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September 28, 1994

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20006
STOP CODE: 1170

Re: Ex Parte Communication in PR Docket No. 93-61

Dear Mr. Caton:

Pursuant to Section 1.1206(a)(2) of the Commission's Rules, notice is hereby given of an *ex parte* communication regarding the above-referenced proceeding. An original and one copy of this letter are being filed with the Secretary's Office.

Today, Richard E. Wiley and I accompanied G. Russell Mortenson, President of Amtech Corporation, to a meeting with Mr. Ralph Haller, Chief of the Private Radio Bureau; Ms. Rosalind Allen, Chief of the Bureau's Land Mobile and Microwave Division; and Mr. F. Ronald Netro, Engineering Advisor to the Bureau Chief. A copy of the materials supplied during the meeting is enclosed.

Should any question arise concerning this matter, please contact me.

Respectfully submitted,

David E. Hilliard

David E. Hilliard
Attorney for Amtech Corporation

cc: Messrs. Haller and Netro (w/o encl.)
Rosalind K. Allen, Esq. (w/o encl.)

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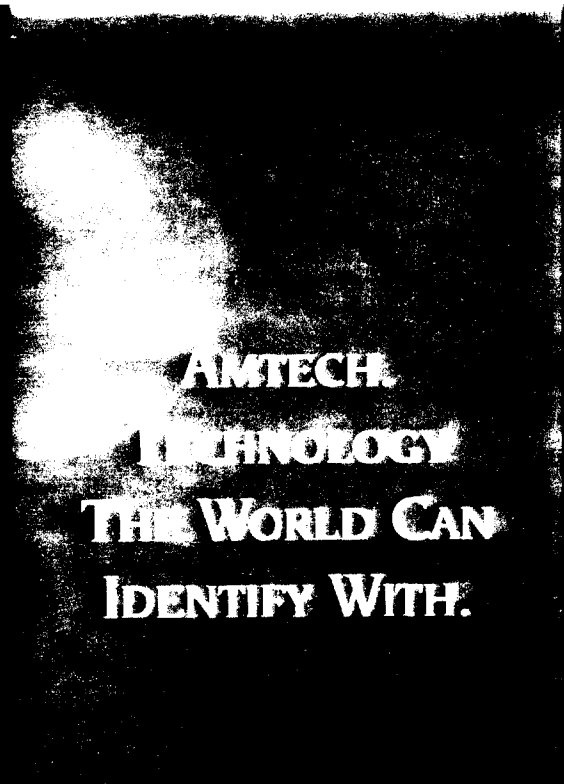
List ABCDE

THE TRANSPORTATION INDUSTRY IS JOINING FORCES. FORTUNATELY, YOU'VE GOT A CONNECTION.

