relevant hypothesis; attitudes were documented but not evaluated.
Results: Private sector users found the major organizational issues involved coordinating with their import brokers for permit payment. The issues were resolved and both the motor carrier and broker felt the confusion was primarily because two different processes were being used to issue permits.

Evaluation factor 5.1.2: Private sector views (positive, negative) on ITS applications in general.
Hypothesis: No relevant hypothesis; attitudes were documented but not evaluated.
Results: In general the motor carriers were supportive of technology and have participated in other operational tests.

Evaluation factor 5.2. 1::Public sector views (re organizational, regulatory/policy, legal/liability, etc., issues) on the EPIC system.
Hypothesis: No relevant hypothesis; attitudes were documented but not evaluated.
Results: ADOT personnel were very supportive of EPIC and worked with the system operator to overcome the regulatory issues that arose during the test. Major organizational issues included coordinating between brokers and carriers concerning proof of insurance and billing for the permits. Both issues were resolved.

APPENDIX A - LIST OF ACRONYMS AND KEY TRUCKING TERMS

Glossary of Key Trucking Terms

Automatic Vehicle Identification (AVI) - identifies vehicles using light, microwave, or radio frequencies. Combines roadside receivers with on board transponders to automaticalIy identify vehicles.

Class I - VIII Trucks (Classification by Gross Vehicle Weight):

Class	GVW	Class	GVW
I	6,000 lbs. or less	V	16,001-19,500 lbs.
II	6,001-10,000 lbs.	V I	19,50 1-26,000 lbs.
III	10,001-14,000 lbs.	VII	26,001-33,000 Ibs.
IV	14,001-16,000 lbs.	VIII	33,001 lbs. or more

COFC - Container on (rail) flat car. A form of intermodal movement of freight.

Combination Vehicle - An equipment configuration which includes separate power unit (tractor) and at least one trailer.

Combined Gross Weight - The total unladen weight of a combination of vehicles plus the weight of the load carried on that combination of vehicles.

Commercial Drivers License (CDL) - A license issued to an individual by a state or other jurisdiction which authorizes the individual to operate a designated class of motor vehicles.

Commercial Motor Vehicle (CMV) - Any self-propelled or towed vehicle used on highways in intrastate or interstate commerce to transport passengers or property:

- if it has a gross vehicle weight rating of 26,001 or more pounds; or
- if it is designed to transport more than 16 passengers; or
- if it used to transport hazardous materials in quantity requiring placarding under federal regulations (49 U.S.C. App. 1801).

Commercial Trailer - A trailer used to handle freight in the transportation of goods for others; excludes house trailers, light farm trailers and car trailers.

Dolly - An auxiliary axle assembly having a fifth wheel used for the purpose of converting a semitrailer to a full trailer.

Domestic Intercity Truckin g - Trucking operations within the territory of the United States, including intra-Hawaiian and intra-Alaskan, which carry freight beyond the local areas and commercial zones.

Double - A combination of two trailers pulled by a power unit. Usually refers to a power unit pulling two 28' trailers. See also ROCKY MOUNTAIN DOUBLE and TURNPIKE DOUBLE.

DOT - Department of Transportation (DOT). Department responsible for establishing the nation's overall transportation policy. Each state also has own DOT.

DOT Authorized Motor Carrier - A **carrier** that **has** been registered with the Department of Transportation and assigned a DOT number.

Fifth Wheel - A device used **to connect a** semi-trailer and tractor.

Freight - Any commodity being transported.

General Freight Carrier - A carrier which handles **a** wide variety of commodities.

Gross Domestic **Product** - A measure of the money value of the goods and services becoming available to the nation from economic activity within the United States.

Gross Vehicle Weight (GVW) - The maximum allowable fully laden weight of a truck and its payload. The most common classification scheme used by manufacturers and by states.

Heavy Duty Truck - Truck with a gross vehicle weight generally in excess of 19,500 pounds (Class VI -VIII). Other minimum weights are used by various laws or government agencies.

Highway-User Fee or Tax - A charge levied on persons or organizations based on the use of public roads. Funds collected are usually applied toward highway construction, reconstruction and maintenance. Examples include vehicle registration fees, fuel taxes and weight-distance taxes.

Intercity Trucking - Trucking operations which carry freight beyond the local areas and commercial zones.

Intermodal Transportation - Transportation movement involving more than one mode (e.g. rail/motor, motor/air, or rail/water).

Interstate Commerce Commission (ICC) - Former motor carrier regulating authority, eliminated by the ICC Termination Act of 1995 (see DOT).

ISTEA - Intermodal Surface Transportation Efficiency Act of 1991.

LCV - Longer combination vehicle.

Less than Truckload (LTL)- A quantity of freight less than that required for the application of a truckload rate. Usually less than 10,000 pounds and generally involves the use of terminal facilities to break and consolidate shipments.

LTL - See LESS THAN TRUCKLOAD.

Modal Share - The percentage of total freight moved by a particular type of transportation.

Motor Carrier Safety Assistance Program (MCMIS) - A central repository of comprehensive safety data on interstate motor carriers maintained by the FHWA OMC.

Nation's Freight Bill - The amount spent annually on freight transportation by the nation's shippers; also represents the total revenue of all carriers operating in the nation.

Net Profit Margin - A measure of profitability based on the ratio of net income to total operating revenues

Non-Regulated Trucking - A carrier which is exempt from economic regulation (e.g. exempt agricultural shipments and private trucking operations).

Operating Expenses - The costs of handling traffic, including both direct costs (such as driver wages and fuel) and indirect costs (computer expenses and advertising), but excluding interest expenses.

Out of Service Violation - Any violation of the Federal Motor Carrier Safety Regulations which results in a vehicle out of service condition.

Piggyback - The transportation of highway trailers or removable trailer bodies on rail cars specifically equipped for the service. It is essentially a joint carrier movement in which the motor carrier forms a pickup and delivery operation to a rail terminal, as well as a delivery operation at the terminating rail head.

Port-of-Entry (POE) - A roadside site used to monitor and regulate using state highways with respect to weight, size, safety, and possibly weight distance taxation.

Private Carrier - A person, firm, or corporation which uses its own trucks to transport its own freight.

Public Utility Commission (PUC) - A state agency whose responsibilities include regulation of for-hire (public and private) carriers of passengers and goods within a state.

Regulated Motor Carrier A carrier subject to economic regulation by the Department of Transportation.

Registration State - A state in which a motor carrier has registered its vehicles for operation.

Semitraiter - A truck trailer equipped with one or more axles and constructed so that the front end rests upon a truck tractor.

Specialized Carrier - A trucking company franchised to transport articles which, because of size, shape weight, other inherent characteristics, require special equipment for loading, unloading or transporting.

Standard Industrial Classification (SIC) Code - A classification of establishments by type of activity in which they are engaged: for the purpose of facilitating the collection, tabulation, presentation and analysis of data relating to establishments (e.g. SIC 421 Trucking & Courier Services, Except Air).

State of Domicile - The state in which the carrier maintains its headquarters.

Straight Truck - A vehicle with the cargo body and tractor mounted on the same chassis

Third Structure Tax: - Any tax on road users other than registration fees or fuel taxes (c-g. Ton-mile tax).

TOFC - Trailer on (rail) flat car. A form of piggyback movement of freight.

Ton-Mile - The movement of one ton of freight a distance of one mile. Ton-miles are computed by dividing the weight in tons of each shipment transported **by** the distance hauled.

Ton-Mile Tax -A tax calculated by measuring the weight of each truck for each trip. The gross weight is assigned a tax rate which is multiplied by the miles of travel.

Tractor - A self-propelled motor vehicle designed and/or used primarily for drawing other vehicles.

Tractor Semitrailer - A combination vehicle consisting of a power unit (tractor) and a semitrailer.

Trailer - A vehicle designed without motive power, to be draw-n by another vehicle.

Transponder - An electronic tag carried by a motor carrier that has electronically stored information that can be retrieved by a roadside reader.

Truck - A motor vehicle designed to carry an entire load. It may consist of a chassis and body; a chassis, cab and body; or it may be of integral construction so that the body and chassis form a single unit.

Truck Tonnage - The weight of freight in tons transported by truck.

Truckload (TL) - Quantity of freight required to fill a truck. When used in connection with freight rates, the quantity of freight necessary to qualify a shipment for a truckload rate. Usually in excess of 10,000 pounds.

Turnpike Double - A combination vehicle consisting of a tractor and two trailers of 33 to 48 feet.

Twin Trailer - A short semitrailer (under 29 feet) designed to be operated as part of a combination vehicle with a tandem trailer of similar length.

Vehicle-Miles - A measurement of the total miles traveled by all vehicles in an area. Generally applies to intercity movements only

Weigh-In-Motion (WIM) - Measures dynamic axle weight at highway or slower speeds. WIM refers to various technologies that enable vehicle weights to be determined without the need for a vehicle to physically stop on a scale.

Weight-Distance Tax - A tax basing the fee per mile on the registered gross weight of the vehicle. Total tax liability is calculated by multiplying this rate times miles traveled.

Western Association of State Highway and Transportation Officials (WASHTO) - A consortium of 17 state chartered primarily to provide uniform formulation and administration of size and weight regulations.

APPENDIX A-LIST OF ACRONYMS

ABI	Automated Broker Interface
ACS	Automated Customs System
ADOT	Arizona Department of Transportation
ATAF	ATA Foundation
BA&H	Booz, Allen & Hamilton
CDL	Commercial Drivers License
c v o	Commercial Vehicle Operations
DEA	Drug Enforcement Administration
DPS	Department of Public Safety
ED1	Electronic Data Interchange
EFT	Electronic Funds Transfer
EPIC	Expedited Processing at International Crossings
FHWA	Federal Highway Administration
HAZMAT	Hazardous Materials
HELP, Inc.	Heavy Vehicle Electronic License Plate, Inc.
IFTA	International Fuel Tax Agreement
IFTA, Inc.	International Fuel Tax Association, Inc.
INS	Immigration/Naturalization Service
IRP	International Registration Plan
ITS	Intelligent Transportation Systems

IVHS	Intelligent Vehicle Highway Systems
MOE	Measure of Effectiveness
MOP	Measure of Performance
MVD	Motor Vehicle Division
NAFTA	North American Free Trade Agreement
OS/OW	Oversize/Overweight
POE	Port of Entry
SAIC	Scientific American International Corp.
SSI	Single State Insurance
USCS	U.S. Customs Service
USDOT	U S. Department of Transportation
WHI	Western Highway Institute

APPENDIX B - LIST OF KEY CONTACTS

EPIC Steering Committee

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APPENDIX C
TRIAL TEST
DATA COLLECTION
INSTRUMENTS

EPIC MOTOR CARRIER/BROKER INTERVIEW 1998

Expedited Processing at International Crossings (EPIC)
Field Operational Test

SECTION A: Current Operations

1. Type of Operation (check all that apply)

For-Hire _____ Owner Operator _____ Private/Maquiladora _____ Broker

2. Type of freight transported. Check all commodities transported and estimate percentage of your freight movement by type moved (i.e., agricultural goods consists of 80% of all movements and general freight 20%).

Commodity Transported

_____ General Freight. . . . . _____%
_____ Agriculture. . . . . _____%
_____ Maquiladora . . . . . _____%
_____ Automobiles/Auto Parts . . . . . _____%
_____ Hazardous Materials . . . . . _____%
_____ Other (describe) . . . . . _____%
_____ TOTAL 100%

Type of Shipments

_____ Truckload (shipments over 10,000 lbs) . . . . . _____%
_____ Less than truckload (shipments less 10,000 lbs) . . . . . _____%
TOTAL 100%

3. List the number of power units, trailers, and single unit trucks owned or leased by your company.

Fleet Composition	Company Owned	Leased
Single Unit Trucks		
Power Units		
Trailers		

4. Percentage of your fleet that is dual plated (Arizona and Mexico Registered) _____%

5. Type of insurance your company currently obtains:
Single Trip_____ Annual Insurance_____ Other (30 day, 3 month, etc.,) _____

6. List the actual 1997 and estimated 1998, average number of NORTHBOUND border crossings your company completes at Nogales by month.

Northbound Border Crossings	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Actual 1997												
Estimated 1998												

7. What percentage of your trucks use:
Single Trip Permits _____%
Annual Permits _____%
30/60/90 Day Permits _____%

8. Did your company have access to the internet before participating in EPIC? _____Yes _____No

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Contact Information (for follow-up purposes)

Company _____

Contact _____

Address _____

City _____ State _____ Country_____ Postal Code _____

Phone _____

Fax _____

email _____

SECTION B - Experience Using EPIC

9) Please rate the importance of the following functions and characteristics of EPIC and your satisfaction with the way they are currently working on a scale of 1 to 3, where 3 is very important/ very satisfied and 1 is not very important/ not very satisfied.

	Level of Importance			Level of Satisfaction		
Functions	**3 Very Important**	**2 Somewhat Important**	**1 Not Very Important**	**3 Very Satisfied**	**2 Somewhat Satisfied**	**1 Not Very Satisfied**
Ability to issue single trip permits	3	2	1	3	2	1
Ability to calculate permit fees	3	2	1	3	2	1
Ability to transfer funds	3	2	1	3	2	1
Ability to print transaction activity reports	3	2	1	3	2	1
Ability to access historical congestion information	3	2	1	3	2	1
Ability to access real time congestion information	3	2	1	3	2	1
Ability to access specific company truck border crossing information	3	2	1	3	2	1
Ability to automatically notify shippers of truck border crossings	3	2	1	3	2	1
Ability to automatically notify receivers of truck border crossings	3	2	1	3	2	1

10) When comparing EPIC to your previousmethod of applying for permits, what do you believe are the greatest improvements (i.e. accuracy, efficiency, record keeping)?

11) Have you contacted the EPIC Service Center during the operation test? If so, how many times and what types of information or questions did you ask?

12) Would you like to continue using EPIC after the operational test has concluded?

13) Would you recommend EPIC to other motor carriers?

14) Please rate the helpfulness of the training provided for EPIC on a scale of 1 to 4, where 4 is very helpful and 1 is no help at all.

	4 Very Helpful	**3 Somewhat Helpful**	**2 A Little Helpful**	**1 Not Helpful at All**	**0 Not Applicable/ No Opinion**
Written User's Guide and Training Materials	4	3	2	1	0
In Person Training	4	3	2	1	0
On-Line Training/Instructions	4	3	2	1	0
Service Center Assistance	4	3	2	1	0

15) Please estimate the range of costs that your company has incurred so far as a result of participating in the EPIC Operational Test.

A) Number of personnel hours _____hrs. B) Average hourly rate _____$
C) Approximate dollar cost (e.g. computers, software, etc.) _____$

16) Are there any transactions which you think should eventually be performed by an electronic, or internet based clearance system that is not demonstrated as part of this operational test?

17) Are there any transactions which you do think EPIC or another electronic system should perform?

18) General Comments on your experience using EPIC?

SECTION C - Internet Information

19) On average, how many times do you log onto the EPIC home page during the course of a business day (to check truck movement or compound traffic volume)?

20) Please rate your level of agreement with the following statements, where 4 is strongly agree and 1 is strongly disagree.

	4 Strongly Agree	**3 Somewhat Agree**	**2 Somewhat Disagree**	**1 Strongly Disagree**	**0 Not Applicable/ No Opinion**
The EPIC system online interactive response speed is acceptable	4	3	2	1	0
The EPIC user screen interface is acceptable	4	3	2	1	0
The duration of scheduled and unscheduled maintenance is acceptable	4	3	2	1	0
The installation of EPIC was not disruptive	4	3	2	1	0

21) General comments on using the Internet?

SECTION D - Time Estimations

22) Prior to EPIC, please estimate the administrative time your company spent acquiring trip permits.

Avg. per trip _____hrs. Avg. per week _____hrs.

23) Using EPIC, please estimate the administrative time your company spent acquiring trip permits.

Avg. per trip _____hrs. Avg. per week _____hrs.

24) Rate the extent to which you believe EPIC has provided your company with the following benefits on scale of 1 to 4, where 4 is to a great extent and 1 is to a little or no extent.

	Benefits				
	4 Great Extent	**3 Considerable Extent**	**2 Some Extent**	**1 Little or no Extent**	**0 Not Applicable/ No Opinion**
EPIC has reduced use of staff resources in acquiring permits (increased productivity)	4	3	2	1	0
EPIC has increased the percentage of transports that successfully complete the border crossing processes without being delayed	4	3	2	1	0
Faster turnaround time between applying for and receiving permits	4	3	2	1	0

25) General comments on time or productivity savings using EPIC?

