Advanced Public Transportation Systems Benefits

March, 1996

ITI TOOLBOX

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OFFICE OF RESEARCH, DEMONSTRATION AND INNOVATION

ADVANCED PUBLIC TRANSPORTATION SYSTEMS DIVISION

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TRANSIT MANAGEMENT SYSTEMS

Operational Effciency

+ Hamilton (Ontario, Canada) Street Railway Company's Automatic Vehicle Location (AVL) system increased schedule adherence from 82% to 89%.

+ Kansas City Area Transit Authority's (KCATA) AVL system increased on-time performance from 8O% to 90%.

+ Maryland Mass Transit Administration's (Maryland MTA) AVL system increased on-time performance on test buses by 23%. Maryland MTA plans of expanding the system to the entire fleet.

+ Milwaukee County Transportation Division's (MCTD) AVL system, not yet fully operational, increased on-time performance from 90% to 94%.

+ Winston-Salem (North Carolina) Transit Authority's AVL/Computer Aided Dispatch (CAD) system increased paratransit ridership by 17.5% and the client base by 100% and decreased paratransit passenger waiting time by 50%.

+ AVL systems in County of Lackawanna Transit System (Scranton, Pennsylvania), Broward County (Florida) Division of Mass Transit, Beaver County (Rochester, Pennsylvania) Transit Authority, Dallas Area Rapid Transit, and Tidewater Transportation District Commission (Norfolk, Virginia) have significantly improved schedule adherence.

Cost Savings

◆ KCATA estimated that the authority can save $400,000 per year in maintenance and operator cost savings by using AVL system generated data to reduce scheduled running times in conjunction with a systemwide service reduction.

◆ KCATA achieved significant supervisor labor costs savings because the AVL system made it more acceptable to permit short term reductions in the number of field supervisors due to absences or temporary reassignment.

◆ London (Ontario, Canada) Transit Authority saved between $40,000 to $50,000 on each schedule adherence survey by using data generated from the AVL system.

◆ MCTD's AVL system allowed the authority to reassign some street supervisors to other tasks.

◆ Winston-Salem Transit Authority's AVL/CAD system decreased operating expense by 8.5% per vehicle mile and **2.4%** per passenger trip

◆ A large transit authority estimated that the authority can save $1.5 million per year by using schedule adherence data generated from the AVL system.

Compliant Resolution

+ Denver Regional Transportation District's (RTD) AVL/CAD system login feature was used to verify a bus operator's claim that she was not initially paid for a day that she worked.

+ MCTD AVL/CAD system's playback feature was used to verify a bus operator's claim that he did not leave a bus stop toaearly.

- AVL systems in Beaver County Transit Authority, Tidewater Transportation District, and King County (Seattle) Metro's have reduced the number of customer complaints and permitted easier resolutions to complaints.

Safety

- Denver RTD' s AVL/CAD system was used to identify the bus that a robber used as his getaway vehicle, In addition, the bus control head's message display was used to confirm the suspect's presence on the bus.

- Denver RTD's AVL/CAD system was used to notify emergency personnel that a bus passenger suffered a seizure. By being able to give emergency personnel the exact location of the bus, an ambulance arrived at the scene in eight minutes.

- KCATA's AVL system reduced average response time to bus operator assistance calls from eleven minutes to three minutes.

- In other transit authorities with AVL systems. bus operators have also used the system to notify emergency personnel about accidents, crimes. and other situations that warrant a quick response. In addition, bus operators felt more secure due to the AVL system's silent alarm, Iisten-in, and rapid response features.

ELECTRONIC FARE PAYMENT SYSTEMS

Cost Savings

+ Faretrans (Ventura County, California) estimated that their Smart Card system can save $9.5 million per year in reduced fare-evasion, $5 million per year in reduced data collection costs, and $990.000 annually by eliminating transfer slips.

+ Metropolitan Atlanta Rapid Transit Authority's (MARTA) estimated that their Visa Smart Card system, a stored value card, can significantly reduce the authority's cash handling costs.

- New Jersey Transit Corporation (NJ Transit) estimated that their automated fare collection system can save $2.7 million in fare media handling costs.

+ New York City Transit (NYCT) estimated that their Metro Card system, a magnetic stripe card, can save $70 million per year in fare evasion.

Revenue Increases

+ MARTA estimated that their Visa Smart Card system can significantly increase revenues because the authority receives interest on the revenue "float".

+ NJ Transit's automated fare collection systems increased revenues by 12%.

+ NYCT estimated that their Metro Card system can increase revenues by $34 million from merchant fees and revenue "float", $140 million from unused value on the cards, and $49 million from increased ridership.