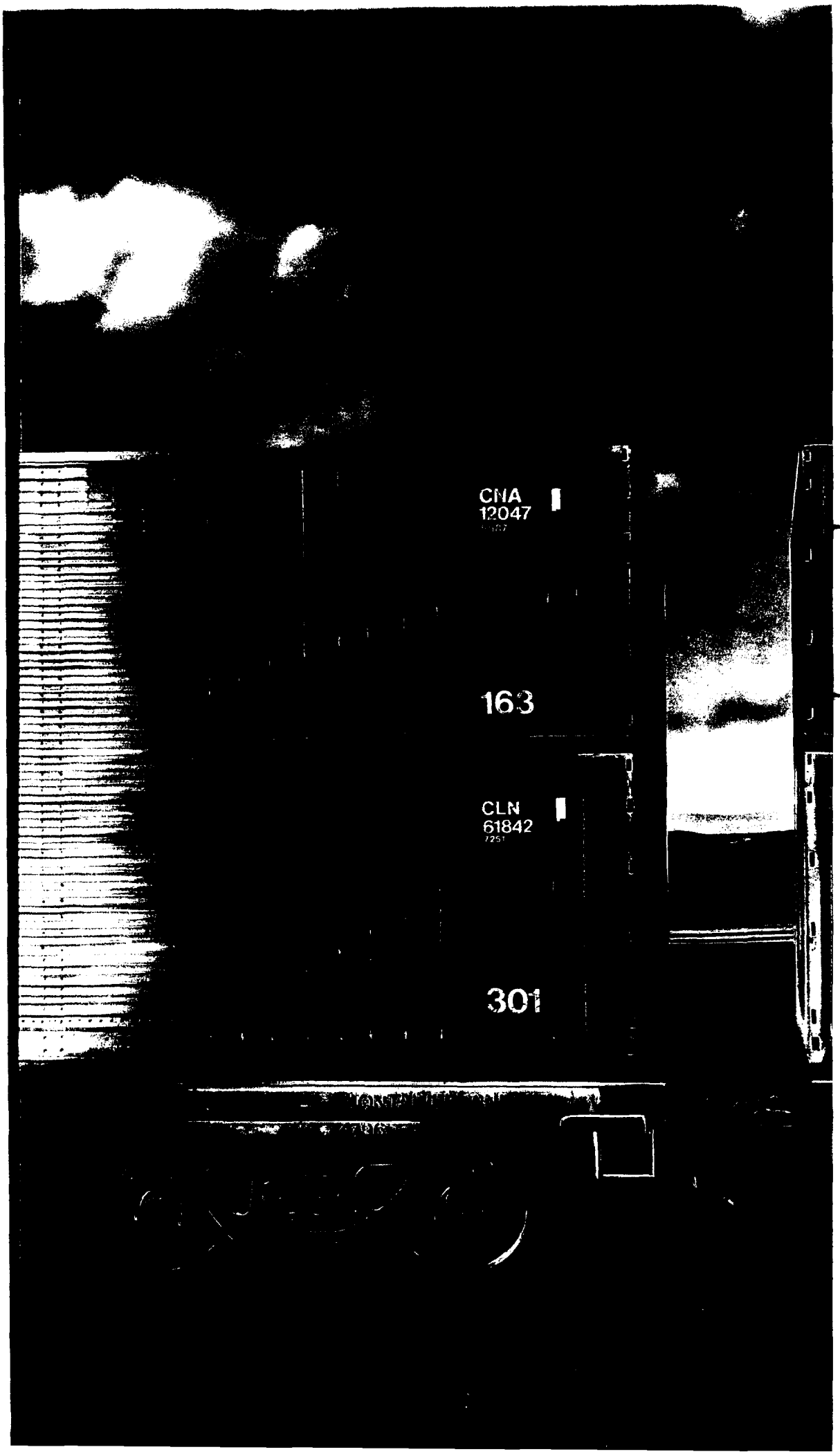
AMTECH®



People have talked about a standardized automated equipment identification (AEI) infrastructure. Now, Amtech is making it happen.

Even as you read this brochure, the infrastructure that allows transportation companies to take advantage of AEI data is under way. Whether to track containers, trailers, or railcars — by truck, ship, or rail — Amtech technology allows companies to collect important information electronically so it can be used and exchanged to strengthen the way business is done. The sooner you become a part of it, the smarter you can compete. We're ready when you are.

ANTECH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[illegible] CHARTING THE FUTURE OF THE [illegible]ATION INDUSTRY. JOIN US.

If you are as eager as we are to improve the way business is done and propel the transportation industry into a new era, join Amtech in making it happen.

Chances are, it's much easier than you might have thought. You can begin by tagging equipment as you perform routine maintenance, or as you purchase new equipment. We can implement a pilot program for you as we have done for many of our customers. As a first step, we can analyze your operations and business needs and show you what we can do to improve your customer service and bring costs down to the bottom line. We can show you how fast your Amtech system will pay for itself and how significant your return on investment can be.

The intermodal infrastructure is going up. Amtech is the standard that's driving it. Be a part of it. Take action. Call us today at 1-800-923-4824, or fax us internationally at 214-733-6699.

AMTECH IS STATE OF THE ART. BY ANY STANDARD.

The intermodal industry is clipping forward at a swift pace. Maritime companies are facing changing trade practices and flows. Trucking companies are moving from using trailers to chassis and taking advantage of railroad efficiencies. Long-haul carriers are moving toward shorter hauls. Terminal operators are looking at new ways to improve terminal throughput. Logistics managers are dictating shipping and transportation schedules from the customer side. And then there are independent trucking companies that only want to change their own operations in ways that make them run better.

Guiding them all, one technology is at the helm.

Amtech technology meets the standards set by the International Standards Organization (ISO), the Association of American Railroads, the American Trucking Associations (ATA), and the Union Internationale des Chemins de fer (UIC). Because of its universal application, Amtech technology serves as the basis for developing compatible movement of data for maritime, rail and trucking AEI.

In addition, Amtech's manufacturing process is ISO-9001 certified, thereby ensuring our customers the highest quality products in the industry. Because Amtech technology is designed with the flexibility and high quality to meet these standards, you can feel sure your investment is one that will take you well down the road, wherever the road goes.

AMTECH PUTS OPERATIONS EFFICIENCY ON A FASTER TRACK.

Keep moving. Keep track. That's the goal. With Amtech, railroads can maximize efficiency, truckers can move through intermodal terminals faster, shipments and assets are tracked with economic accuracy. That's [illegible]. And why more [illegible] are choosing Amtech systems [illegible].