26) Are there any questions that we did not ask that we should have?

EPIC
STATE AGENCY
INTERVIEW
1998

Expedited Processing at International Crossings (EPIC)
Field Operational Test

Experience Using EPIC

1) Please rate the process used under EPIC compared to your customary method of issuing credentials and permits on a scale of 1 to 5, where 5 is significantly better and 1 is significantly worse.

	Compared to your Customary Method of Issuing Permits/Credentials, EPIC is:				
	5 Significantly Better	**4 Somewhat Better**	**3 No Difference**	**2 Somewhat Worse**	**1 Significantly Worse**
Amount of time required to issue permits/credentials	5	4	3	2	1
Convenience of issuing credentials/permits	5	4	3	2	1
Convenience of receiving credentials/permit payments	5	4	3	2	1
Accuracy in calculating credentials/permits taxes and fees	5	4	3	2	1
Credential/permit approval rate	5	4	3	2	1

2) Please rate your agreement with the following statements on a scale of 1 to 4, where 4 is agree strongly and 1 is disagree strongly.

	Compared to your Customary Method of Issuing Permits/Credentials, EPIC is:				
	4 Agree Strongly	**3 Agree Somewhat**	**2 Disagree Somewhat**	**1 Disagree Strongly**	**0 Not Applicable/ No Opinion**
My opinion of EPIC has improved as I have gained experience with them	5	4	3	2	1
The EPIC Service Center adds significantly to the value of the EPIC process	5	4	3	2	1
I prefer that motor carriers use EPIC rather than their former method of obtaining credentials and permits	5	4	3	2	1
I would like to continue using EPIC after the operational test has concluded	5	4	3	2	1
I would recommend EPIC to other state agencies	5	4	3	2	1

3) Please rate the helpfulness of the training provided for EPIC on a scale of 1 to 4, where 4 is very helpful and 1 is no help at all.

	4 Very Helpful	**3 Somewhat Helpful**	**2 A Little Helpful**	**1 Not Helpful at All**	**0 Not Applicable/ No Opinion**
Written User's Guide and Training Materials	4	3	2	1	0
In Person Training	4	3	2	1	0
Service Center Assistance	4	3	2	1	0

4) Please rate the extent to which you believe EPIC has provided your agency with the following benefits on scale of 1 to 4, where 4 is to a great extent and 1 is to a little or no extent.

	Benefits				
	4 Great Extent	**3 Considerable Extent**	**2 Some Extent**	**1 Little or no Extent**	**0 Not Applicable/ No Opinion**
EPIC has reduced use of staff resources in issuing credentials/ permits (increased productivity)	4	3	2	1	0
More consistent processing time (less variability in the length of time it takes to issue credentials/ permits)	4	3	2	1	0
Increases in credential/permit application approval rates	4	3	2	1	0
Decreased vehicle congestion at the Arizona POE	4	3	2	1	0

5) Please rate the importance of the following functions of EPIC to your agency and your satisfaction with the way they are currently working on a scale of 1 to 3, where 3 is very important/ very satisfied and 1 is not very important/ not very satisfied.

	Level of Importance			Level of Satisfaction		
Functions	**3 Very Important**	**2 Somewhat Important**	**1 Not Very Important**	**3 Very Satisfied**	**2 Somewhat Satisfied**	**1 Not Very Satisfied**
Ability to issue single trip permits	3	2	1	3	2	1
Ability to calculate permit fees	3	2	1	3	2	1
Ability to transfer funds	3	2	1	3	2	1
Ability to print transaction activity reports	3	2	1	3	2	1

6) Please rate your level of agreement with the following statements, where 4 is strongly agree and 1 is strongly disagree.

	4 Strongly Agree	3 Somewhat Agree	2 Somewhat Disagree	1 Strongly Disagree	0 Not Applicable/ No Opinion
The EPIC system online interactive response speed is acceptable	4	3	2	1	0
The EPIC user screen interface is acceptable	4	3	2	1	0
EPIC is available at the times desired	4	3	2	1	0
The duration of scheduled and unscheduled maintenance is acceptable	4	3	2	1	0
The installation of EPIC was not disruptive	4	3	2	1	0

7) Please rate the importance of the following characteristics of EPIC to your agency and your satisfaction with the way they are currently working on a scale of 1 to 3, where 3 is very important/ very satisfied and 1 is not very important/ not very satisfied.

	Level of Importance			Level of Satisfaction		
Functions	**3 Very Important**	**2 Somewhat Important**	**1 Not Very Important**	**3 Very Satisfied**	**2 Somewhat Satisfied**	**1 Not Very Satisfied**
Characteristics						
Number of credentials/permits supported	3	2	1	3	2	1
Compatibility with other software programs	3	2	1	3	2	1
Compatibility with current work practices	3	2	1	3	2	1
Access to Service Center assistance	3	2	1	3	2	1

8) Are there any transactions which you think should eventually be performed by an automated system (EPIC or any other) that will not be demonstrated as a part of this operational test?

9) Are there any transactions which you think should not be performed by an automated system that will not be demonstrated as a part of this operational test?

10) Please describe any non-technical challenges (organizational, regulatory, legal, etc.) That you have faced using EPIC and what, if anything, you have been able to do resolve them?

11) Please describe the greatest non-technical challenge that EPIC, or a similar system, may encounter in moving from an operational test to nationwide deployment. Do you have any suggestions for resolving these challenges.

12) Are there any transactions which you think should eventually be performed by EPIC, or another electronic clearance system, that will not be demonstrated as part of this operational test?

13) Are there any transactions which you do not think EPIC, or another electronic clearance system, should perform?

APPENDIX D - AUTOMATIC DATA COLLECTION RESULTS

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 1.5 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
3	3080610d	1		1998-03-02	8:39:23	1	1	0						
3	3080610d	1		1998-03-02	8:40:54	2	1	0						
3	3080610d	1		1998-03-02	8:44:38	4	1	0		0:03:44			0:03:44	1
3	3080610d	1		1998-03-02	16:11:43	1	1	0						
3	3080610d	1		1998-03-02	16:19:27	2	1	0						
3	3080610d	1		1998-03-02	16:43:20	4	1	0		0:23:53				
7	30806154	1		1998-03-02	16:47:22	1	1	0						
7	30806154	1		1998-03-02	16:52:20	2	1	0						
7	30806154	1		1998-03-02	16:58:40	3	1	0	0:06:20		0:06:20	1		
7	30806154	1		1998-03-02	16:59:09	4	1	0						
7	30806154	1		1998-03-02	18:05:21	5	1	0						
43	3080614f	1		1998-03-02	13:29:34	1	1	0						
43	3080614f	1		1998-03-02	13:43:50	2	1	0						
43	3080614f	1		1998-03-02	13:54:30	4	1	0		0:10:40			0:10:40	1
43	3080614f	1		1998-03-02	14:58:56	5	1	0						
3	3080610d	1		1998-03-02	10:50:42	1	1	0						
3	3080610d	1		1998-03-02	10:54:17	2	1	0						
3	3080610d	1		1998-03-02	10:58:03	4	1	0		0:03:46			0:03:46	1
7	30806154	1		1998-03-02	10:02:05	2	1	0						
7	30806154	1		1998-03-02	10:13:29	3	1	0	0:11:24		0:11:24	1		
7	30806154	1		1998-03-02	10:14:43	4	1	0						
7	30806154	1		1998-03-02	11:10:42	5	1	0						
7	30806154	1		1998-03-02	16:26:24	2	1	0						
7	30806154	1		1998-03-02	17:59:23	3	1	0	1:32:59		1:32:59	1		
7	30806154	1		1998-03-02	18:00:35	4	1	0						
7	30806154	1		1998-03-02	19:04:36	5	1	0						
43	3080614f	1		1998-03-02	14:40:41	2	1	0						
43	3080614f	1		1998-03-02	15:08:29	3	1	0	0:27:48		0:27:48	1		
43	3080614f	1		1998-03-02	15:09:04	4	1	0						
43	3080614f	1		1998-03-02	16:48:12	5	1	0						
3	3080610d	1		1998-03-02	16:08:44	1	1	0						
3	3080610d	1		1998-03-02	16:13:10	2	1	0						
3	3080610d	1		1998-03-02	16:41:56	4	1	0		0:28:46				
3	3080610d	1		1998-03-02	18:31:55	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 1.5 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
3	3080610d	1		1998-03-06	10:34:24	1	1	0						
3	3080610d	1		1998-03-06	10:40:13	2	1	0						
3	3080610d	1		1998-03-06	10:47:44	4	1	0		0:07:31			0:07:31	1
3	3080610d	1		1998-03-06	14:51:13	1	1	0						
3	3080610d	1		1998-03-06	14:54:52	2	1	0						
3	3080610d	1		1998-03-06	14:59:34	4	1	0		0:04:42			0:04:42	1
7	30806154	1		1998-03-06	9:33:40	2	1	0						
7	30806154	1		1998-03-06	9:37:52	4	1	0		0:04:12			0:04:12	1
7	30806154	1		1998-03-06	11:23:49	5	1	0						
43	3080614f	1		1998-03-06	13:23:55	2	1	0						
43	3080614f	1		1998-03-06	14:07:52	4	1	0		0:43:57				
43	3080614f	1		1998-03-06	14:51:25	5	1	0						
3	3080610d	1		1998-03-09	10:38:48	1	1	0						
3	3080610d	1		1998-03-09	10:42:31	2	1	0						
3	3080610d	1		1998-03-09	10:48:24	4	1	0		0:05:53			0:05:53	1
3	3080610d	1		1998-03-11	13:50:55	1	1	0						
3	3080610d	1		1998-03-11	13:57:22	2	1	0						
3	3080610d	1		1998-03-11	14:00:11	4	1	0		0:02:49			0:02:49	1
3	3080610d	1		1998-03-11	17:58:00	5	1	0						
43	3080614f	1		1998-03-11	14:38:13	2	1	0						
43	3080614f	1		1998-03-11	15:10:52	4	1	0		0:32:39				
43	3080614f	1		1998-03-11	15:57:58	5	1	0						
3	3080610d	1		1998-03-12	11:56:23	1	1	0						
3	3080610d	1		1998-03-12	12:06:11	2	1	0						
3	3080610d	1		1998-03-12	12:32:58	4	1	0		0:26:47				
3	3080610d	1		1998-03-12	16:27:22	1	1	0						
3	3080610d	1		1998-03-12	16:38:18	2	1	0						
3	3080610d	1		1998-03-12	16:40:58	4	1	0		0:02:40			0:02:40	1
3	3080610d	1		1998-03-13	9:39:54	2	1	0						
3	3080610d	1		1998-03-13	10:10:59	4	1	0		0:31:05				
3	3080610d	1		1998-03-13	17:16:54	2	1	0						
3	3080610d	1		1998-03-13	17:23:11	4	1	0		0:06:17			0:06:17	1
3	3080610d	1		1998-03-17	8:51:48	2	1	0						
3	3080610d	1		1998-03-17	10:44:05	4	1	0		1:52:17				

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 1.5 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
44	30806110	1		1998-03-17	15:21:34	2	1	0						
44	30806110	1		1998-03-17	15:25:31	4	1	0		0:03:57			0:03:57	1
44	30806110	1		1998-03-26	16:02:11	2	1	0						
44	30806110	1		1998-03-26	16:04:20	4	1	0		0:02:09			0:02:09	1
44	30806110	1		1998-03-31	14:40:56	2	1	0						
44	30806110	1		1998-03-31	14:42:51	4	1	0		0:01:55			0:01:55	1
3	3080610d	1		1998-04-22	14:04:40	1	1	0						
3	3080610d	1		1998-04-22	14:08:51	2	1	0						
3	3080610d	1		1998-04-22	14:27:09	4	1	0		0:18:18				
3	3080610d	1		1998-04-22	14:27:14	0	1	0						
43	3080614f	1		1998-04-22	11:50:12	1	1	0						
43	3080614f	1		1998-04-22	11:53:09	2	1	0						
43	3080614f	1		1998-04-22	12:56:43	3	1	0	1:03:34		1:03:34	1		
43	3080614f	1		1998-04-22	12:57:11	4	1	0						
43	3080614f	1		1998-04-22	14:35:37	5	1	0						
7	30806154	1		1998-05-08	15:21:05	1	1	0						
7	30806154	1		1998-05-08	15:30:17	2	1	0						
7	30806154	1		1998-05-08	15:35:25	4	1	0		0:05:08			0:05:08	1
43	3080614f	1		1998-05-11	11:56:34	1	1	0						
43	3080614f	1		1998-05-11	12:03:19	2	1	0						
43	3080614f	1		1998-05-11	12:13:00	4	1	0		0:09:41			0:09:41	1
43	3080614f	1		1998-05-11	13:27:05	5	1	0						
7	30806154	1		1998-05-12	8:36:58	1	1	0						
7	30806154	1		1998-05-12	8:39:18	2	1	0						
7	30806154	1		1998-05-12	8:44:10	4	1	0		0:04:52			0:04:52	1
43	3080614f	1		1998-05-12	8:52:10	1	1	0						
43	3080614f	1		1998-05-12	8:56:39	2	1	0						
43	3080614f	1		1998-05-12	9:05:46	3	1	0	0:09:07		0:09:07	1		
43	3080614f	1		1998-05-12	9:06:41	4	1	0						
43	3080614f	1		1998-05-12	9:50:20	5	1	0						
43	3080614f	1		1998-05-12	12:55:17	2	1	0						
43	3080614f	1		1998-05-12	13:02:26	4	1	0		0:07:09			0:07:09	1
43	3080614f	1		1998-05-12	14:38:17	5	1	0						
44	30806110	1		1998-05-12	8:26:27	2	1	0						
44	30806110	1		1998-05-12	8:28:46	4	1	0		0:02:19			0:02:19	1

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 1.5 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
7	30806154	1		1998-05-13	13:57:13	2	1	0						
7	30806154	1		1998-05-13	14:11:16	3	1	0	0:14:03		0:14:03	1		
7	30806154	1		1998-05-13	14:34:06	4	1	0						
43	3080614f	1		1998-05-13	12:25:33	2	1	0						
43	3080614f	1		1998-05-13	12:30:19	4	1	0		0:04:46			0:04:46	1
43	3080614f	1		1998-05-13	13:40:06	5	1	0						
44	30806110	1		1998-05-13	8:43:11	2	1	0						
44	30806110	1		1998-05-13	8:46:39	4	1	0		0:03:28			0:03:28	1
7	30806154	1		1998-05-14	10:32:29	2	1	0						
7	30806154	1		1998-05-14	10:38:49	3	1	0	0:06:20		0:06:20	1		
7	30806154	1		1998-05-14	10:39:41	4	1	0						
7	30806154	1		1998-05-14	16:02:26	2	1	0						
7	30806154	1		1998-05-14	16:07:24	3	1	0	0:04:58		0:04:58	1		
7	30806154	1		1998-05-14	16:08:33	4	1	0						
43	3080614f	1		1998-05-14	8:57:11	2	1	0						
43	3080614f	1		1998-05-14	9:01:41	4	1	0		0:04:30			0:04:30	1
43	3080614f	1		1998-05-14	9:37:10	5	1	0						
43	3080614f	1		1998-05-14	11:37:10	2	1	0						
43	3080614f	1		1998-05-14	11:43:39	4	1	0		0:06:29			0:06:29	1
43	3080614f	1		1998-05-14	12:23:57	5	1	0						
44	30806110	1		1998-05-14	15:29:56	2	1	0						
44	30806110	1		1998-05-14	15:32:35	4	1	0		0:02:39			0:02:39	1
7	30806154	1		1998-05-15	11:44:59	1	1	0						
7	30806154	1		1998-05-15	11:49:43	2	1	0						
7	30806154	1		1998-05-15	11:52:04	4	1	0		0:02:21			0:02:21	1
7	30806154	1		1998-05-15	12:26:16	5	1	0						
43	3080614f	1		1998-05-15	12:23:02	1	1	0						
43	3080614f	1		1998-05-15	12:27:23	2	1	0						
43	3080614f	1		1998-05-15	13:37:02	3	1	0	1:09:39		1:09:39	1		
43	3080614f	1		1998-05-15	13:38:28	4	1	0						
43	3080614f	1		1998-05-15	14:25:46	5	1	0						
44	30806110	1		1998-05-15	8:41:07	1	1	0						
44	30806110	1		1998-05-15	8:49:19	2	1	0						
44	30806110	1		1998-05-15	9:20:21	4	1	0		0:31:02				