TRAVELER INFORMATION SYSTEMS

Automated Information Systems

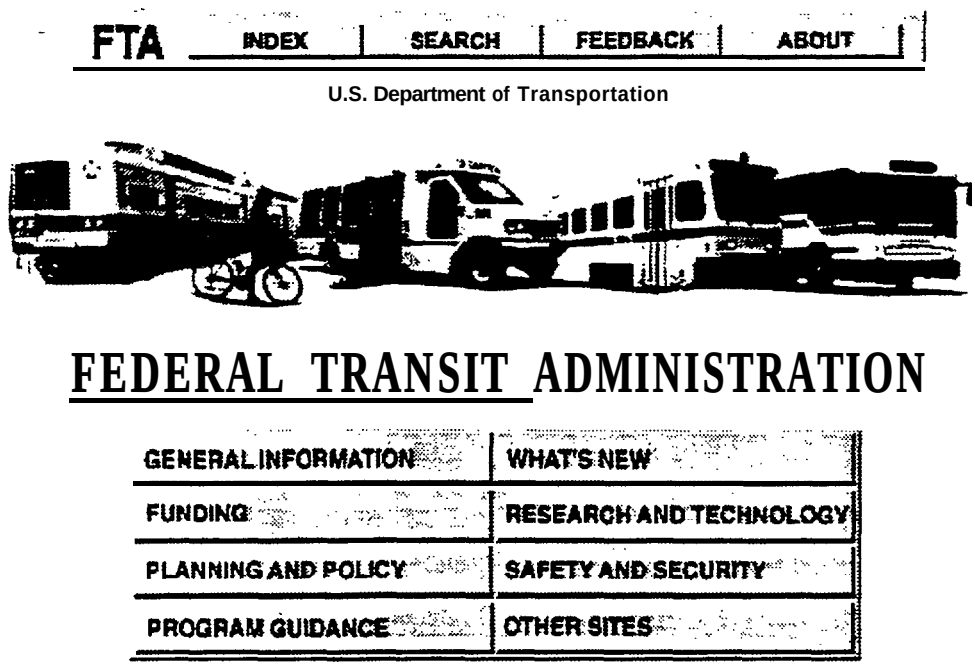
- Caltrans reported that over 85% of Smart Traveler kiosk users in Los Angeles said that they will continue using the kiosks to obtain travel information,

- NJ Transit's automated voice response telephone information system reduced caller waiting time from 85 seconds to 27 seconds and reduced the caller hang-up rate from 10% to 3%. Due to higher system efficiency. monthly calls have also increased by 40,000 from the previous year.

- Rochester-Genesee (New York) Regional Transportation Authority's automated transit information system answers 70% of information request calls and allowed the authority to reassign four part-time information agents to other tasks. Due to higher system effxiency, calls have also increased by 80%

- San Diego County's interactive voice response system increased information agent productivity by **21%.**

FTA information is available on the Internet World Wide **Web**



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Advanced Public Transportation Systems Documents

Advanced Public Transnortation Systems: A Bibliography with Abstracts, 1985-1991
Advanced Public Transportation Systems Benefits
Advanced Public Transportation Systems: Evaluation Guidelines
Advanced Public Transportation Systems: Project Summaries
Advanced Public Transportation Svstems: The State, of the Art, Update '96
Brief #1: What are Advanced Public Transportation Systems?
Brief #2: Advanced Public Transportation Svstems Evaluation Guidelines
Brief #3: Minnesota Guidestar Travlink
Brief #4: California Advanced Public Transportation Systems
Brief #5: Bellevue Smart Traveler
Brief #6: Houston Smart Commuter
Brief #7: Denver Smart Vehicle System
Brief #8: Winston-Salem Mobility Manager
Brief #9: Los Angeles Smart Traveler Kiosks
Brief #10: Smart Fare Payment Systems for Public Transit
Brief #ll: An Intelligent Transportation System for Atlanta for the 1996 Olympics
Advanced Traveler Aid Systems for Public Transportation
Bellevue Smart Traveler and Cellular Telecommunications
California Smart Traveler System
Cost Estimates for Selected California Sman Traveler Operational Tests
German "Smart-Bus" Systems: Potential for Application in Portland, Oregon, Volume 1, Technical Report
German "Smart-Bus" Systems: Potential for Application in Portland, Oregon, Volume 2, Appendices
lntelligent Transportation Systems
intelligent Transportation Systems Dictionary
Mobility Management and Market Oriented Local Transportation
Review and Assessment of En-Route Transit Information Svstems
Review of and Preliminary Guidelines for Integrating Transit into Transnortation Management Centers
Smart Cards for Transit: Multi-Use Remotely interrogated Stored-Data Cards for Fare and Toll Pavment
Smarter Transit Systems Can Lead to Smarter Riders
The Transit Opportunity in Intelligent Vehicle Highway Systems
Transit Geographical Information Systems
White Paper on the National ITS System Architecture: Transit Issues and Recommendations

Related Advanced Public Transportation Systems Documents

Accelerating Intelligent Transportation Systems Deployment: A Report from the United States Department of Transportation
Advanced Traveler information Systems for Rural Areas
An Integrated intelligent Transportation Infrastructure for Your Metropolitan Area
Assessment of Intelligent Transportation Systems Benefits: Early Results
Intelligent Transportation Systems Projects
Operation Timesaver: Building the Intelligent Transportation Infrastructure
Operation Timesaver: Taking Transportation into the 2lst Century
Operation Timesaver: Intelligent Transportation infrastructure Benefits - Expected and Experienced
Operation Timesaver: Secretary Pena's Speech at the 1996 Transportation Research Board Annual Meeting

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