[illegible] are right in the transportation industry. Amtech [illegible]. Here's how [illegible] Amtech [illegible] your container [illegible] automatically and in real time. [illegible] your equipment inventory continually [illegible]. When you want to know specific locomotive [illegible] trailer [illegible] a few keys and you know [illegible] and when it left the terminal [illegible] and more [illegible] adopt the rolling inventory [illegible] automatic [illegible] inventory becomes that much more [illegible].

Second, when you know where your equipment is, you can manage it better [illegible] investment before your outlay capital [illegible] equipment [illegible] such factors as peak [illegible] allowing you [illegible] equipments and streamline delivery.

Third, Amtech [illegible] information [illegible] your [illegible] look at the bottom line. When you [illegible] your equipment identification [illegible] speed [illegible] and turnaround times by [illegible]. No longer [illegible] continually watchdog the process [illegible] monthly and quarterly equipment [illegible]. Now you have the tools [illegible] the job. Amtech collects [illegible] equipment [illegible] analyzes and improves [illegible]. You take [illegible].

AMTECH IS AS SERIOUS ABOUT CUSTOMER SERVICE AS YOU ARE.

In California, a trucking company exceeds its customers' expectations for on-time delivery. In New York, a terminal operator cuts dwell time and sends monthly documentation of that dwell time to its trucking customers. Across the U.S., one of the largest trucking companies speeds easily through toll booths without stopping. A maritime company with facilities from the Pacific Rim to the U.S. to the Middle East will accurately identify and track more than 100,000 containers, chassis, trucks and generator sets. In Europe, the logistics arm of a member nation's post office is improving deliveries. The U.S. Army used Amtech to track and expedite materials to troops in Desert Storm.

The results are in. Amtech systems are in place, at work, and raising customer service to the highest levels in the industry. If customer service is important to your business, Amtech can help you make it better.

An opportunity exists for your company to strengthen customer relations and put the lock on customer loyalty. With Amtech, you can give your customers precise dispatch and delivery information in order to meet their critical just-in-time schedules. You can track the location of your equipment, predict arrival times and ensure your shipments match up with the correct truck, container, train or ship. You can even monitor critical parameters, such as refrigerated cargo temperature, hazardous waste safety and structural integrity.

As a result, reporting to customers on their shipping status is fast and accurate. Whether you're an intermodal company or an independent trucking company, Amtech allows you to maximize equipment utilization and serve your customers better than ever before.

Call it your competitive edge. When you're ready to sharpen it, call Amtech. Our business is boosting yours. We're already doing it for businesses the world over. Let us show you how we can do it for you.

The Road To Success [illegible]

Put simply, Amtech manufactures the most highly advanced, automated, radio frequency data communications systems in the transportation industry.

For you and our thousands of users around the world, Amtech systems automatically identify and track vehicles and equipment. The concept is simple. The implications are great for business.

As our customers will testify, Amtech systems can significantly increase your operating efficiencies and greatly improve customer service. Your data accuracy and reliability peak to record highs. Your equipment inventory is monitored and controlled automatically. Your deliveries clock in faster than ever before. Losing equipment is no longer a concern. And because you know the exact departure and arrival times and locations of your assets, you can maximize your equipment utilization, boost profits, and satisfy customers with unparalleled service. Most important, you can justify every dollar scrutinized under the operations efficiency microscope, gain control and take charge of your destiny.

More [illegible] Are [illegible]

To date, Amtech has shipped more than two million tags to rail, maritime and trucking businesses around the world. And the momentum is building. We're producing hundreds of thousands of tags and shipping them to customers in Australia, Japan, Singapore, Hong Kong, the Middle East, Europe, South America, Mexico, the United States and Canada. We have thousands of readers installed and more than 30 distributors around the world to deliver the local support our worldwide customers demand. Every railcar and locomotive in North America is now being tagged with Amtech technology, and a continent-wide reader infrastructure is at work reading the tags.

The fact is, Amtech is the technology standard the world has been waiting for. Together, we can claim the road to success.

It's already the technology of choice for businesses around the globe. They include:

American President Companies
Atchison, Topeka & Santa Fe Railway
British Petroleum
British Rail
Burlington Northern Railroad
Canadian National Railway
Canadian Pacific Rail System
Chicago Northwestern Transportation Company
Combicom
Consolidated Railroad
Consolidated Edison
Contract Freighters, Inc.
CSX Transportation
Dachser Spedition
Matson Navigation Company
MTRC (Mass Transit Rail Corporation) -- Hong Kong
Norfolk Southern Corporation
Port of Singapore Authority
Evergreen Marine Corporation (Taiwan) Ltd
OOCL -- Chinese Maritime Transport, Ltd., Taiwan
Queensland Railway -- Australia
Sea-Land Service, Inc
SNCF (French National Railway)
Southern Pacific Transportation Company
Union Pacific Railroad Company
The Vons Companies
Werner Enterprises, Inc.