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 1.5 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
44	30806110	1		1998-05-15	16:35:42	2	1	0						
44	30806110	1		1998-05-15	16:39:44	4	1	0		0:04:02			0:04:02	1
44	30806110	1		1998-05-15	17:47:03	5	1	0						
7	30806154	1		1998-05-18	9:52:34	1	1	0						
7	30806154	1		1998-05-18	9:54:46	2	1	0						
7	30806154	1		1998-05-18	10:04:48	3	1	0	0:10:02		0:10:02	1		
7	30806154	1		1998-05-18	10:05:04	4	1	0						
19	3080613a	1		1998-05-18	16:17:43	1	1	0						
19	3080613a	1		1998-05-18	16:18:12	2	1	0						
19	3080613a	1		1998-05-18	16:19:06	4	1	0		0:00:54			0:00:54	1
43	3080614f	1		1998-05-18	8:24:13	1	1	0						
43	3080614f	1		1998-05-18	8:24:47	2	1	0						
43	3080614f	1		1998-05-18	8:27:22	3	1	0	0:02:35		0:02:35	1		
43	3080614f	1		1998-05-18	8:27:38	4	1	0						
43	3080614f	1		1998-05-18	11:16:06	5	1	0						
43	3080614f	1		1998-05-18	13:09:50	1	1	0						
43	3080614f	1		1998-05-18	13:12:06	2	1	0						
43	3080614f	1		1998-05-18	13:16:27	4	1	0		0:04:21			0:04:21	1
43	3080614f	1		1998-05-18	14:18:21	5	1	0						
44	30806110	1		1998-05-18	10:19:38	2	1	0						
44	30806110	1		1998-05-18	10:59:37	4	1	0		0:39:59				
44	30806110	1		1998-05-18	14:45:12	1	1	0						
44	30806110	1		1998-05-18	14:52:23	2	1	0						
44	30806110	1		1998-05-18	14:56:41	4	1	0		0:04:18			0:04:18	1
3	3080610d	1		1998-05-19	14:25:17	2	1	0						
3	3080610d	1		1998-05-19	14:57:28	4	1	0		0:32:11				
7	30806154	1		1998-05-19	8:15:09	1	1	0						
7	30806154	1		1998-05-19	8:16:35	2	1	0		0:01:48			0:01:48	1
7	30806154	1		1998-05-19	8:18:23	4	1	0						
7	30806154	1		1998-05-19	12:24:21	1	1	0						
7	30806154	1		1998-05-19	12:26:54	2	1	0		0:02:33			0:02:33	1
7	30806154	1		1998-05-19	12:29:25	4	1	0						
43	3080614f	1		1998-05-19	12:08:48	2	1	0						
43	3080614f	1		1998-05-19	12:16:06	4	1	0		0:07:18			0:07:18	1
43	3080614f	1		1998-05-19	14:09:16	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 1.5 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
44	30806110	1		1998-05-19	9:14:41	1	1	0						
44	30806110	1		1998-05-19	9:18:25	2	1	0						
44	30806110	1		1998-05-19	9:20:24	4	1	0		0:01:59			0:01:59	1
3	3080610d	1		1998-05-20	8:37:11	1	1	0						
3	3080610d	1		1998-05-20	8:43:00	2	1	0						
3	3080610d	1		1998-05-20	8:44:31	4	1	0		0:01:31			0:01:31	1
19	3080613a	1		1998-05-20	15:48:28	1	1	0						
19	3080613a	1		1998-05-20	15:48:54	2	1	0						
19	3080613a	1		1998-05-20	15:49:59	4	1	0		0:01:05			0:01:05	1
43	3080614f	1		1998-05-20	12:50:34	2	1	0						
43	3080614f	1		1998-05-20	12:55:14	4	1	0		0:04:40			0:04:40	1
43	3080614f	1		1998-05-20	14:14:19	5	1	0						
3	3080610d	1		1998-05-21	8:55:17	1	1	0						
3	3080610d	1		1998-05-21	8:58:42	2	1	0						
3	3080610d	1		1998-05-21	10:14:31	4	1	0		1:15:49			1:15:49	1
7	30806154	1		1998-05-21	8:33:46	2	1	0						
7	30806154	1		1998-05-21	8:36:06	3	1	0	0:02:20		0:02:20	1		
7	30806154	1		1998-05-21	8:36:36	4	1	0						
43	3080614f	1		1998-05-21	12:28:35	2	1	0						
43	3080614f	1		1998-05-21	13:01:35	3	1	0	0:33:00		0:33:00	1		
43	3080614f	1		1998-05-21	13:02:11	4	1	0						
43	3080614f	1		1998-05-21	14:12:38	5	1	0						
3	3080610d	1		1998-05-22	8:34:44	1	1	0						
3	3080610d	1		1998-05-22	8:37:23	2	1	0						
3	3080610d	1		1998-05-22	8:40:28	4	1	0		0:03:05			0:03:05	1
19	3080613a	1		1998-05-22	8:01:24	1	1	0						
19	3080613a	1		1998-05-22	15:19:04	2	1	0						
19	3080613a	1		1998-05-22	15:21:31	4	1	0		0:02:27			0:02:27	1
3	3080610d	1		1998-05-23	12:09:46	1	1	0						
3	3080610d	1		1998-05-23	12:17:01	2	1	0						
3	3080610d	1		1998-05-23	12:19:36	4	1	0		0:02:35			0:02:35	1
7	30806154	1		1998-05-25	8:28:33	1	1	0						
7	30806154	1		1998-05-25	8:29:12	2	1	0						
7	30806154	1		1998-05-25	8:34:33	3	1	0	0:05:21		0:05:21	1		
7	30806154	1		1998-05-25	8:36:52	4	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 1.5 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
7	30806154	1		1998-05-26	13:29:12	1	1	0						
7	30806154	1		1998-05-26	13:36:55	2	1	0						
7	30806154	1		1998-05-26	13:42:30	4	1	0		0:05:35			0:05:35	1
43	3080614f	1		1998-05-26	9:02:22	1	1	0						
43	3080614f	1		1998-05-26	9:10:07	2	1	0						
43	3080614f	1		1998-05-26	9:15:18	3	1	0	0:05:11		0:05:11	1		
43	3080614f	1		1998-05-26	9:15:36	4	1	0						
43	3080614f	1		1998-05-26	9:58:55	5	1	0						
43	3080614f	1		1998-05-26	13:14:11	2	1	0						
43	3080614f	1		1998-05-26	13:46:39	3	1	0	0:32:28		0:32:28	1		
43	3080614f	1		1998-05-26	13:47:21	4	1	0						
43	3080614f	1		1998-05-26	14:55:28	5	1	0						
3	3080610d	1		1998-05-27	10:19:04	2	1	0						
3	3080610d	1		1998-05-27	10:21:34	4	1	0		0:02:30			0:02:30	1
7	30806154	1		1998-05-27	10:16:25	2	1	0						
7	30806154	1		1998-05-27	10:22:55	4	1	0		0:06:30			0:06:30	1
7	30806154	1		1998-05-27	15:19:27	2	1	0						
7	30806154	1		1998-05-27	15:22:06	3	1	0	0:02:39		0:02:39	1		
7	30806154	1		1998-05-27	15:57:12	2	1	0						
7	30806154	1		1998-05-27	16:04:36	4	1	0		0:07:24			0:07:24	1
43	3080614f	1		1998-05-27	12:11:58	2	1	0						
43	3080614f	1		1998-05-27	12:56:09	4	1	0		0:44:11				
3	3080610d	1		1998-05-28	8:44:28	1	1	0						
3	3080610d	1		1998-05-28	8:46:44	2	1	0						
3	3080610d	1		1998-05-28	8:48:04	4	1	0		0:01:20			0:01:20	1
3	3080610d	1		1998-05-28	13:00:31	2	1	0						
3	3080610d	1		1998-05-28	13:03:45	4	1	0		0:03:14			0:03:14	1
7	30806154	1		1998-05-28	10:04:03	2	1	0						
7	30806154	1		1998-05-28	10:38:37	4	1	0		0:34:34				
43	3080614f	1		1998-05-28	8:20:41	2	1	0						
43	3080614f	1		1998-05-28	8:23:04	4	1	0		0:02:23			0:02:23	1
43	3080614f	1		1998-05-28	8:58:00	5	1	0						
43	3080614f	1		1998-05-28	12:35:11	2	1	0						
43	3080614f	1		1998-05-28	12:38:46	4	1	0		0:03:35			0:03:35	1
43	3080614f	1		1998-05-28	13:59:31	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 1.5 min. or more Time	2 to 3 in 1.5 min. or more Cnt	2 to 4 in less than 11 min. Time	2 to 4 in less than 11 min. Cnt
3	3080610d	1		1998-05-29		2	1	0						
3	3080610d	1		1998-05-29		4	1	0		0:02:54			0:02:54	1
3	3080610d	1		1998-05-29		2	1	0						
3	3080610d	1		1998-05-29		4	1	0		0:04:38			0:04:38	1
7	30806154	1		1998-05-29		2	1	0						
7	30806154	1		1998-05-29		4	1	0		0:12:42				
7	30806154	1		1998-05-29		5	1	0						
7	30806154	1		1998-05-29		2	1	0						
7	30806154	1		1998-05-29		4	1	0		0:05:16			0:05:16	1
7	30806154	1		1998-05-29		5	1	0						
43	3080614f	1		1998-05-29		2	1	0						
43	3080614f	1		1998-05-29		4	1	0		0:42:08				
43	3080614f	1		1998-05-29		5	1	0						
								Total Time	6:39:48	13:51:50	6:39:48	71	3:21:32	49
								Events	18	65	18		49	
								Average	0:22:13	0:12:48	0:22:13		0:04:07	
									2 to 3	**2 to 4**	**2 to 3 Events of** 1.5 mins. or more		**2 to 4 Events < 11 mins.**	
									Events	83	Events	67		

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
9	308060c2	3		1998-03-02	8:46:39	1	1	0						
9	308060c2	3		1998-03-02	9:02:54	2	1	0						
9	308060c2	3		1998-03-02	9:37:49	3	1	0	0:34:55		0:34:55	1		
9	308060c2	3		1998-03-02	9:38:28	4	1	0						
9	308060c2	3		1998-03-02	11:44:25	5	1	0						
11	3080610a	3		1998-03-02	9:01:31	2	1	0						
11	3080610a	3		1998-03-02	9:28:35	3	1	0	0:27:04		0:27:04	1		
11	3080610a	3		1998-03-02	9:29:03	4	1	0						
11	3080610a	3		1998-03-02	11:29:58	5	1	0						
16	308060c6	3		1998-03-02	9:02:45	2	1	0						
16	308060c6	3		1998-03-02	9:30:46	4	1	0		0:28:01				
16	308060c6	3		1998-03-02	11:27:45	5	1	0						
8	308060b1	3		1998-03-03	11:28:03	1	1	0						
8	308060b1	3		1998-03-03	11:29:00	2	1	0						
8	308060b1	3		1998-03-03	11:34:06	4	1	0		0:05:06			0:05:06	1
10	30806157	3		1998-03-03	10:52:28	1	1	0						
10	30806157	3		1998-03-03	10:56:03	2	1	0						
10	30806157	3		1998-03-03	11:27:30	3	1	0	0:31:27		0:31:27	1		
10	30806157	3		1998-03-03	11:28:36	4	1	0						
10	30806157	3		1998-03-03	14:58:54	5	1	0						
15	30806121	3		1998-03-03	10:58:38	1	1	0						
15	30806121	3		1998-03-03	11:06:32	2	1	0						
15	30806121	3		1998-03-03	11:33:58	3	1	0	0:27:26		0:27:26	1		
15	30806121	3		1998-03-03	11:35:46	4	1	0						
15	30806121	3		1998-03-03	13:00:12	5	1	0						
18	3080614b	3		1998-03-03	10:48:42	1	1	0						
18	3080614b	3		1998-03-03	10:52:44	2	1	0						
18	3080614b	3		1998-03-03	11:23:52	3	1	0	0:31:08		0:31:08	1		
18	3080614b	3		1998-03-03	11:24:59	4	1	0						
8	308060b1	3		1998-03-06	12:14:12	1	1	0						
8	308060b1	3		1998-03-06	12:17:09	2	1	0						
8	308060b1	3		1998-03-06	12:20:47	4	1	0		0:03:38			0:03:38	1

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
12	30806109	3		1998-03-06	14:15:18	2	1	0						
12	30806109	3		1998-03-06	14:20:20	4	1	0		0:05:02			0:05:02	1
12	30806109	3		1998-03-06	17:59:32	5	1	0						
14	3080613b	3		1998-03-06	11:39:48	2	1	0						
14	3080613b	3		1998-03-06	12:02:23	3	1	0	0:22:35		0:22:35	1		
14	3080613b	3		1998-03-06	12:03:42	4	1	0						
14	3080613b	3		1998-03-06	13:49:00	5	1	0						
16	308060c6	3		1998-03-06	10:36:57	1	1	0						
16	308060c6	3		1998-03-06	10:53:04	2	1	0						
16	308060c6	3		1998-03-06	11:35:35	3	1	0	0:42:31		0:42:31	1		
16	308060c6	3		1998-03-06	11:36:26	4	1	0						
16	308060c6	3		1998-03-06	13:51:57	5	1	0						
18	3080614b	3		1998-03-06	11:47:21	1	1	0						
18	3080614b	3		1998-03-06	11:51:54	2	1	0						
18	3080614b	3		1998-03-06	12:38:59	3	1	0	0:47:05		0:47:05	1		
18	3080614b	3		1998-03-06	12:41:14	4	1	0						
18	3080614b	3		1998-03-06	16:28:27	5	1	0						
12	30806109	3		1998-03-09	9:12:44	2	1	0						
12	30806109	3		1998-03-09	9:43:57	3	1	0	0:31:13		0:31:13	1		
12	30806109	3		1998-03-09	9:44:41	4	1	0						
13	3080611d	3		1998-03-09	8:30:31	1	1	0						
13	3080611d	3		1998-03-09	9:08:03	2	1	0						
13	3080611d	3		1998-03-09	9:33:52	3	1	0	0:25:49		0:25:49	1		
13	3080611d	3		1998-03-09	9:35:04	4	1	0						
14	3080613b	3		1998-03-09	9:10:50	2	1	0						
14	3080613b	3		1998-03-09	10:50:42	3	1	0	1:39:52		1:39:52	1		
14	3080613b	3		1998-03-09	10:51:27	4	1	0						
14	3080613b	3		1998-03-09	11:58:52	5	1	0						
17	3080610c	3		1998-03-09	9:27:49	2	1	0						
17	3080610c	3		1998-03-09	9:51:37	4	1	0		0:23:48				
11	3080610a	3		1998-03-12	11:15:53	1	1	0						
11	3080610a	3		1998-03-12	11:25:55	2	1	0						
11	3080610a	3		1998-03-12	11:33:24	4	1	0		0:07:29			0:07:29	1

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
12	30806109	3		1998-03-12	10:07:13	2	1	0						
12	30806109	3		1998-03-12	10:15:18	4	1	0		0:08:05			0:08:05	1
12	30806109	3		1998-03-12	13:29:04	5	1	0						
8	308060b1	3		1998-03-13	15:26:19	1	1	0						
8	308060b1	3		1998-03-13	15:29:53	2	1	0						
8	308060b1	3		1998-03-13	15:49:02	4	1	0		0:19:09			0:19:09	1
18	3080614b	3		1998-03-13	17:48:56	1	1	0						
18	3080614b	3		1998-03-13	18:01:07	2	1	0						
18	3080614b	3		1998-03-13	18:34:34	3	1	0	0:33:27		0:33:27	1		
18	3080614b	3		1998-03-13	18:35:09	4	1	0						
18	3080614b	3		1998-03-13	19:28:56	5	1	0						
10	30806157	3		1998-03-14	11:57:14	1	1	0						
10	30806157	3		1998-03-14	12:03:35	2	1	0						
10	30806157	3		1998-03-14	12:09:23	4	1	0		0:05:48			0:05:48	1
10	30806157	3		1998-03-14	14:38:29	5	1	0						
13	3080611d	3		1998-03-14	9:50:48	1	1	0						
13	3080611d	3		1998-03-14	10:06:36	2	1	0						
13	3080611d	3		1998-03-14	10:14:26	4	1	0		0:07:50			0:07:50	1
13	3080611d			1998-03-14	12:51:14	5	1	0						
14	3080613b	3		1998-03-14	10:19:16	1	1	0						
14	3080613b	3		1998-03-14	10:30:56	2	1	0						
14	3080613b	3		1998-03-14	10:38:45	4	1	0		0:07:49			0:07:49	1
14	3080613b	3		1998-03-14	12:51:14	5	1	0						
17	3080610c	3		1998-03-14	9:08:35	1	1	0						
17	3080610c	3		1998-03-14	9:12:23	2	1	0						
17	3080610c	3		1998-03-14	9:17:50	4	1	0		0:05:27			0:05:27	1
12	30806109	3		1998-03-16	8:28:10	1	1	0						
12	30806109	3		1998-03-16	9:32:32	2	1	0						
12	30806109	3		1998-03-16	9:59:45	3	1	0	0:27:13		0:27:13	1		
12	30806109	3		1998-03-16	10:00:36	4	1	0						
12	30806109	3		1998-03-16	11:44:11	5	1	0						
8	308060b1	3		1998-03-17	9:57:56	2	1	0						
8	308060b1	3		1998-03-17	10:01:16	4	1	0		0:03:20			0:03:20	1