For our transportation customers, as well as for our electronic toll and traffic management (ETTM) customers worldwide, Amtech continually works to provide visionary solutions. At Amtech, we are committed to our customers' success. Today and for years to come.

AMTECH®

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INTRODUCING
AN IVHS
TECHNOLOGY
THAT TRAVELS
THROUGH

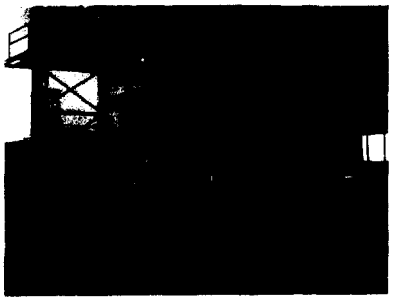
TIME.

Intellitag products

The wait is over. A new generation of Electronic Toll and Traffic Management (ETTM) products is here. And it's here to solve your transportation needs for the long-term.

Amtech and Motorola have joined forces to bring you a new vehicle-roadside communications (VRC) technology that takes toll collection and traffic management quantum leaps ahead, while providing flexible performance for growth down the road.

Introducing IntelliTag™ 2000. It's a state-of-the-art VRC system designed for automated communication with vehicles. It's your communication link to the future.



NEXT GENERATION TOLL COLLECTION.
Open highway toll collection without toll booths. Thousands more vehicles every hour. Half the cost. If this sounds like some futuristic scenario, the future is a lot closer than you think.

FORWARD-THINKING TRAFFIC MANAGEMENT.
Rush hour that moves at 55 mph.
Drive times you can count on.
Travel plans you can keep.
We think ahead so you can too.
IntelliTag has the future built in.
We thought you'd appreciate that.

INTELLITAG 2000. FLEXIBLE DESIGN FOR VISIONARY APPLICATIONS.

INTELLITAG MERGES THE BEST OF BOTH. Now Amtech and Motorola merge the best of RF identification and mobile data communication technology into a single system capable of both lane specific and wide area communications. In essence, the IntelliTag 2000 line of RF products is the fundamental building block for all VRC applications to come. Its open, flexible architecture adapts to a variety of interfaces and protocols, making migration to future technologies and applications easy. It reads and writes mobile data at lightning speeds with superior accuracy and unmatched reliability. IntelliTag 2000 is the state-of-the-art technology you can adopt today and build on tomorrow.

INTELLITAG SPEAKS THE UNIVERSAL LANGUAGE. Based on the non-proprietary ETC standard adopted by the State of California, IntelliTag 2000 is itself setting the standard in the emerging IVHS industry. In fact, its multi-mode operation is compatible with established ETTM operations and multimodal transportation standards including ATA, AAR, ISO and ANSI. In an industry that is breaking new ground, it's nice to know there's a technology that can handle the curves down the road — wherever that road takes you.

YOUR COMMUNICATION LINK TO THE FUTURE.

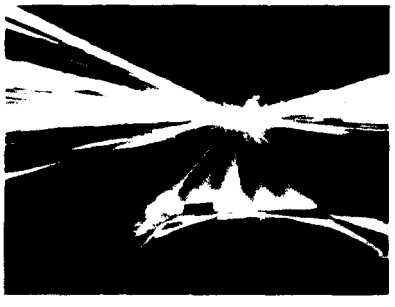
What's more, IntelliTag 2000 *accommodates future enhancements.* Standard, programmable interfaces and modular packaging facilitate integration and upgrades. As a result, equipment manufacturers can build compatible solutions. Systems integrators can tailor creative applications. Transportation customers have the option to choose from a variety of competitive products and services that will move people forward like never before.

THE TECHNOLOGY OF THE FUTURE HAS A PROVEN PAST. Before you get too carried away by such cutting-edge features as our high-speed data rates and flexible memory partitioning, remember our traditional side. After all, Amtech and Motorola products also come with a proud heritage that strengthens our commitment to your long-term success.

Amtech introduced the breakthrough technology that made toll tags a reality. This year alone, hundreds of Amtech systems around the world will conduct more than 150 million revenue transactions. Motorola is one of the world's leading providers of high-quality wireless communications, semiconductors and electronic equipment and is a winner of the first Malcolm Baldridge National Quality Award.

Intellitag Products is a joint partnership that draws from the vast resources and strength Amtech and Motorola offer. For our customers, it is a partnership *designed to serve your needs, meet new challenges and improve transportation* beyond your highest expectations.

YOU ARE IN THE DRIVER'S SEAT NOW. The IVHS initiative is quickly becoming a reality. You are a critical part of its future. The time is now to chart the course. Call Intellitag Products at **800-359-0878** today for more information about this exciting new technology and what it can do for your customers.



INTELLIGENT LIFE AHEAD.
Smart highways. Smart vehicles. IntelliTag is the information link. As drivers move into a new speed zone, the new speed is displayed on their on-board computer screen. Best-case directions are available at their fingertips. Frozen bridges can be avoided. Real-time travel advisories can be heeded. With IntelliTag, it's all within reach.

TOTAL VEHICLE CONTROL.
Punch in your destination. Put your vehicle on auto-pilot. And enjoy the ride. Convenience and travel safety reach new heights. The intelligent highway takes on a new dimension. Maybe time travel is possible after all.

THE INTELLITAG 2000 SYSTEM IS COMPATIBLE FOR USE WITH THE FOLLOWING MULTIMODAL TRANSPORTATION STANDARDS:

ATA — American Trucking Associations
AAR — Association of American Railroads
ISO — International Standards Organization
ANSI — American National Standards Institute

INDUSTRY ACHRONYMS DEFINED:

ETTM — Electronic Toll and Traffic Management
ETC — Electronic Toll Collection
IVHS — Intelligent Vehicle Highway System
VRC — Vehicle-Roadside Communications

Intellitag products

A MOTOROLA/AMTECH technology partnership

8201 E. McDowell Road
Scottsdale, AZ 85252
(602)441-7116
800-359-0878

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2000-0001 3/94 5M

The *PIKEPASS* connection

Oklahoma Motorists Avoid Tollbooths

An electronic toll-collection system saves motorists' time and money while reducing congestion, improving safety and saving the state direct operating costs of $160,000 per toll-booth each year!

No one is ever ready for a tollbooth. You're sailing down the highway, the sun is shining, music is playing on the radio, and life is good. Then, up ahead, you see a swarm of brake lights spread across all lanes of traffic. Before long, you're in the thick of it — cutting through traffic looking for the shortest line, rolling down the window, grabbing for your wallet and downshifting all at the same time. You're sitting on your wallet so you unbuckle your seat belt, twist around while keeping an eye on the road. You finally pull your wallet free as your pocket turns inside-out and your credit cards drop between the seat and the console.

As you roll down the window, a blast of air blows your gas receipts off the dash out onto the highway. All you've got is a $20 bill, so you stretch out and hand it over. Pulling the change back, you hit your elbow, drop some coins and start to get out. Someone behind you starts honking so you accelerate away from the booth as six lanes of traffic merge down to two. Waiting in line is even worse if you're a trucker on a tight schedule — time is definitely money.

A BETTER WAY

More than 122,000 Oklahoma motorists drive past toll booths without stopping — and in some cases, without

Oklahoma's automated lanes speed motorists past toll booths as computers communicate with an electronic vehicle tag, check the motorist's bill and debit the account.

even slowing down. In most states, such behavior would be followed almost immediately by flashing red lights in the rear-view mirror. Surprisingly, the state of Oklahoma is encouraging motorists to avoid toll booths. For, in spite of appearances, these are no motorized turnstile-jumpers. These motorists pay their tolls automatically as they pass by.

Oklahoma's PIKEPASS automated toll-collection system speeds motorists on their way, cuts accidents at toll plazas, reduces pollution, and allows a reduction in toll charges. Along with these benefits to motorists, it has a king-sized benefit to the state — each automated toll booth saves the state $160,000 in operating costs per year. While the Oklahoma Turnpike Authority's (OTA's) motto is, "There are no free roads" — PIKEPASS makes paying for them almost pleasant.

To avoid tollbooth trauma, Oklahoma motorists deposit $40 with OTA — in cash, credit card or automatic bank draft. In return, OTA gives the driver a transceiver about the size of an audio cassette to stick on the inside of the windshield, and opens an account.

Inside the radio transceiver is a computer chip and a unique code number. As the motorist enters a turnpike, an antenna mounted over the traffic lane transmits radio waves to the transceiver mounted in the vehicle. The transceiver reflects its code number back to a reader on the antenna, where it is captured and subsequently read by the central computer system.

As the motorist exits the turnpike, another antenna captures the transceiver code, totals up the bill, and debits the proper amount. The transceiver remains the property of OTA. It is returned when the account is cancelled, or paid for if lost. The only fees paid by the motorist are the actual tolls at the reduced rate.