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
10	30806157	3		1998-03-17	10:08:39	2	1	0						
10	30806157	3		1998-03-17	10:12:24	4	1	0		0:03:45			0:03:45	1
10	30806157	3		1998-03-17	15:18:06	5	1	0						
18	3080614b	3		1998-03-17	14:19:31	2	1	0						
18	3080614b	3		1998-03-17	14:43:52	3	1	0	0:24:21		0:24:21	1		
18	3080614b	3		1998-03-17	14:44:55	4	1	0						
8	308060b1	3		1998-03-18	18:16:00	1	1	0						
8	308060b1	3		1998-03-18	18:16:04	2	1	0						
8	308060b1	3		1998-03-18	18:16:08	3	1	0	0:00:04					
12	30806109	3		1998-03-18	18:15:48	1	1	0						
12	30806109	3		1998-03-18	18:15:52	2	1	0						
12	30806109	3		1998-03-18	18:15:56	3	1	0	0:00:04					
14	3080613b	3		1998-03-18	18:03:35	1	1	0						
14	3080613b	3		1998-03-18	18:03:55	2	1	0						
14	3080613b	3		1998-03-18	18:03:59	3	1	0	0:00:04					
15	30806121	3		1998-03-18	18:04:07	1	1	0						
15	30806121	3		1998-03-18	18:04:11	2	1	0						
15	30806121	3		1998-03-18	18:04:15	3	1	0	0:00:04					
17	3080610c	3		1998-03-18	9:42:28	2	1	0						
17	3080610c	3		1998-03-18	9:47:41	4	1	0		0:05:13			0:05:13	1
18	3080614b	3		1998-03-18	18:04:23	1	1	0						
18	3080614b	3		1998-03-18	18:04:27	2	1	0						
18	3080614b	3		1998-03-18	18:04:31	3	1	0	0:00:04					
18	3080614b	3		1998-03-20	16:29:51	2	1	0						
18	3080614b	3		1998-03-20	16:30:18	3	1	0	0:00:27					
10	30806157	3		1998-03-25	9:36:28	1	1	0						
10	30806157	3		1998-03-25	9:42:12	2	1	0						
10	30806157	3		1998-03-25	9:50:29	4	1	0		0:08:17			0:08:17	1
10	30806157	3		1998-03-25	12:08:13	5	1	0						
12	30806109	3		1998-03-26	11:54:01	2	1	0						
12	30806109	3		1998-03-26	12:36:19	3	1	0	0:42:18		0:42:18	1		
12	30806109	3		1998-03-26	12:37:55	4	1	0						
12	30806109	3		1998-03-26	13:50:14	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
10	30806157	3		1998-03-27	10:49:12	2	1	0						
10	30806157	3		1998-03-27	10:55:57	4	1	0		0:06:45			0:06:45	1
10	30806157	3		1998-03-27	11:53:38	5	1	0						
14	3080613b	3		1998-03-27	10:40:42	1	1	0						
14	3080613b	3		1998-03-27	10:47:30	2	1	0						
14	3080613b	3		1998-03-27	10:54:19	4	1	0		0:06:49			0:06:49	1
14	3080613b	3		1998-03-27	11:53:12	5	1	0						
18	3080614b	3		1998-03-28	17:07:48	2	1	0						
18	3080614b	3		1998-03-28	17:11:27	4	1	0		0:03:39			0:03:39	1
18	3080614b	3		1998-03-28	18:03:48	5	1	0						
10	30806157	3		1998-03-31	14:56:38	2	1	0						
10	30806157	3		1998-03-31	14:59:54	3	1	0	0:03:16		0:03:16	1		
10	30806157	3		1998-03-31	15:01:42	4	1	0						
10	30806157	3		1998-03-31	16:52:44	5	1	0						
18	3080614b	3		1998-03-31	14:12:12	2	1	0						
18	3080614b	3		1998-03-31	14:30:42	3	1	0	0:18:30		0:18:30	1		
18	3080614b	3		1998-03-31	14:31:32	4	1	0						
18	3080614b	3		1998-03-31	16:18:50	5	1	0						
14	3080613b	3		1998-04-01	15:20:37	2	1	0						
14	3080613b	3		1998-04-01	16:51:54	3	1	0	1:31:17		1:31:17	1		
14	3080613b	3		1998-04-01	16:52:46	4	1	0						
14	3080613b	3		1998-04-01	17:58:43	5	1	0						
35	30806010	3		1998-04-01	13:23:53	2	1	0						
35	30806010	3		1998-04-01	14:29:05	4	1	0		1:05:12				
28	30806122	3		1998-04-03	13:03:34	2	1	0						
28	30806122	3		1998-04-03	13:09:22	3	1	0	0:05:48		0:05:48	1		
28	30806122	3		1998-04-03	14:47:03	5	1	0						
28	30806122	3		1998-04-03	18:26:44	1	1	0						
28	30806122	3		1998-04-03	18:32:52	2	1	0						
28	30806122	3		1998-04-03	18:38:35	3	1	0	0:05:43		0:05:43	1		
28	30806122	3		1998-04-03	21:53:02	5	1	0						
36	30806018	3		1998-04-03	16:45:24	1	1	0						
36	30806018	3		1998-04-03	16:46:45	2	1	0						
36	30806018	3		1998-04-03	17:28:34	3	1	0	0:41:49		0:41:49	1		

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
18	3080614b	3		1998-04-07	13:12:41	1	1	0						
18	3080614b	3		1998-04-07	13:14:51	2	1	0						
18	3080614b	3		1998-04-07	13:49:28	3	1	0	0:34:37		0:34:37	1		
18	3080614b	3		1998-04-07	15:14:48	5	1	0						
41	30806047	3		1998-04-07	9:07:00	1	1	0						
41	30806047	3		1998-04-07	9:15:16	2	1	0						
41	30806047	3		1998-04-07	9:18:37	3	1	0	0:03:21		0:03:21	1		
41	30806047	3		1998-04-07	11:09:24	5	1	0						
41	30806047	3		1998-04-07	13:01:23	2	1	0						
41	30806047	3		1998-04-07	13:05:01	3	1	0	0:03:38		0:03:38	1		
41	30806047	3		1998-04-07	14:25:38	5	1	0						
41	30806047	3		1998-04-07	18:50:22	2	1	0						
41	30806047	3		1998-04-07	19:16:07	3	1	0	0:25:45		0:25:45	1		
41	30806047	3		1998-04-08	10:1926	2	1	0						
41	30806047	3		1998-04-08	10:40:06	3	1	0	0:20:40		0:20:40	1		
41	30806047	3		1998-04-08	11:42:22	5	1	0						
41	30806047	3		1998-04-08	17:55:30	2	1	0						
41	30806047	3		1998-04-08	18:41:35	3	1	0	0:46:05		0:46:05	1		
41	30806047	3		1998-04-08	19:51:12	5	1	0						
18	3080614b	3		1998-04-10	10:39:28	2	1	0						
18	3080614b	3		1998-04-10	11:12:27	4	1	0		0:32:59				
18	3080614b	3		1998-04-10	13:05:13	5	1	0						
31	30806049	3		1998-04-11	11:07:56	2	1	0						
31	30806049	3		1998-04-11	11:44:11	4	1	0		0:36:15				
8	308060b1	3		1998-04-13	13:42:56	2	1	0						
8	308060b1	3		1998-04-13	14:34:11	3	1	0	0:51:15		0:51:15	1		
17	3080610c	3		1998-04-13	10:40:49	1	1	0						
17	3080610c	3		1998-04-13	10:42:40	2	1	0						
17	3080610c	3		1998-04-13	11:35:54	3	1	0	0:53:14		0:53:14	1		
34	30806043	3		1998-04-14	15:02:56	2	1	0						
34	30806043	3		1998-04-14	15:26:30	4	1	0		0:23:34				

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
41	30806047	3		1998-04-14	16:15:34	1	1	0						
41	30806047	3		1998-04-14	16:18:04	2	1	0						
41	30806047	3		1998-04-14	16:22:57	3	1	0	0:04:53		0:04:53	1		
41	30806047	3		1998-04-14	16:23:36	4	1	0						
41	30806047	3		1998-04-14	16:41:25	5	1	0						
41	30806047	3		1998-04-14	17:26:57	1	1	0						
41	30806047	3		1998-04-14	17:31:51	2	1	0						
41	30806047	3		1998-04-14	17:35:47	3	1	0	0:03:56		0:03:56	1		
41	30806047	3		1998-04-14	17:36:21	4	1	0						
41	30806047	3		1998-04-15	8:46:54	1	1	0						
41	30806047	3		1998-04-15	8:49:33	2	1	0						
41	30806047	3		1998-04-15	9:31:22	3	1	0	0:41:49		0:41:49	1		
41	30806047	3		1998-04-17	12:57:30	2	1	0						
41	30806047	3		1998-04-17	13:30:11	3	1	0	0:32:41		0:32:41	1		
41	30806047	3		1998-04-21	13:53:40	2	1	0						
41	30806047	3		1998-04-21	18:40:50	4	1	0		4:47:10				
8	308060b1	3		1998-04-22	13:11:27	1	1	0						
8	308060b1	3		1998-04-22	13:14:29	2	1	0						
8	308060b1	3		1998-04-22	13:42:56	4	1	0		0:28:27				
15	30806121	3		1998-04-22	13:15:37	1	1	0						
15	30806121	3		1998-04-22	13:16:58	2	1	0						
15	30806121	3		1998-04-22	13:30:56	3	1	0	0:13:58		0:13:58	1		
15	30806121	3		1998-04-22	13:32:02	4	1	0						
28	30806122	3		1998-04-22	18:16:03	2	1	0						
28	30806122	3		1998-04-22	18:49:59	4	1	0		0:33:56				
28	30806122	3		1998-04-22	22:05:51	5	1	0						
36	30806018	3		1998-04-22	14:15:42	2	1	0						
36	30806018	3		1998-04-22	14:23:43	4	1	0		0:08:01			0:08:01	1
36	30806018	3		1998-04-22	16:08:29	5	1	0						
9	308060c2	3		1998-04-23	8:58:12	1	1	0						
9	308060c2	3		1998-04-23	9:00:33	2	1	0						
9	308060c2	3		1998-04-23	9:04:21	4	1	0		0:03:48			0:03:48	1
9	308060c2	3		1998-04-23	13:09:38	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
12	30806109	3		1998-04-23	9:13:51	1	1	0						
12	30806109	3		1998-04-23	9:15:40	2	1	0						
12	30806109	3		1998-04-23	10:33:02	3	1	0	1:17:53		1:17:53	1		
12	30806109	3		1998-04-23	11:51:36	5	1	0						
36	30806018	3		1998-04-23	8:49:22	2	1	0						
36	30806018	3		1998-04-23	9:46:20	3	1	0	0:56:58		0:56:58	1		
36	30806018	3		1998-04-23	10:43:52	5	1	0						
36	30806018	3		1998-04-23	11:32:55	2	1	0						
36	30806018	3		1998-04-23	12:25:38	3	1	0	0:52:43		0:52:43	1		
36	30806018	3		1998-04-23	13:04:02	5	1	0						
36	30806018	3		1998-04-23	16:16:30	1	1	0						
36	30806018	3		1998-04-23	16:32:29	2	1	0						
36	30806018	3		1998-04-23	17:38:03	3	1	0	1:05:34		1:05:34	1		
36	30806018	3		1998-04-23	18:22:05	5	1	0						
41	30806047	3		1998-04-23	7:39:42	1	1	0						
41	30806047	3		1998-04-23	8:20:29	2	1	0						
41	30806047	3		1998-04-23	8:27:22	3	1	0	0:06:53		0:06:53	1		
41	30806047	3		1998-04-23	8:28:06	4	1	0						
41	30806047	3		1998-04-23	10:09:04	5	1	0						
41	30806047	3		1998-04-23	18:23:03	1	1	0						
41	30806047	3		1998-04-23	18:47:53	2	1	0						
41	30806047	3		1998-04-23	19:01:55	3	1	0	0:14:02		0:14:02	1		
41	30806047	3		1998-05-07	17:47:33	2	1	0						
41	30806047	3		1998-05-07	18:19:50	3	1	0	0:32:17		0:32:17	1		
41	30806047	3		1998-05-07	18:20:43	4	1	0						
41	30806047	3		1998-05-07	18:56:29	5	1	0						
14	3080613b	3		1998-05-08	10:33:05	1	1	0						
14	3080613b	3		1998-05-08	10:45:40	2	1	0						
14	3080613b	3		1998-05-08	11:32:27	3	1	0	0:46:47		0:46:47	1		
14	3080613b	3		1998-05-08	11:33:11	4	1	0						
14	3080613b	3		1998-05-08	12:44:05	5	1	0						
28	30806122	3		1998-05-08	18:14:38	1	1	0						
28	30806122	3		1998-05-08	18:18:50	2	1	0						
28	30806122	3		1998-05-08	18:23:43	4	1	0		0:04:53			0:04:53	1
28	30806122	3		1998-05-08	19:18:40	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
36	30806018	3		1998-05-08	14:05:26	1	1	0						
36	30806018	3		1998-05-08	14:07:34	2	1	0						
36	30806018	3		1998-05-08	14:09:17	4	1	0		0:01:43			0:01:43	1
36	30806018	3		1998-05-08	15:01:59	5	1	0						
36	30806018	3		1998-05-08	15:02:40	1	1	0						
36	30806018	3		1998-05-08	17:51:47	2	1	0						
36	30806018	3		1998-05-08	18:32:19	3	1	0	0:40:32		0:40:32	1		
36	30806018	3		1998-05-08	18:33:05	4	1	0						
36	30806018	3		1998-05-08	19:32:10	5	1	0						
41	30806047	3		1998-05-08	8:24:46	2	1	0						
41	30806047	3		1998-05-08	8:31:35	3	1	0	0:06:49		0:06:49	1		
41	30806047	3		1998-05-08	8:32:08	4	1	0						
41	30806047	3		1998-05-08	9:38:24	5	1	0						
41	30806047	3		1998-05-08	17:58:00	1	1	0						
41	30806047	3		1998-05-08	18:07:53	2	1	0						
41	30806047	3		1998-05-08	18:37:34	3	1	0	0:29:41		0:29:41	1		
41	30806047	3		1998-05-08	18:39:22	4	1	0						
36	30806018	3		1998-05-09	13:37:27	2	1	0						
36	30806018	3		1998-05-09	14:18:23	3	1	0	0:40:56		0:40:56	1		
36	30806018	3		1998-05-09	16:07:30	5	1	0						
36	30806018	3		1998-05-09	16:56:28	1	1	0						
36	30806018	3		1998-05-09	16:58:43	2	1	0						
36	30806018	3		1998-05-09	17:33:52	3	1	0	0:35:09		0:35:09	1		
36	30806018	3		1998-05-09	18:15:15	5	1	0						
41	30806047	3		1998-05-09	8:53:37	2	1	0						
41	30806047	3		1998-05-09	8:57:25	4	1	0		0:03:48			0:03:48	1
41	30806047	3		1998-05-09	10:08:47	5	1	0						
41	30806047	3		1998-05-09	11:59:09	2	1	0						
41	30806047	3		1998-05-09	12:36:30	4	1	0		0:37:21			0:37:21	1
41	30806047	3		1998-05-09	13:41:21	5	1	0						
14	3080613b	3		1998-05-11	15:12:55	2	1	0						
14	3080613b	3		1998-05-11	15:13:09	3	1	0	0:00:14					
14	3080613b	3		1998-05-11	15:49:43	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
28	30806122	3		1998-05-11	9:59:15	1	1	0						
28	30806122	3		1998-05-11	10:03:41	2	1	0						
28	30806122	3		1998-05-11	10:10:52	3	1	0	0:07:11		0:07:11	1		
28	30806122	3		1998-05-11	11:30:38	4	1	0						
28	30806122	3		1998-05-11	13:23:30	5	1	0						
28	30806122	3		1998-05-11	13:25:41	1	1	0						
28	30806122	3		1998-05-11	14:26:49	2	1	0						
28	30806122	3		1998-05-11	14:29:59	4	1	0		0:03:10			0:03:10	1
28	30806122	3		1998-05-11	15:24:17	5	1	0						
28	30806122	3		1998-05-11	16:35:12	2	1	0						
28	30806122	3		1998-05-11	16:37:52	4	1	0		0:02:40			0:02:40	1
28	30806122	3		1998-05-11	17:45:45	5	1	0						
28	30806122	3		1998-05-11	18:21:26	2	1	0						
28	30806122	3		1998-05-11	18:28:40	4	1	0		0:07:14			0:07:14	1
28	30806122	3		1998-05-11	19:39:53	5	1	0						
41	30806047	3		1998-05-11	11:39:42	1	1	0						
41	30806047	3		1998-05-11	11:40:30	2	1	0						
41	30806047	3		1998-05-11	12:23:40	3	1	0	0:43:10		0:43:10	1		
41	30806047	3		1998-05-11	12:24:50	4	1	0						
41	30806047	3		1998-05-11	15:12:48	1	1	0						
41	30806047	3		1998-05-11	15:44:27	2	1	0						
41	30806047	3		1998-05-11	16:34:51	3	1	0	0:50:24		0:50:24	1		
41	30806047	3		1998-05-11	16:35:23	4	1	0						
41	30806047	3		1998-05-11	18:38:23	5	1	0						
28	30806122	3		1998-05-12	8:51:38	2	1	0						
28	30806122	3		1998-05-12	9:00:32	4	1	0		0:08:54			0:08:54	1
28	30806122	3		1998-05-12	9:28:28	5	1	0						
28	30806122	3		1998-05-12	12:45:39	2	1	0						
28	30806122	3		1998-05-12	13:23:32	4	1	0		0:37:53			0:37:53	1
28	30806122	3		1998-05-12	15:12:50	5	1	0						
41	30806047	3		1998-05-12	9:22:42	2	1	0						
41	30806047	3		1998-05-12	9:28:06	3	1	0	0:05:24		0:05:24	1		
41	30806047	3		1998-05-12	12:03:28	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
41	30806047	3		1998-05-13	15:05:31	2	1	0						
41	30806047	3		1998-05-13	15:28:22	4	1	0		0:22:51				
41	30806047	3		1998-05-13	17:18:08	5	1	0						
41	30806047	3		1998-05-13	18:29:02	2	1	0						
41	30806047	3		1998-05-13	18:31:37	4	1	0		0:02:35			0:02:35	1
18	3080614b	3		1998-05-13	9:58:43	1	1	0						
18	3080614b	3		1998-05-13	10:05:18	2	1	0						
18	3080614b	3		1998-05-13	13:35:21	4	1	0		3:30: 03			3:30: 03	1
18	3080614b	3		1998-05-13	16:26:12	5	1	0						
41	30806047	3		1998-05-13	10:31:11	2	1	0						
41	30806047	3		1998-05-13	10:36:38	4	1	0		0:05:27			0:05:27	1
41	30806047	3		1998-05-13	12:09:40	5	1	0						
41	30806047	3		1998-05-13	15:40:46	2	1	0						
41	30806047	3		1998-05-13	15:45:15	3	1	0	0:04:29		0:04:29	1		
41	30806047	3		1998-05-13	15:47:40	4	1	0						
41	30806047	3		1998-05-13	16:34:35	5	1	0						
41	30806047	3		1998-05-13	18:31:18	2	1	0						
41	30806047	3		1998-05-13	18:34:32	4	1	0		0:03:14			0:03:14	1
28	30806122	3		1998-05-14	17:56:49	1	1	0						
28	30806122	3		1998-05-14	18:01:09	2	1	0						
28	30806122	3		1998-05-14	18:09:01	4	1	0		0:07:52			0:07:52	1
28	30806122	3		1998-05-14	18:57:05	5	1	0						
41	30806047	3		1998-05-14	11:09:22	2	1	0						
41	30806047	3		1998-05-14	11:39:11	4	1	0		0:29:49			0:29:49	1
41	30806047	3		1998-05-14	13:19:48	5	1	0						
41	30806047	3		1998-05-14	14:54:31	2	1	0						
41	30806047	3		1998-05-14	14:58:03	4	1	0		0:03:32			0:03:32	1
41	30806047	3		1998-05-14	17:54:48	5	1	0						
41	30806047	3		1998-05-14	17:57:23	1	1	0						
41	30806047	3		1998-05-14	18:34:26	2	1	0						
41	30806047	3		1998-05-14	18:38:36	4	1	0		0:04:10			0:04:10	1
28	30806122	3		1998-05-15	11:19:45	2	1	0						
28	30806122	3		1998-05-15	11:32:13	4	1	0		0:12:28				
28	30806122	3		1998-05-15	12:27:33	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
28	30806122	3		1998-05-15	14:59:10	1	1	0						
28	30806122	3		1998-05-15	15:04:40	2	1	0						
28	30806122	3		1998-05-15	15:10:04	3	1	0	0:05:24		0:05:24	1		
41	30806047	3		1998-05-15	12:58:11	1	1	0						
41	30806047	3		1998-05-15	13:01:44	2	1	0						
41	30806047	3		1998-05-15	14:10:13	3	1	0	1:08:29		1:08:29	1		
41	30806047	3		1998-05-15	14:20:12	4	1	0						
41	30806047	3		1998-05-15	16:32:09	5	1	0						
31	30806049	3		1998-05-16	16:11:30	2	1	0						
31	30806049	3		1998-05-16	16:33:50	4	1	0		0:22:20				
31	30806049	3		1998-05-25	12:24:12	2	1	0						
31	30806049	3		1998-05-25	13:03:10	4	1	0		0:38:58				
41	30806047	3		1998-05-25	11:52:23	1	1	0						
41	30806047	3		1998-05-25	11:58:06	2	1	0						
41	30806047	3		1998-05-25	12:03:04	4	1	0		0:04:58			0:04:58	1
41	30806047	3		1998-05-25	12:41:59	5	1	0						
41	30806047	3		1998-05-25	14:28:50	2	1	0						
41	30806047	3		1998-05-25	14:34:57	3	1	0	0:06:07		0:06:07	1		
41	30806047	3		1998-05-25	14:35:31	4	1	0						
41	30806047	3		1998-05-25	15:05:38	5	1	0						
41	30806047	3		1998-05-25	16:51:13	2	1	0						
41	30806047	3		1998-05-25	18:13:41	4	1	0		1:22:28				
41	30806047	3		1998-05-25	18:59:09	5	1	0						
28	30806122	3		1998-05-26	10:04:36	1	1	0						
28	30806122	3		1998-05-26	10:07:01	2	1	0						
28	30806122	3		1998-05-26	10:37:10	3	1	0	0:30:09		0:30:09	1		
28	30806122	3		1998-05-26	10:38:33	4	1	0						
28	30806122	3		1998-05-26	15:04:43	5	1	0						
31	30806049	3		1998-05-26	13:11:12	2	1	0						
31	30806049	3		1998-05-26	13:39:35	4	1	0		0:28:23				
31	30806049	3		1998-05-26	18:02:58	2	1	0						
31	30806049	3		1998-05-26	18:24:13	4	1	0		0:21:15				