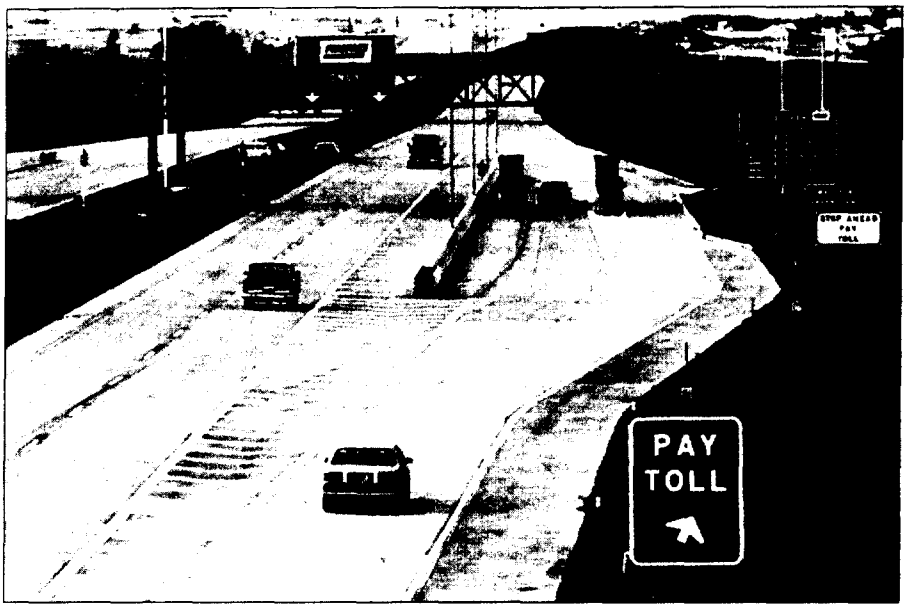
In addition to on- and off-ramps, there are numerous toll booths on the turnpikes themselves where stops are required for non-PIKEPASS drivers. On four of the turnpikes, the PIKEPASS motorists can bypass toll booths at highway speeds on totally separate lanes. On six others, the motorist must slow to about 30 m.p.h. in a designated lane within the main toll plaza.

DISCOUNTS ENCOURAGE USE

According to Mary Kay Audd, OTA Administrative Assistant, Oklahoma users get an average 30 percent discount on tolls for using the system. Ms. Audd said the discount encourages drivers to pay electronically and makes good business sense for the state. Operating a manned toll booth costs OTA $176,000 annually. A PIKEPASS lane, on the other hand, costs only $15,600 annually.

The combination of convenience and lower tolls appears to be working. OTA predicted that about 15,000 users would take advantage of the service in its first year of operation. Instead, there were more than 100,000. Almost 25,000 passes were issued even before the system's inauguration on Jan 1, 1991.

Operating a manned toll booth costs OTA $176,000 annually. A PIKEPASS booth costs only $15,600 annually.



Cars with electronic tags continue down the highway, while others pull off to pay the toll.

Now, 17 months later, there are 122,000 tags in use. On some portions of turnpike, as many as 60 percent of the motorists have the PIKEPASS devices in their vehicles, Ms. Audd said. Safety has improved as a result. During its first year of operation, no traffic accidents were recorded in PIKEPASS lanes, while 71 accidents occurred in the cash lanes.

OTA is the only Oklahoma state agency that makes a profit. It has built 500 miles of four-lane highway using no tax money, and has earned a national reputation for innovation. As this goes to press, OTA is one of 25 finalists, out of 1,600 entries, in the Innovations in State and Local Government Awards Program, sponsored by the Ford Foundation and Harvard University's John F. Kennedy School of Government.

■

For more information on the PIKEPASS program, contact Mary Kay Audd, at the Oklahoma Turnpike Authority, P.O. Box 11357, Oklahoma City, OK 73136-0357.

TECHNICALS

Oklahoma's PIKEPASS system is designed, manufactured, installed and maintained by the Amtech Corp. headquartered in Dallas. According to Amtech's Carla Morgan, the company has installed systems on the Dallas North Tollway and on bridges in New Orleans. Federal tollways in Mexico are also using the Amtech system, she said, and they have just announced systems to be built on the Sam Houston and Hardy Turnpikes in Houston.

In Oklahoma, entry and exit ramps have antennas over each lane. The antennas contain both an RF source — which transmits at under 700 milliwatts — and a reader to decode the signal reflected from the windshield-mounted PIKEPASS tag. Once read, the code is relayed to a computer management system for account processing.

Oklahoma's toll equipment is from Digital Equipment Corp. The reader runs on a MicroVAX 3100 and the host computer is a VAX 4000. Software is a proprietary Amtech toll-collection program.

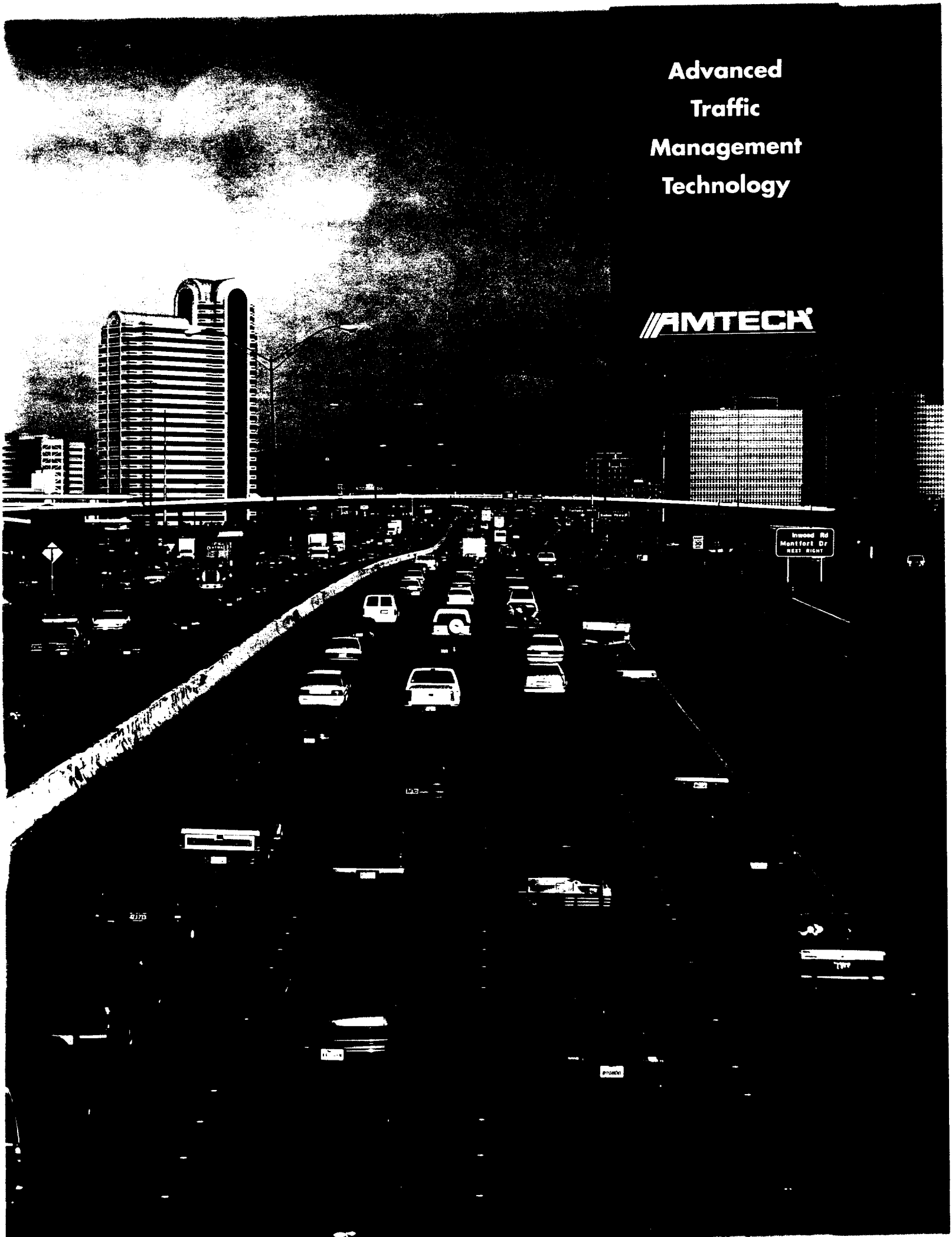
The system does not operate in real time, except when tags are issued, or reported lost or stolen. Then, said Ms. Morgan, the data is transmitted immediately to reading sites. Otherwise, data is downloaded in "end-of-day processing" over leased lines or call-up modems.

OTA has added security and enforcement videocameras to protect tollbooth attendants and capture the license numbers of violators. The system also uses inductive coil loops and other devices to measure vehicle speed, and type.

Cost of a system, said Ms. Morgan, runs from $15,000 to $20,000 per lane, but much depends on configuration and options. Oklahoma, for example, has integrated coin toll machines into the accounting system. Payback on most systems is less than two years, she said.

Advanced Traffic Management Technology

AMTECH



nhanced Traffic Management With Amtech RFID Technology

More roads, more vehicles, more people to move. Traffic management has never been more critical than it is today. Now Amtech brings new tools and new capabilities to augment advanced traffic management systems (ATMS) to make traffic management easier, more economical and more reliable than ever before.

Continuous Data Stream, Automatic and Precise

With Amtech automatic vehicle identification (AVI) technologies you can collect traffic flow information continuously from electronic radio-frequency identification (RFID) tags onboard motorist's vehicles. Tags serve as probes automatically reporting their position and identity to readers installed at selected intervals along the roadway. No motorist interaction is required as in cellular phone call in data collection and other manual methods. Computers do all the work.