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
41	30806047	3		1998-05-26	11:01:25	2	1	0						
41	30806047	3		1998-05-26	11:08:22	3	1	0	0:06:57		0:06:57	1		
41	30806047	3		1998-05-26	11:09:03	4	1	0						
41	30806047	3		1998-05-26	12:24:53	5	1	0						
41	30806047	3		1998-05-26	15:02:17	2	1	0						
41	30806047	3		1998-05-26	15:06:08	3	1	0	0:03:51		0:03:51	1		
41	30806047	3		1998-05-26	15:06:34	4	1	0						
41	30806047	3		1998-05-26	15:40:02	5	1	0						
28	30806122	3		1998-05-27	7:18:09	1	1	0						
28	30806122	3		1998-05-27	8:07:20	2	1	0						
28	30806122	3		1998-05-27	8:12:08	3	1	0	0:04:48		0:04:48	1		
28	30806122	3		1998-05-27	8:12:46	4	1	0						
28	30806122	3		1998-05-27	9:04:10	5	1	0						
28	30806122	3		1998-05-27	11:54:22	1	1	0						
28	30806122	3		1998-05-27	11:57:24	2	1	0						
28	30806122	3		1998-05-27	12:06:35	3	1	0	0:09:11		0:09:11	1		
28	30806122	3		1998-05-27	12:08:13	4	1	0						
28	30806122	3		1998-05-27	18:37:05	5	1	0						
41	30806047	3		1998-05-27	9:01:30	2	1	0						
41	30806047	3		1998-05-27	9:02:59	4	1	0		0:01:29			0:01:29	1
41	30806047	3		1998-05-27	13:55:29	2	1	0						
41	30806047	3		1998-05-27	13:58:40	3	1	0	0:03:11		0:03:11	1		
41	30806047	3		1998-05-27	16:56:40	2	1	0						
41	30806047	3		1998-05-27	17:04:40	4	1	0		0:08:00			0:08:00	1
28	30806122	3		1998-05-28	8:41:18	1	1	0						
28	30806122	3		1998-05-28	8:44:38	2	1	0						
28	30806122	3		1998-05-28	9:08:28	3	1	0	0:23:50		0:23:50	1		
28	30806122	3		1998-05-28	9:09:28	4	1	0						
28	30806122	3		1998-05-28	10:15:48	5	1	0						
28	30806122	3		1998-05-28	14:45:12	2	1	0						
28	30806122	3		1998-05-28	14:49:22	3	1	0	0:04:10		0:04:10	1		
28	30806122	3		1998-05-28	18:06:19	2	1	0						
28	30806122	3		1998-05-28	18:11:30	3	1	0	0:05:11		0:05:11	1		
28	30806122	3		1998-05-28	18:12:26	4	1	0						
28	30806122	3		1998-05-28	19:50:28	5	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
41	30806047	3		1998-05-28	11:39:57	2	1	0						
41	30806047	3		1998-05-28	12:04:37	3	1	0	0:24:40		0:24:40	1		
41	30806047	3		1998-05-28	12:05:19	4	1	0						
41	30806047	3		1998-05-28	13:17:07	5	1	0						
41	30806047	3		1998-05-28	17:25:20	2	1	0						
41	30806047	3		1998-05-28	18:06:12	3	1	0	0:40:52		0:40:52	1		
41	30806047	3		1998-05-28	18:06:54	4	1	0						
41	30806047	3		1998-05-28	18:52:04	5	1	0						
28	30806122	3		1998-05-29	8:45:42	2	1	0						
28	30806122	3		1998-05-29	11:13:37	3	1	0	2:27:55		2:27:55	1		
28	30806122	3		1998-05-29	11:15:02	4	1	0						
28	30806122	3		1998-05-29	13:30:52	5	1	0						
28	30806122	3		1998-05-29	15:56:03	2	1	0						
28	30806122	3		1998-05-29	16:02:00	3	1	0	0:05:57		0:05:57	1		
28	30806122	3		1998-05-29	16:02:20	4	1	0						
28	30806122	3		1998-05-29	16:33:02	5	1	0						
41	30806047	3		1998-05-29	11:36:02	2	1	0						
41	30806047	3		1998-05-29	11:41:12	4	1	0		0:05:10			0:05:10	1
41	30806047	3		1998-05-29	12:44:47	5	1	0						
41	30806047	3		1998-05-29	16:24:24	2	1	0						
41	30806047	3		1998-05-29	16:28:11	4	1	0		0:03:47			0:03:47	1
28	30806122	3		1998-05-30	11:17:48	2	1	0						
28	30806122	3		1998-05-30	11:43:06	3	1	0	0:25:18		0:25:18	1		
28	30806122	3		1998-05-30	11:44:31	4	1	0						
28	30806122	3		1998-05-30	12:46:28	5	1	0						
28	30806122	3		1998-05-30	15:11:03	2	1	0						
28	30806122	3		1998-05-30	15:39:39	3	1	0	0:28:36		0:28:36	1		
28	30806122	3		1998-05-30	15:41:26	4	1	0						
28	30806122	3		1998-05-30	15:50:53	2	1	0						
28	30806122	3		1998-05-30	16:55:36	3	1	0	1:04:43		1:04:43	1		
28	30806122	3		1998-05-30	16:56:07	4	1	0						

Data Record for Treatment Vehicle Events

VEH ID	DEV ID	STATUS	CARRIER NAME	DATE	TIME	LOCATION	LANE	LIGHT	2 to 3 Time	2 to 4 Time	2 to 3 in 3 min. or more		2 to 4 in less than 11 min.	
											Time	Cnt	Time	Cnt
41	30806047	3		1998-05-30	13:38:36	2	1	0						
41	30806047	3		1998-05-30	14:02:34	4	1	0		0:23:58				
41	30806047	3		1998-05-30	15:47:23	5	1	0						
								Total Time	36:17:20	22:14:45	36:16:19	71	3:08:27	36
								Events	78	58	71		36	
								Average	0:27:55	0:23:01	0:30:39		0:05:14	
									2 to 3	**2 to 4**	**of 3+ mins.**		**< 11 mins.**	
									Events	136	Events	107		

APPENDIX E - EPIC ENROLLMENT, REGISTRATION AND TRIP DETAIL FORMS

Expedited Processing at International Crossings

- What Is EPIC?
- How EPIC Works
- Traffic Volume Graph at the Mariposa International Border Crossing Compound
- View Traffic Conditions at the Mariposa International Border Crossing Compound
- Report on Compound Events
- Pictures of the Superbooth

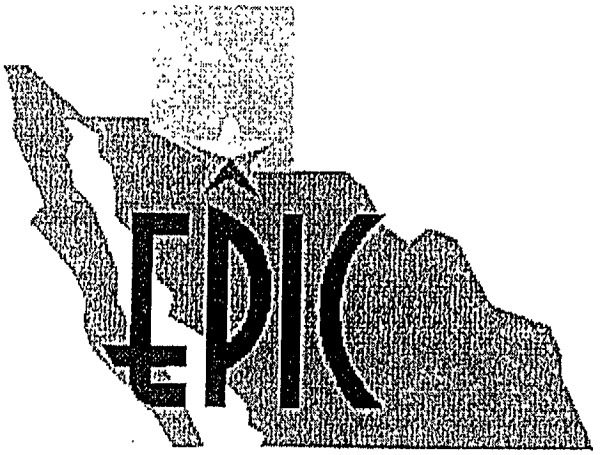
- Motor Carrier Login

Back to EPIC I home

Login: tricar

Password: *****

Login Clear



New Trip Detail | Update Trip Detail | List Trips | Motor Carrier Account Status

EPIC

New Trip Detail | Update Trip Detail | List Trips | Motor Carrier Account Status

Create a new Trip Detail

Shipper: TRICAR SALES INC.

Shipment Date: 07-28-1998

Notify shipper of border crossing? ◉ Yes ○ No

Receiver Information

Name: (required)

E-mail:

Address:

City:

State: Zip:

Fax:

Notify receiver of border crossing? ◉ Yes ○ No

Permit Information

Is a permit required? (required) ◉ Yes ○ No

*If Yes, select the type(s) of permit:

☐ Registration Permit

☐ Fuel Use Permit

Does this load contain hazardous material? ○ Yes ◉ No

*If Yes, enter Material Code:

Does this shipment require an agricultural inspection? ○ Yes ◉ No

---

Registered Broker Information

Please fill in the following information if you are requesting a permit.
The total percent of load must equal 100%.

	Broker Name	Percent of Load
Broker 1	Select one if requesting a permit *If you selected Other, enter the broker's name below.	
Broker 2	None *If you selected Other, enter the broker's name below.	
Broker 3	None *If you selected Other, enter the broker's name below.	

Driver Information

Select a driver from the pulldown list.

Name: MANUEL LOPEZ

*If you selected Other, enter the driver's name or Commercial Driver's License number below.
DO NOT enter both.

Enter Name: (as it appears in the CDL) **OR** Enter Commercial Driver's License Number:

Vehicle Information

Insurance Company: Information Not Provided

The name of your insurance company is not in our database.
Please enter the insurance information below.

Insurance Company:

Insurance Policy Number:

Insurance Expiration Date:

Insurance Contact:

Telephone Number:

Is the policy on file? ○ Yes ○ No (required)

Tractor

Do A, B, or C.

A

NOTE: Skip this section if you are entering information for Section B or Section C.

Select the Equipment Number for the vehicle: None

*If you selected Other from above, enter the Equipment Number for the vehicle:

B

Mexican License Information

NOTE: Skip this section if you are entering information for Section A or Section C.

Select a Mexican License Plate: None

*If you selected Other from above, fill in the information below.

Mexican State: None

**If you selected Other from the list of states, enter the 2-letter abbreviation for the Mexican state:

Mexican Plate Number:

C

US License Information

NOTE: Skip this section if you are entering information for Section A or Section B.

US State: None

**If you selected Other from the list of states, enter the 2-letter abbreviation for the US state:

US Plate Number:

Trailer 1

(Optional)

Select an Equipment Number: None

*If you selected Other from the list, enter the Equipment Number below.

Trailer 2

(Optional)

Select an Equipment Number: None

*If you selected Other from the list, enter the Equipment Number.

Destination

Select the destination of the vehicle: (required) Nogales / Other

*If you selected Other, enter the following information:

City: State: Arizona

**If you selected Other, enter the 2-letter abbreviation for the state:

Is the destination inside the Commercial Zone? ◉ Yes ○ No

Via: Nogales (required)

Gross Vehicle Weight and Number of Axles

Gross vehicle weight not to exceed 80000 lbs.: _____

Enter the weight in pounds.
Do not use a comma in the number.
Do not put the unit.

Number of Axles: ○ 2 ◉ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9

Cargo Description

Please carefully review the form before clicking the submit button.

Submit Trip Detail | Clear Form

EPIC

New Trip Detail | Update Trip Detail | List Trips | Motor Carrier Account Status

EPIC

New Trip Detail | List Trips | Motor Carrier Account Status

Update an Existing Trip Packet

Enter the Trip ID to update: 10284

Update Trip Detail

EPIC

New Trip Detail | Update Trip Detail | List Trips | Motor Carrier Account Status

EPIC Trip Packet Update

Trip ID: 10284

Shipper: TRICAR SALES INC.

Shipment Date: 05-02-1998

Notify shipper of border crossing? ◉ Yes ○ No

Receiver Information

Name: tricar (required)

E-mail:

Address:

City:

State: Zip:

Fax:

Notify receiver of border crossing? ◉ Yes ○ No

Permit Information

Is a permit required?

(•) Yes
( ) No

*If Yes, select the type(s) of permit:

[x] Registration Permit
[x] Fuel Use Permit

Does this load contain hazardous material? ( ) Yes (•) No

*If Yes, enter Material Code: [ ]

Does this shipment required an agricultural inspection? ( ) Yes (•) No

---

Registered Broker Information

Please fill in the following information if you are requesting a permit.
The total percent of load must equal 100%.

	Broker Name	Percent of Load
Broker 1	PACIFIC *If you selected Other, enter the broker's name below.	100
Broker 2	None *If you selected Other, enter the broker's name below.	
Broker 3	None *If you selected Other, enter the broker's name below.	

Driver Information

Select a driver from the pulldown list.

Name: GILBERTO ZANUDO

*If you selected Other, please enter the driver's name or Commercial Driver's License number below. You DO NOT need to enter both.

Enter Name: (as it appears in the CDL) **OR** Enter Commercial Driver's License Number:

Vehicle Information

Select Other if you prefer to use a different Insurance Company for this trip.

Insurance Company: Other

*If you selected Other, please enter the following information:

Insurance Company: price

Insurance Policy Number:

Expiration Date:

Insurance Contact:

Telephone Number:

Is the policy on file? ◉ Yes ○ No (required)

Tractor	**Mexican Vehicle License Information** NOTE: If you are entering the Mexican Vehicle License Information, you DO NOT need to enter the US Vehicle License Information below. Mexican License Plate: SI - TR27011 *If you selected Other from above, fill in the information below. Mexican State: None Mexican Plate Number: **If you selected Other from the list of states, enter the 2-letter abbreviation for the Mexican state: **US Vehicle License Information** NOTE: If you are entering the US Vehicle License Information, you DO NOT need to enter the Mexican Vehicle License Information above. US State: None US Plate Number: **If you selected Other from the list of states, enter the 2-letter abbreviation for the US state:
Trailer 1	Equipment Number: None *If you selected Other from the list, enter the Equipment Number below.

Trailer 2	Equipment Number: None *If you selected Other from the list, enter the Equipment Number below.

Destination

Select the destination of the vehicle: (required) Nogales / Other

*If you selected Other, enter the following information:

City: State: Arizona **If you selected Other, enter the 2-letter abbreviation for the state:

Is the destination inside the Commercial Zone? ○ Yes ○ No

Via: Nogales (required)

Gross Vehicle Weight and Number of Axles

Gross vehicle weight not to exceed 80000 lbs.: 20000

Enter the weight in pounds.
Do not use a comma in the number.
Do not put the unit.

Number of Axles: ○ 2 ○ 3 ○ 4 ◉ 5 ○ 6 ○ 7 ○ 8 ○ 9

Cargo Description

fruits & vegetables

Please carefully review the form before clicking the submit button.

Submit Trip Detail | Clear Form

EPIC

New Trip Detail | Update Trip Detail | List Trips | Motor Carrier Account Status

EPIC

New Trip Detail | Update Trip Detail | Motor Carrier Account Status

07-28-1998

Trip ID	Shipment Date	US License Plate	Mexican License Plate
10297	05-13-1998	UNKNOWN	SI - TS22733
10296	05-11-1998	UNKNOWN	SI - TS29187
10285	05-07-1998	UNKNOWN	SI - TS29187
10284	05-02-1998	UNKNOWN	SI - TR27011
10282	04-25-1998	UNKNOWN	SI - TR20247
10281	04-25-1998	UNKNOWN	SI - TR21341
10280	04-23-1998	UNKNOWN	SI - TR18345
10279	04-23-1998	UNKNOWN	SI - TR21341
10278	04-21-1998	UNKNOWN	SI - TS46207
10277	04-21-1998	UNKNOWN	SI - TR20247
10276	04-20-1998	UNKNOWN	SI - TS22733
10275	04-20-1998	UNKNOWN	SI - TS46207
10274	04-20-1998	UNKNOWN	SI - TS29187
10273	04-20-1998	UNKNOWN	SI - TR20247
10272	04-18-1998	UNKNOWN	SI - TS61563
10271	04-18-1998	UNKNOWN	SI - TR20248

Return to EPIC Home >>

EPIC

New Trip Detail | Update Trip Detail | List Trips

Motor Carrier Account Status

EPIC clients may access the database storing data reflecting the trips of their trucks. The user may select a report on all of the instrumented vehicles or a specific vehicle. All reports can be tailored by specifing a start date and an end date.

SELECTION CRITERIA: ○ Single Truck **Base State:** [ ] **Plate No.:** [ ]
◉ All Trucks

START DATE: 07-1-1998
END DATE: 07-28-1998

Note: Enter the dates using the following format: mm-dd-yyyy. (ex. 07-28-1998)

DIRECTION: ○ Northbound ○ Southbound
◉ Northbound and Southbound

Submit | Clear Form

EPIC

New Trip Detail | Update Trip Detail | List Trips | Motor Carrier Account Status

Status Report on All Trucks

START DATE: 07-01-1998
END DATE: 07-28-1998

US LICENSE	MEXICAN LICENSE	DRIVER	DATE	TIME	DIRECTION	LOCATION
UNKNOWN	SI - TR18345	JOAQUIN CHONG	07-14-1998	16:16:40	I	EXIT
UNKNOWN	SI - TR18345	JOAQUIN CHONG	07-14-1998	15:44:29	I	GATE
UNKNOWN	SI - TR18345	N/A	07-10-1998	17:58:05	E	SB ADVANCE
UNKNOWN	SI - TR18345	JOAQUIN CHONG	07-10-1998	15:57:46	I	GATE
UNKNOWN	SI - TR18345	JOAQUIN CHONG	07-10-1998	15:55:20	I	ADVANCE
UNKNOWN	SI - TR18345	JOAQUIN CHONG	07-07-1998	15:08:34	I	ADVANCE
UNKNOWN	SI - TR18345	JOAQUIN CHONG	07-07-1998	15:10:08	I	GATE
UNKNOWN	SI - TR18345	N/A	07-07-1998	16:47:28	E	SB ADVANCE
UNKNOWN	SI - TR18345	N/A	07-03-1998	15:56:07	E	SB ADVANCE
UNKNOWN	SI - TR18345	JOAQUIN CHONG	07-03-1998	15:01:10	I	EXIT
UNKNOWN	SI - TR18345	JOAQUIN CHONG	07-03-1998	14:29:15	I	GATE
UNKNOWN	SI - TR18345	JOAQUIN CHONG	07-03-1998	14:27:04	I	ADVANCE

EPIC Truck Registration

Company Name:	
Insurance Company:	
Insurance Company Contact:	Contact Telephone #:

P.O. Box 58100 ● Santa Clara, CA 95052-8100 ● Tel: 1-800-PrePass ● Fax: 408-987-4872

Owner Equipment Number (OEN)	Truck			Mexican Plate			US Plate			Vin
	Year	Make	# of Axles	State	Number	Exp. Date	State	Number	Exp. Date	
1.						/ /			/ /	
2.						/ /			/ /	
3.						/ /			/ /	
4.						/ /			/ /	
5.						/ /			/ /	
6.						/ /			/ /	
7.						/ /			/ /	
8.						/ /			/ /	
9.						/ /			/ /	
10.						/ /			/ /	
11.						/ /			/ /	
12.						/ /			/ /	
13.						/ /			/ /	
14.						/ /			/ /	
15.						/ /			/ /	
16.						/ /			/ /	
17.						/ /			/ /	
18.						/ /			/ /	
19.						/ /			/ /	
20.						/ /			/ /	
21.						/ /			/ /	
22.						/ /			/ /	
23.						/ /			/ /	
24.						/ /			/ /	
25.						/ /			/ /	

Contact PrePass customer Service Center at 1-800-PrePass with any questions

EPIC Trailer Registration

Company Name:	
Insurance Company:	
Insurance Company Contact:	Contact Telephone #:

P.O. Box 58100 ● Santa Clara, CA 95052-8100 ● Tel: 1-800-PrePass ● Fax: 408-987-4872

Owner Equipment Number (OEN)	Truck			Mexican Plate			US Plate			Vin
	Year	Make	# of Axles	State	Number	Exp. Date	State	Number	Exp. Date	
1.						/ /			/ /	
2.						/ /			/ /	
3.						/ /			/ /	
4.						/ /			/ /	
5.						/ /			/ /	
6.						/ /			/ /	
7.						/ /			/ /	
8.						/ /			/ /	
9.						/ /			/ /	
10.						/ /			/ /	
11.						/ /			/ /	
12.						/ /			/ /	
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21.						/ /			/ /	
22.						/ /			/ /	
23.						/ /			/ /	
24.						/ /			/ /	
25.						/ /			/ /	

Contact PrePass customer Service Center at 1-800-PrePass with any questions

EPIC Driver Registration

Company Name:

P.O. Box 58100 • Santa Clara, CA 95052-8100 • Tel: 1-800-PrePass • Fax: 408-987-4872

Drivers Name (Last, First, MI)	Commercial Driver's License Number
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
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11.	
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24.	
25.	

Contact PrePass Service Center at 1-800-PrePass with any questions

APPENDIX F - EPIC RECRUITMENT MATERIALS

ADOT EPIC TEAM

Proceso de1 Cruce de la Frontera para el Transportista

- Pre-envio de1 chequeo de las condiciones de1 trafico y congestion en la frontera – informar a1 cliente de su hora de llegada
- Transmision de1 pre-viaje de1 numero de1 paquete de viaje a EPIC para el proceso de pre-llegada y despacho
- Resolver los problemas de despacho (si hay algunos) identificados en la transmision de confirmacion de1 despacho
- Usar el Internet para controlar el cruce de1 transporte por retrasos inesperados – reaccionar e informar al cliente del retraso

EPIC permite el pre-despacho para la "No-parada" & el control de demoras inesperadas en el cruce.

LOCKHEED MARTIN

ADOT EPIC TEAM

Carrier Border Crossing Process

- Pre-dispatch check of border traffic conditions and congestion -- advise customer of planned arrival
- Pre-trip transmission of trip packet number to EPIC for pre-arrival and clearance processing
- Resolve clearance issues (if any) identified in EPIC confirming clearance transmission
- Use the lnternet to monitor Transport crossing for unexpected delays -- react & advise customer of delay.

EPIC enables pre-clearance for"Non-stop" & monitoring for unexpected crossing delays.

LOCKHEED MARTIN

ADOT EPIC TEAM

Unanse al grupo EPIC !

La participacion traera inmediata mejoras operacionales en el cruce de la frontera, mejora de las relaciones con los clientes, y ser parte delpaso importante en posicionar su compania para la completa y eventual implemntacion de NAFTA.

LOCKHEED MARTIN

ADOT EPIC TEAM

Come Join the EPIC Team !

Participation will bring immediate border crossing operational improvements, improved customer relations, and be an important step in positioning your company for the eventual full implementation of NAFTA.

LOCKHEED MARTIN

SAMPLE EPIC PARTICIPANT QUESTIONS

1. What is the EPIC Project?

The Arizona DOT, other government agencies, and private sector partners created the EPIC Project for the mutual benefit of government and motor carriers crossing into the U.S. at Nogales, Arizona. The goal of EPIC is to expedite the border crossing process by (1) providing for electronic pre-clearance for State of Arizona entry requirements of carriers and drivers and (2) providing Nogales border traffic congestion and queuing information to carriers and shippers. Using traffic congestion data, EPIC participants will be able to improve dispatch scheduling and avoid the worst traffic times and, having been pre-cleared electronically, will avoid stopping at Arizona DOT offices at the border.

2. What is the NATAP Project?

The NATAP and EPIC are different. The NATAP Project, being conducted by U.S. Customs, is a new automated method of electronically checking cargo paperwork. EPIC is an electronic method of checking the qualifications of motor carriers and truck drivers for operation in the U.S. and Arizona. Please note: a participant in EPIC can not participate in NATAP nor can a participant in NATAP participate in EPIC. If you desire more information on NATAP contact your U.S. customs broker.

3. Who can participate in the EPIC Project?

The Arizona DOT is looking for companies operating trucks at Nogales to volunteer for participation in the EPIC Project. Any type of carrier may participate including produce carriers, maquiladoras, and drayage companies. Potential participant carriers will be reviewed by a government committee for a demonstrated commitment to legal and safe operations. The transponders used for the electronic clearance at the border will be provided at no cost to the motor carrier.

If you are interested, contact the EPIC Customer Service C enter by calling 1 - 800-PrePass. Please identify yourself as a new EPIC applicant. The EPIC customer representative will work with you to see if you qualify to be enrolled in the Project. Once enrolled and verified the EPIC representative will ship your transponders to your business location in either the U.S. or Mexico.

for enrollment information, please contact
EPIC Customer Service Center
(Voice) 800 - PrePass (Fax) 408-987-4872

4. What does EPIC electronically check at the Nogales commercial compound?

The electronic inspection is for transport entry requirements - truck registration or trip permits, proper truck safety rating, truck insurance, and commercial driver licensing. This electronic inspection is not for cargo or for U.S. immigration requirements. The electronic entry screening conducted by EPIC is real. EPIC replaces the current process you follow today at the Arizona DOT offices at the compound.

Prior to leaving for the border, your company will transmit certain trip information electronically through the Internet to the EPIC system. The EPIC system will use this pre-trip data to check that your truck and your driver are properly qualified to enter the U.S. and Arizona. You will be notified electronically of your entry status. This notification will come back as a response to your transmission of the trip data through your Internet connection. The return electronic message will tell you if you are O.K. to go or not. If there is an unsatisfactory entry condition, the system will tell you and this pre-trip notification will allow you time to correct the entry deficiency prior to leaving for the border.