Reliable Origin-Destination Data

Amtech AVI can give you origin-destination information to any level of detail you require—it's simply a matter of placing readers at appropriate intervals to track the location and travel times of tagged probe vehicles. No more labor intensive, lights-on studies acquiring limited or questionable data. Computers collect and process the data and give you the traffic profiles you need to plan effectively.

Accurate Segment Travel Times

Unlike point-speed data collection methods using inductive loops in the pavement to report vehicle travel times over a few feet of highway, Amtech AVI technology tells you exactly which vehicle has been read at what time at each checkpoint. Your traffic management computers can then calculate accurate average travel times between checkpoints spaced yards or miles apart.

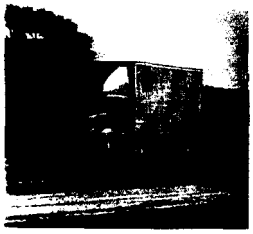
Probe Population is Already on the Road

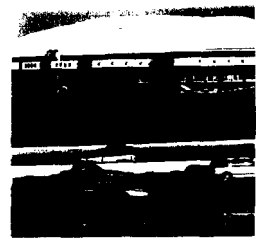
Over 500,000 Amtech tags are already in use in the transportation system across the country for electronic toll collection, access control,

parking, and cargo and equipment tracking. Any of these tags serve as probes and can be read by your Amtech AVI equipment to provide additional traffic data. And the cost of adding Amtech probes is minimal when compared with other options available.

Enhance Management of Incidents and Congestion

AVI probes can tell you where incidents and events impact traffic flow most, and can show you how the traffic profile changes over time. This better enables you to adapt signal controls, display





or broadcast messages to drivers and reroute traffic on a real-time basis. It also provides the information you need to plan for optimal throughput on all highways and arterials monitored. And accurate real-time traffic movement data is invaluable for routing emergency vehicles to incident locations quickly and safely.

AVI Installs Quickly Without Disruption to Traffic Flow

AVI tags attach in seconds to vehicle windshield or bumper. Readers are mounted out of the way on sign bridges, overpasses and at the roadside, with little or no lane closure and no pavement cuts required for installation or service of equipment. Communications between readers and traffic management computers can be established via either physical cabling or spread-spectrum radio. Amtech AVI traffic monitoring systems can be installed in a matter of a few months per segment of highway, unlike traditional loop-sensor systems that require multiple years to install. Additionally, loop systems involve extensive lane closures for both installation and maintenance and are vulnerable to damage during road resurfacing.

Today's IVHS Technology for Long-Range Planning

Data collected from AVI probes can be shared across agencies to analyze the effectiveness of traffic management strategies and develop new programs. • Use AVI to monitor and enforce HOV authorization processes. • Reduce vehicle emissions and improve air quality by decreasing both travel times and the overall number of vehicles on the road. • Use AVI-supplied accurate travel-time comparisons for HOV and other alternate modes to demonstrate the benefits of mass transit modes and encourage participation. • Add CVO and special-event management applications to an existing system.

Proven in IVHS (the FHWA Smart Commuter Program in Houston) priority corridor operations, Amtech's AVI systems are at the forefront of Intelligent Vehicle Highway Systems technology, providing advanced solutions to meet today's traffic management needs. And Amtech will continue to build partnerships and products that move the industry forward.

Amtech Corporation

PR Docket 93-61

Amtech AVM Technology Serves a Variety of Transportation Applications

- Amtech pioneered the use of tag technology for automated toll collection and traffic management.
- More than 700,000 Amtech tags now in use on road vehicles and in intermodal applications; additional tags being added monthly.
- North America's railroads use Amtech tags to track more than one million rail cars.
- Airports use Amtech tags to manage ground vehicles and reduce congestion near terminals.
- Intermodal shippers use Amtech tags to expedite the tracking and movement of cargo from ship to rail to truck.
- The trucking industry uses Amtech tags to automate vehicle tracking and recordkeeping.

New Advanced Local-Area Technologies Require More Than 12 MHz

- The new generation of wideband tags meets an open architecture developed by the State of California with the assistance of the Lawrence Livermore National Laboratories.
  - These tags utilize a 6 MHz-wide channel to serve applicaitons requiring high data rates.
  - At least two 6 MHz channels are required to serve multiple lane highways; three separate channels would be preferable.
  - More than 12 MHz of spectrum should be available for local-area AVM systems in order to implement the new generation of tags while at the same time providing some flexibility to accommodate other technologies.
    - System designers need flexibility to shift the center frequency so as to avoid interference.
    - The availability of more than 12 MHz will provide a means for operating portable tag readers that are centered between two channels but may overlap with portions of those two channels.