5. How does EPIC work at the Nogales commercial compound?

As your truck approaches the primary entrance gates to the U.S. Customs, the transponder mounted on your truck windshield is electronically read. A key number read from the transponder is electronically sent to the EPIC computer. The EPIC computer located in the Arizona DOT checks your entry status into the U.S. for that truck and driver. While the EPIC computer is checking your status, the truck will continue to the primary entrance gate at Customs. At the Customs primary inspection gate the same transponder will light-up either 'green' or 'yellow.' If the transponder lights up green you do not have to park to go to the Arizona DOT office located in the compound. If the transponder lights yellow, you must park at a U.S. Customs clock and go to the Arizona DOT office located in the compound. The Arizona DOT officer will instruct you on why you were not cleared and what corrective action is required.

For enrollment Information, please contact
EPIC Customer Service Center
(Voice) 800 -PrePass (Fax) 408-987-4872

6. How do I get more transponders?

If your company is currently participating and you desire more transponders, please call the EPIC Service Center. Identify yourself as a current EPIC participant. During the six month EPIC demonstration period, EPIC is allowed a limited number of transponders. The Service Center will try to assist you if unused transponders remain.

7. Who installs the transponders?

The transponders are very easy to install. We provide simple to follow directions in the instruction pamphlet that comes with the transponder.

8. How do I know the transponder is functioning properly?

If your transponder is functioning properly, it will beep and light up when you start your engine. If you do not receive these tones, advise your dispatcher immediately. If you believe there is a transponder problem, please call the EPIC Service Center at 1-800-PrePass (800-773-7277) for assistance.

9. What should I do if I don't receive any lights or tones on the transponder when I'm at the Nogales commercial compound entrance gate?

If you receive no lights or tones on the transponder, you are required to park at the U.S. Customs dock. Contact an officer in the Arizona DOT office in the compound and advise them that your transponder did not light.

10. Why is it. so important that I carry the FHWA Waiver in my truck? What would happen if I were to lose it while on the road in the U.S.?

The U.S. Department of Transportation, Federal Highway Administration has provided a special waiver for the windshield mounting of the transponder. This waiver is for operations in the U.S. This waiver gives you special exemption for mounting the transponder on the windshield. Should you lose the waiver while on the road, you may be ticketed by an enforcement officer-. The waiver form is a special notification to law enforcement officers of the windshield exception. Please contact the EPIC Service Center for assistance with waiver questions.

EJEMPLOS DE PREGUNTAS DE LOS PARTICIPANTES DE EPIC

1. ?Que es el proyecto EPIC?

El Departamento de Transportacion de Arizona, en conjunto con los socios del gobiemo y del sector privado, crearon el Proyecto EPIC para el beneficio mutuo del gobiemo y de los auto transportistas que estan crusando para los Estados Unidos en Nogales, Arizona. La meta de EPIC es la de agilizar el proceso de1 cruce en la frontera (1) proporcionando una pre-autorizacidn electronica de los requisitos de entrada al Estado de Arizona para los transportistas y conductores y (2) proporcionando informacidn en la congestion de1 trafico y de la cola a los transportistas y importadores/exportadores. Usando los datos de la congestion de trafico, los participantes de EPIC tendran la habilidad de mejorar el horario de envio y de esta manera poder evitar los peores tiempos en el trafico, y siendo pre-autorizados podran evitar la parada en las oficinas de1 Departamento de Transportacion de Arizona en la frontera.

2. ?Que es el Proyecto NATAP?

NATAP y EPIC son dos proyectos diferentes. El Proyecto NATAP que esta siendo administrado por la Aduana de los Estados Unidos, es un metodo nuevo automatizado que electronicamente comprueba la papeleria de1 cargamento. EPIC es un metodo electronico que comprueba las credenciales de los auto transportistas y conductores de camiones para operacidn en los Estados Unidos y Arizona. Por favor tomen nota: un participante de EPIC no puede participar en el proyecto NATAP y tampoco un participante de NATAP puede participar en el proyecto EPIC. Si usted desea tener mas informacion acerca de NATAP comuniquese con el agente de negocios en la Aduana de los Estados Unidos.

3. ?Quienes pueden participar en el Proyecto EPIC?

El Departamento de Transportacion de Arizona esta buscando companias que esten operando camiones en Nogales, como soluntarios para la participacion en el Proyecto EPIC. Cualquier tipo de transportista puede participar incluyendo los transportistas de productos (agricolas). los transportistas de los productos de las maquiladoras, y las companias de can-OS pesados. Los posibles transportistas participantes seran anal izados por un comite de1gobierno para la entrega de una demostracion para una operacion legal y segura. Los transponders usados para el paso electronico en la frontera seran proporcionados sin costo adicional para cl auto transportista.

Si tiene interes, comuniquese con el Centro de Servicio para Clientes llamando al I-800-773-7277. Por favor de identificarse como un candidato nuevo para EPIC. EI

representante de clientes de EPIC trabajara con usted para ver si usted califica para poder ser registrado en el Proyecto. Media vez este registrado y sus credenciales sean verificados el representante de EPIC le enviara sus transponders a sus oficinas ya sea en los Estados Unidos o Mexico.

4. ?Que es lo que EPIC comprueba electronicamente en el complejo comercial en Nogales?

La inspeccidn electronica es para los requisitos de entrada del transporte - registro del camion o permisos de1 viaje, la apropiada clasificacion de seguridad de1 camion, seguro de1 camion, y licencia comercial de1 conductor. Esta inspeccion electrtjnica **no es para los requisitos de1 cargamento o para la oficina de Inmigracion de los Estados Unidos.** La investigacion electronica para la entrada que es llevada a cabo por EPIC es una realidad. EPIC reemplaza el proceso actual que ustedes hoy en dia siguen en el complejo de1 Departamento de Transportacion de Arizona.

Antes de salir hacia la frontera su compania transmitira cierta informacidn de1 viaje electronicamente por medio de1 Internet al sistema EPIC. El sistema EPIC usara estos datos de pre-viaje para revisar antes de su viaje, que el camion y el conductor esten calificados para entrar a los Estados Unidos y Arizona. Usted sera notificado electronicamente de su status de entrada. Esta notificacion sera en respuesta a su transmision hecha por el Internet acerca de los datos del viaje. Elmensaje electronico de retorno le dejara saber si usted puede seguir adelante o no. Si hay alguna condicion de entrada que no sea satisfactoria, el sistema le dira cual y esta notificiacion de pre-viaje le dara tiempo para corregir la deficiencia en los datos de entrada antes de su salida hacia la frontera.

5. ?Como funciona EPIC en el complejo comercial en Nogales?

Cuando su camion se aproxime a las puertas principales de entrada en la Aduana de los Estados Unidos, el transponder colocado en su parabrisas es leido electronicamente. Un numero clave leido de1 transponder es enviado electronicamente a la cornputadora de EPIC. La computadora EPIC ubicada en la oficina de1 Departamento de Transportacion de Arizona: revisan su status de entrada a los Estados Unidos para ese camion y el conductor. Mientras que la computadora de EPIC esta revisando su status, el camion continuara hacia la entrada principal en la Aduana. En la Aduana, en la puerta principal de inspeccion cl mismo transponder encendera dando una luz verde o amarilla. Si el transponder da una luz verde, usted no tiene que estacionarse para ir a la oficina dcl Departamento dc Transportacion de Arizona ubicada en el complejo. Si el transporder da una luz amarilla, ustede debe de estacionarse en el puerto de entrada de la Aduana de los Estados Unidos c ir a la oficina del Departamento de Transportacion de Arizona ubicada en el complejo. La oficina del Departamento de Transportacion de Arizona le dara.

instrucciones en el porque usted no fue admitido, y cuales son las acciones correctivas que sean necesarias.

6. ?Como puedo obtener mas transponders?

Si su compania esta ahora participando y usted desea mas transponders, por favor llame al Centro de Servicio de EPIC. Identifiquese como un participante de EPIC. Durante el periodo de seis meses, EPIC es asignado un limitado numero de transponders. El Centro de Servicio tratara de darles asistencia si existen transponders que no esten en uso.

7. ?Quien instala los transponders?

Los transponders son muy faciles de instalar. Nosotros proporcionamos direcciones que son faciles de seguir en el folleto de jnstrucciones.

8. ?Como se yo si el transponder esta funcionando correctamente?

Si su transponder esta funcionando correctamente, este dara una senal y este se encendera cuando usted arranque su motor. Si usted no recibe estos tonos, inmediatamente avisele a su transportista. Si usted cree que hay un problema con el transponder, por favor llame al Centro de Servicio de EPIC al l-800-773-7277 por asis tencia.

9. ?Que debo de hacer si no recibo ninguna luz o tonos en el transponder cuando este en la puerta de entrada en el complejo comercial?

Si usted no recibe ninguna luz o tonos en el transponder, es requerido que usted se estacione en el Puerto de entrada. Comuniquese con un oficial de1 Departamento de Transportacion de Arizona en el complejo y aviseles que su transponder no encendio.

10. ?Porque es muy importante que yo lleve un Permiso Especial de FHWA en mi camion? ?Que pasaria si yo lo perdiera mientras estoy viajando en los Estados Unidos?

El Departamento de Transportacion de los Estados Unidos. La Administracion Federal de Caminos (Federal Highway Administration= FHWA) ha proporcionado un permiso especial para la instalacion de los transponders en el parabrisas. Este permiso es para operaciones en los Estados Unidos. Este permiso especial les da una excepcion para la instalacion del transponder en el parabrisas. Si usted perdier a su permiso mientras este viajando, usted puede ser multado por un oficial. El formulario del permiso es una notificacion especial para los oficiales en la excepcion de los parabrisas. Por favor com unicarse al Centro de Servicio de EPIC por asistencia con preguntas relacionadas al permiso especial.

June 1, 1997

Attention International Trading Companies:

The U.S. Department of Transportation is sponsoring a border crossing improvement project at the Nogales commercial crossing called EPIC (Expedited Processing at International Crossings). The project team is being lead by the Arizona Department of Transportation (Arizona DOT). The Arizona DOT is supported by other federal and state government agencies and private sector companies.

The EPIC project will soon begin operations. EPIC is seeking volunteer motor carriers and their drivers- to participate. EPIC can accommodate several hundred volunteer trucks and drivers. For those participating, the way you are processed today at the Arizona DOT compound office and the Arizona DOT port-of-entry station will change. For most of your border crossings under EPIC, your truck will not have to stop at these offices as is required today. ***At this time the process administered by U.S. Customs at the Mariposa Compound is not included in EPIC.*** For purposes of cargo and immigration, EPIC participant carriers and drivers will continue to follow current U.S. Customs procedures.

The EPIC is modeled after the successful PrePass truck weigh station electronic clearance program used in a number of U.S. Western states. EPIC will provide a motor carrier entering the U.S. at Nogales three new capabilities: (1) computer access through the Internet for information on Nogales commercial compound traffic congestion conditions; (2) advance status checking of the truck and driver prior to dispatch combined with electronic clearance verification at the border; and (3) access to time and location data of a carrier's truck crossings through the border in both directions,

EPIC is designed to achieve two goals.. The first goal is compliance. EPIC will achieve this goal by (1) educating EPIC carriers and drivers on the State of Arizona entry and compliance requirements; (2) using the Internet to communicate compliance status electronically directly to the carrier prior to dispatch; and (3) as the truck approaches the border, verifying electronically Arizona entry requirements have been met.

The second goal is productivity. With EPIC, both carriers and Arizona state government agencies will be more productive through the expediting of the border crossing The expedited crossing process is achieved by EPIC carriers being able to (1) electronically monitor traffic conditions in order to avoid dispatching to the border at the

For enrollment information, please contact
EPIC Customer Service Center
(Voice) 800 - PrePass (Fax) 408-987-4872

worst times and (2) when crossing the border being checked electronically thus avoiding the stops at the State of Arizona inspection offices. An important note to EPIC participants is EPIC changes the way Arizona truck trip permits are processed. These permits will be requested by the EPIC participant carrier with the carrier's Internet connection . The permit request will be submitted to EPIC from the carrier's office prior to dispatch. EPIC will notify the carrier using the carrier's Internet connection that the permits have been authorized. This eliminates stopping at the Arizona DOT office for the trip permit.

EPIC is one of several very important projects the U.S. federal government and Arizona state government are conducting to improve commercial border crossing operations. As a company doing business at the international border in Nogales, the EPIC should be of strong interest to you. Participation in EPIC will bring immediate border crossing operational improvements, improved customer relations, and be an important step in positioning your company for operations under NAFTA.

Informational meetings will be held during the week of June 30th in Nogales. At these meetings EPIC representatives will explain the project and answer your questions. Project material distributed at the meetings will be in both English and Spanish. The EPIC Team encourages you to attend one of these informative meeting. If you wish to attend, please contact our EPIC Customer Service Center. During the week of June 23rd, those who have expressed an intent to attend will be notified as to the dates, times and locations of the briefing sessions.

If you are unable to make one of the EPIC briefings and desire more information, please contact the EPIC Customer Service Center at 800-PrePass (800-773-7277). The EPIC Customer Service Center will arrange for you to receive the information you need.

Jerry Ward
EPIC Program h/fanager

For enrollment information, please contact
EPIC Customer Service Center
(Voice) 800 - PrePass (Fax) 408-987-4872

1 de Junio de 1997

Atencidn Companias Comerciales Intemacionales:

El Departamento de Transportacion de los Estados Unidos esta patrocinando un proyecto para la mejora del cruce comercial en la frontera en Nogales llamado EPIC (Expedited Processing at International Crossings = Agilizacion de Tramites en el Cruce International). El grupo del proyecto es encabezado por el Departamento de Transportacion de Arizona (Arizona Department of Transportation= ADOT). ADOT es apoyado por otras agencias gubemamentales federales y del Estado y companias del sector privado.

El proyecto EPIC estara muy pronto en operacion. EPIC esta buscando auto transportistas y a sus conductores como voluntarios para participar en este proyecto. EPIC puede acomodar varias centenas de camiones y conductores como voluntarios. Para aquellos clue esten participando, la manera por la cual ustedes son procesados hoy en dia en la oficina de ADOT en el complejo y en la estacion del Puerto de entrada cambiara. En la mayoria de los cruces que usted hara en la frontera bajo EPIC, su camion no tendra que parar en estas oficinas como hoy en dia es requerido. ***En este momento el proceso administrado por la Aduana de los Estados Unidos en el Complejo Mariposa no esta incluido en EPIC.*** Para los propositos del cargamento e inmigracion, los transportistas y conductores participantes en EPIC continuaran siguiendo los procedimientos actuales de la Aduana de los Estados Unidos.

EPIC esta modelado tras el exito del programa PrePass un paso electronico para el camion en la estacion de peso que es usado en un numero de estados del Oeste de los Estados Unidos. EPIC le proporcionara a los auto transportistas entrando los Estados Unidos por Nogales con tres nuevas capacidades: (1) acceso a la computadorn por medio del Internet para obtener informacion acerca dc las condiciones en la congestion de trafico en el complejo comercial en Nogales: (2) un status avanzado de inspeccion del camion y cl conductor antes de ser enviado, cornbinado con la verificacion electronica de paso en la frontera: (3) acceso a los datos de tiempo y la posicion del camion, del transportista crusando la frontera en ambas direcciones.

EPIC esta disenado para realizar dos objetos. El primer objeto es el de cumplimiento EPIC realizara esta meta por (1) educando a los transportistas) conductores de EPIC sobre los requistos de entrada y de cumplimiento en el Estado de Arizona: (2) usando el Internet para comunicar eclstatus electronicamento del cumplimiento directamente al transportista antes de su envio; y (3) COMO el camion su aproxime a la frontera, verificaran electronicamente que todos los requistos hayan sido cumplidos.

Para mayor informacion para suscribirse, por favor llamar al
Centro de Servicio de Clientes de EPIC:
Mensaje (800) 773 7277 Facsimile (408) 907-4872

La segunda meta es la productividad. Con EPIC, ambos transportistas y agencias de1 gobierno de1 Estado de Arizona seran mas productivos por medio de la agilizacidn en el cruce de la frontera. El proceso de agilizacion en el cruce es realizado porque los transportistas de EPIC tienen la capacidad de (1) controlar las condiciones de trafico para poder evitar ser enviado a la frontera en los peores tiempos y (2) cuando esten cruzando la frontera ser inspeccionados electronicamente, de este modo evitando las paradas en las oficinas de inspecion de1 Estado de Arizona. Una nota importante para los participantes de EPIC; es de que EPIC cambia la manera en que los permisos para los camiones son procesados en Arizona. Estos pennisos seran pedidos por los transportistas participantes en EPIC por medio de la conexion de1 Internet de1 transportista. La solicitud de1 permiso sera presentado a EPIC por la oficina de1 transportista antes de1 envio. EPIC notificara al transportista usando la conexidn de1 Internet de1 transportista que los permisos han sido autorizados. Esto elimina la parada en la oficina de ADOT para obtener el permiso de1 viaje.

EPIC es uno de varios proyectos importantes que estan bajo la administracion de1 gobierno federal de los Estados Unidos y el gobiemo de1 Estado de Arizona para la mejora de operaciones comerciales en el cruce de la frontera. Como una de las companias en negocios en la frontera intemacional en Nogales, EPIC dederia de ser de gran interes para usted. La participacion en EPIC le traera mejoras inmediatas en las operaciones del cruce en la frontera, mejoras en las relaciones con los clientes, y ser parte de1 paso importante para poner su compaiiia en operaciones bajo NAFTA.

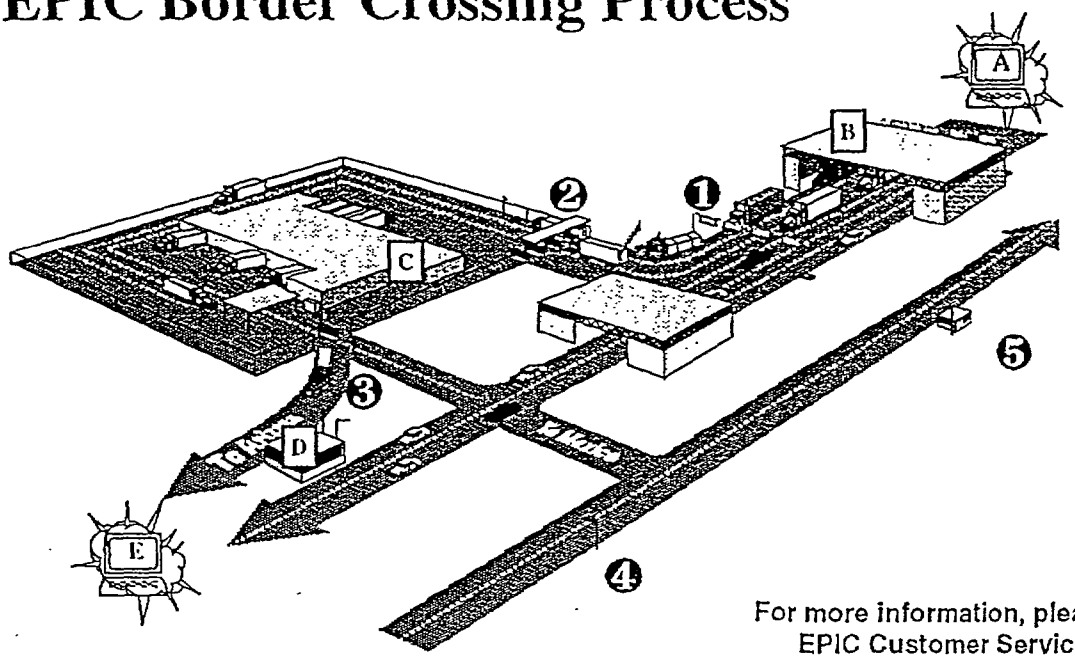
Unas reuniones informativas seran conducidas durante la semana de1 30 de Junio en Nogales. En estas reuniones los representantes de EPIC explicara y contestaran sus preguntas acerca de1 proyecto. Los materiales acerca de1 proyccto quc seran distribuidos en las reuniones estaran en ambos idiomas, Ingles y Espaiiol. El grupo EPIC los anima a ustedes para que atiendan esas reuniones informativas. Si usted desea atender, por favor de comunicarse al Cento de Servicio al Cliente de EPIC. Durante la sernana dcl 23 de Junio, quienes hayan expresado la intencion de atender seran notificados de las fechas. horas y lugares de la sesiones informanvas.

Si usted n o puede atender una de las sesiones informativas y desea obtener mas informacion. por favor llamar al Centro de Servicio al Cliente dc EPIC al 800-PrePass (800-773-7277). El Centro de Servicio al Cliente de EPIC hara arreglos para que usted reciba la informacion que usted necesita.

Jerry Ward
Gerente del Programa EPIC

Para mayor informacion para suscribirse por favor llamar al
Centro de Servicio de Clientes de EPIC:
Mensaje: (800) 773 7277 Facsimile (408) 987-4872

EPIC Border Crossing Process



For more information, please contact:
EPIC Customer Service Center
Voice (800) PrePass Fax (408) 987-4872

A — Prior to truck dispatch to U.S. border, carrier transmits trip data for government pre-trip review; trip permits issued; carrier notified of entry status; transponder updated.

B — Carrier clears Mexico Customs for export (not a part of EPIC).

1 — Advance import AVI reader reads truck transponder and alerts EPIC system C .

C — EPIC computer system checks safety and credential status for carrier, truck, and driver.

2 — AVI reader sends signal to driver by an in-cab transponder for "go" or "no-go" status.

C — "No-go" carriers processed by agency(s); EPIC system updated to "go" status.

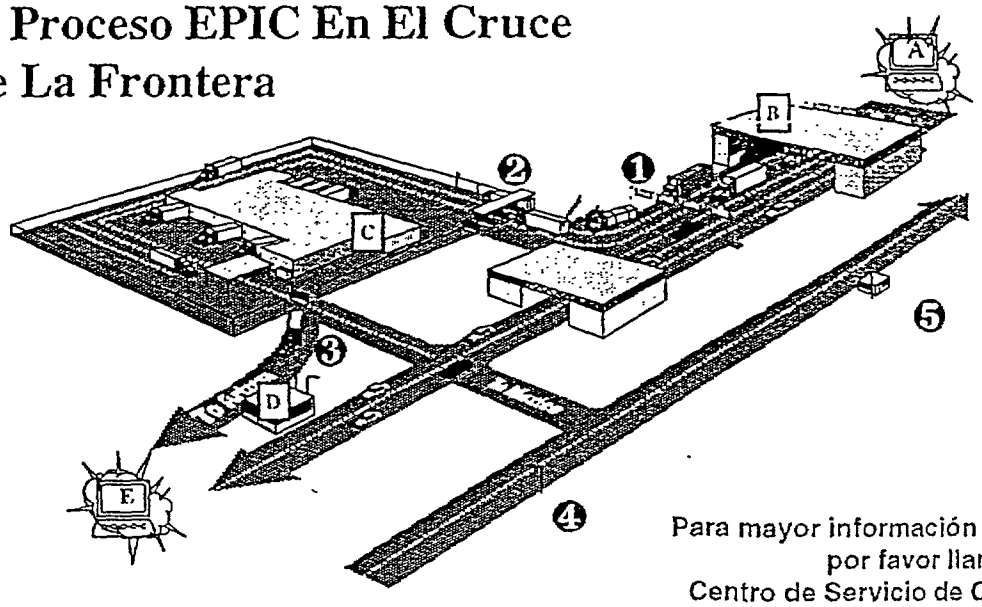
3 — Exit EPIC AVI reader reads transponders; for trucks that were given a "no-go" status on entry at 2 , signals driver of exit status. If still "no-go" must park truck at POE.

D — Computer workstation at AZ MVD POE updated with carrier, truck, and driver data. Visual verification of truck and driver with EPIC computer system performed.

5 — Export AVI reader 5 used to verify "no-go" carriers ordered back to Mexico. Readers at 4 and 5 used by NATAP.

E — Carriers & shippers receive post-travel and event data from EPIC system.

El Proceso EPIC En El Cruce De La Frontera



Para mayor información para suscribirse,
por favor llamar al
Centro de Servicio de Clientes de EPIC
Mensaje (800) 773-7277 Facsímile (408) 987-4872

A — Antes de consignar el camión a la frontera Americana, el transportista transmite los datos del viaje para el repaso de pre-viaje por el gobierno; permisos para el viaje son emitidos; el transportista es notificado de su estatus de entrada.

B — El transportista es despachado por la Aduana Mexicana para la exportación (esto no es parte de EPIC)

1 — Lector AVI para importación avanzada lee el transponder del camión y alerta al sistema EPIC. C

C — El sistema de computación EPIC verifica el estatus de seguridad y las credenciales del transportista, del camión y del conductor.

2 — El lector AVI envía una señal al conductor por el transponder que está en la cabina para el estatus de "paso" o "no paso".

C — Los transportistas que fueron dados la señal de "no paso" son procesados por la agencia(s); el sistema EPIC es puesto al día para un estatus de "paso".

3 — El lector AVI de salida lee los transponders de los camiones que fueron dados el estatus de "no paso" en la entrada 2 , le señalan al conductor su estatus de salida. Si todavía el estatus es de "no paso" deben de estacionar el camión en el puerto de entrada

D — La estación de trabajo en el puerto de entrada del Departamento de Vehículos de Arizona es puesto al día con los datos del transportista, del camión y del conductor. Verificación visual del camión y conductor es llevada a cabo con el sistema EPIC.

5 — El lector AVI para exportación 5 es usado para verificar el estado de "no paso" de los transportistas que fueron regresados a México. Los lectores 1 y 5 son usados por NATAP.

E — Los transportistas y expedidores reciben los datos de pos-viaje y eventos por el sistema EPIC.

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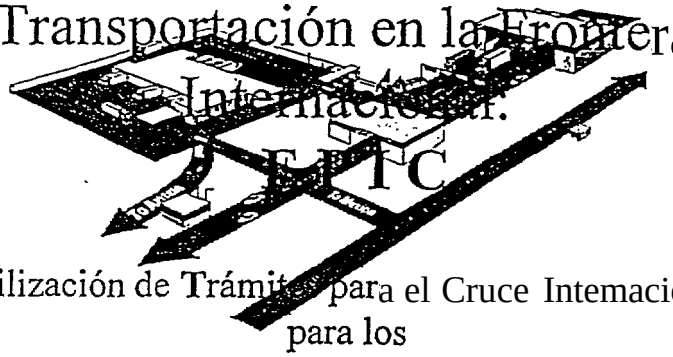
Proyecto de1 Sistema Inteligente de Transportación en la Frontera Internacional:



Agilización de Trámites para el Cruce Intemacional para los Auto Transportistas

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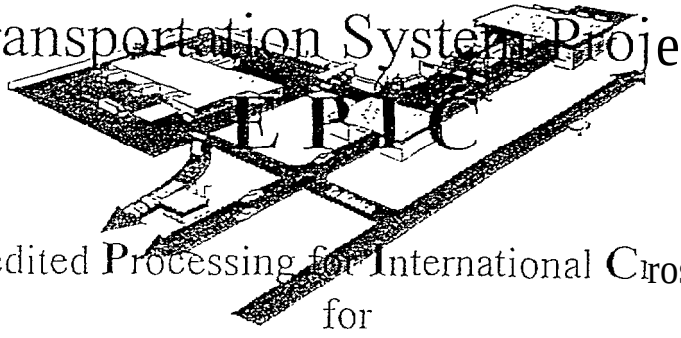
International Border Intelligent Transportation System Project:



Expedited Processing for International Crossings for Motor Carrier-s

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0bjetivos del Proyecto para los Auto Transportistas

Para ***Agilizar*** el cruce en la frontera intemacional . . ,

- Desanollando un sistema comprensivo de despacho del Transporte en el cruce de la frontera para la entrada de1 transportista, los vehiculos, y el conductor, y
- Desarrollando un sistema de1 estatus de1 ***Trafico*** en la frontera que permita a los transportistas y expedidores mejorar la planificacion en la consignacion de1 camibn.

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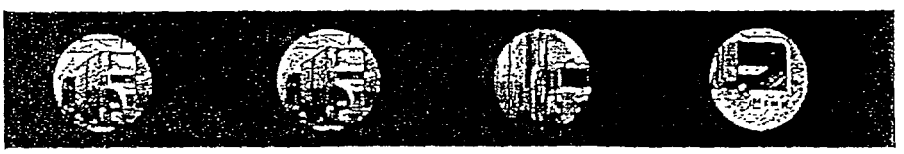
EPIC

Project Objectives for Motor Carriers

To ***Expedite*** international border crossings by. . .

- Deploying a comprehensive border crossing ***Transport*** clearance system enabling electronic clearance for entry for the carrier, vehicles, and driver, and
- Deploying a border ***Traffic*** status system enabling carriers and shippers improved truck dispatch planning.



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Beneficios de EPIC para el Auto Transportista

EPIC: Una Asociacion publica/privada para la mejora en la ejecucibn de las operaciones en el cruce de la frontera de1 transportista para el beneficio de1 comercio y el gobierno. Los benefkios para el auto transportista incluyen:

- Mejora en el control de operaciones
- Mejora en Ia productividad
- Reduccibn de costos
- Mejora en la consistencia de las entregas

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EPIC Motor Carrier Benefits

EPIC: A Public/Private Partnership for improving carrier border crossing operational performance for the benefit of commerce and government. Motor carrier benefits include:

- Improved operational control
- lmprove d productivity
- Reduced costs
- Improved delivery consistency

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Los Servicios de EPIC en el Cruce de la Frontera para el Transportista

+ Un estatus avanzado en el proceso del transporte (Para el despacho en la Aduana del cargamento y en INS para el conductor se siguen los metodos actuales) , y . . .
+ Documentacion del Permiso Electronico de Paso, y . . .
+ Acceso a los datos de la posicion del camion de los sitios con el lector para el cruce actual de la frontera , y . . .
+ Acceso a las condiciones de la congestion del trafico en la frontera, y . . .
+ Automatizacion de las funciones en el despacho del transporte por la agencia.

Meta: Acceso avanzado a informacion para los requisitos de entrada de "No-parada" en el cruce del fransporfe.

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EPIC Carrier Border Crossing Services

+ Advance transport status processing (Customs cargo and INS driver clearance follow current methods) , and . .
+ Electronic trip permit credentialing , and . .
+ Access to truck location data from the reader sites for the actual border crossing , and . .
+ Border traffic congestion condition access , and . . .
+ Automation of agency transport functions for clearance.

Goal: Advance information access for "No-stop" crossing for Transport entry requirements

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La Demostracion del Proyecto EPIC

+ EPIC despacha el Transporte; el conductor (por INS) y despacho de1 cargamento por la aduana usando el proceso actual

- **Seguridad**
- **Seguro**
- **Permisos para el viaje**
- **Requisitos para el conductor**

+ EPIC operacion completa por un minimo de seis meses
+ El plan es de una capacidad permanente
+ Participacion de1 transportista es voluntaria

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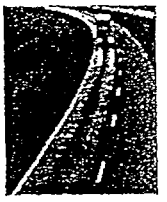
The EPIC Demonstration Project

+ EPIC clears Transports; driver (for INS) & cargo cleared by Customs using current process



- Safety
- Insurance
- Trip permits
- Driver qualification

+ EPIC full operations for six month minimum
+ Plan is for permanent capability
+ Carrier participation voluntary

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Requisitos para la Participacion

- Operar o usar camiones (o usar los camiones de1 auto transportista) que regularmente usan el cruce en Nogales
- Los camiones de NATAP no son elegibles
- Regular empleo o uso de conductores
- Entrega de operaciones seguras y legales
- Computadora personal 386+ con acceso al Internet y browser (visualizador)
- Version de Netscape 2.0 o preferible un browser mas reciente
- Impresora por laser o de chorro de tinta
- Deseo de ayudar con un resumen de la experiencia de los evaluadores

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Requirements for Participation

- Operate or use trucks (or use a motor carrier's trucks) that regularly use the crossing at Nogales
- NATAP trucks are not eligible
- Employ or use regular drivers
- Commitment to safe and legal operations
- 386+ PC with Internet access and browser
- Netscape version 2.0 or newer- browser preferred
- Inkjet or laser-jet printcr-
- Willingness to brief evaluators on cxpcriencc

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Para Empezar

- O Llenar el formulario de aplicacion: vehiculos y conductores
- O Aplicacion es revisada por el comit de EPIC de1 gobierno
- O Programar una inspeccion de seguridad de1 camion por AZ DPS . .
- O Programar tarjeta con foto del conductor or licencia para e1 complejo
- O Instalar transponders
- O Instalar y probar el acceso de1 Internet al Sistema EPIC

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Getting Started

- O Complete enrollment application: vehicles and drivers
- O Application reviewed by EPIC government committee
- @ Schedule truck safety inspection by AZ DPS
- O Schedule picture of driver- compound card or Iictnsf
- O Install transponders
- O Set-up and test Internet access to EPIC System

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