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TCRP Synthesis 26

Bus Transit Fare Collection Practices

A Synthesis of Transit Practice

Transportation Research Board
National Research Council

TRANSIT COOPERATIVE RESEARCH PROGRAM

Synthesis of Transit Practice 26

Bus Transit Fare Collection Practices

RICHARD STERN
Booz • Allen & Hamilton, Inc

Transportation Research Board
National Research Council

Research Sponsored by the Federal Transit Administration in Cooperation with the Transit Development Corporation

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TRANSIT COOPERATIVE RESEARCH PROGRAM

The nation's growth and the need to meet mobility, environmental, and energy objectives place demands on public transit systems. Current systems, some of which are old and in need of upgrading, must expand service area, increase service frequency, and improve efficiency to serve these demands. Research is necessary to solve operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the transit industry. The Transit Cooperative Research Program (TCRP) serves as one of the principal means by which the transit industry can develop innovative near-term solutions to meet demands placed on it.

The need for TCRP was originally identified in *TRB Special Report 213--Research for Public Transit: New Directions*, published in 1987 and based on a study sponsored by the Federal Transit Administration (FTA). A report by the American Public Transit Association (APTA), *Transportation 2000*, also recognized the need for local, problem-solving research. TCRP, modeled after the longstanding and successful National Cooperative Highway Research Program, undertakes research and other technical activities in response to the needs of transit service providers. The scope of vice configuration, equipment, facilities, operations, human resources, maintenance, policy, and administrative practices.

TCRP was established under FTA sponsorship in July 1992. Proposed by the U.S. Department of Transportation, TCRP was authorized as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). On May 13, 1992, a memorandum agreement outlining TCRP operating procedures was executed by the three cooperating organizations: FTA, the National Academy of Sciences, acting through the Transportation Research Board (TRB), and the Transit Development Corporation, Inc. (TDC), a nonprofit educational and research organization established by APTA. TDC is responsible for forming the independent governing board, designated as the TCRP Oversight and Project Selection (TOPS) Committee.

Research problem statements for TCRP are solicited periodically but may be submitted to TRB by anyone at anytime. It is the responsibility of the TOPS Committee to formulate the research program by identifying the highest priority projects. As part of the evaluation, the TOPS Committee defines funding levels and expected products.

Once selected, each project is assigned to an expert panel, appointed by the Transportation Research Board. The panels prepare project statements (requests for proposals), select contractors, and provide technical guidance and counsel throughout the life of the project. The process for developing research problem statements and selecting research agencies has been used by TRB in managing cooperative research programs since 1962. As in other TRB activities, TCRP project panels serve voluntarily without compensation.

Because research cannot have the desired impact if products fail to reach the intended audience, special emphasis is placed on disseminating TCRP results to the intended end-users of the research: transit agencies, service providers, and suppliers. TRB provides a series of research reports, syntheses of transit practice, and other supporting material developed by TCRP research. APTA will arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by urban and rural transit industry practitioners.

The TCRP provides a forum where transit agencies can cooperatively address common operational problems. TCRP results support and complement other ongoing transit research and training programs.

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NOTICE

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The members of the technical advisory panel selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project The opinions and conclusions expressed or implied are those of the research agency that performed the research, and while they have been accepted as appropriate by the technical panel, they are not necessarily those of the Transportation Research Board, the Transit Development Corporation, the National Research Council, or the Federal Transit Administration of the U.S. Department of Transportation.

Each report is reviewed and accepted for publication by the technical panel according to procedures established and monitored by the Transportation Research Board Executive Committee and the Governing Board of the National Research Council.

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PREFACE

A vast storehouse of information exists on many subjects of concern to the transit industry. This information has resulted from research and from the successful application of solutions to problems by individuals or organizations. There is a continuing need to provide a systematic means for compiling this information and making it available to the entire transit community in a usable format. The Transit Cooperative Research Program includes a synthesis series designed to search for and synthesize useful knowledge from all available sources and to prepare documented reports on current practices in subject areas of concern to the transit industry.

This synthesis series reports on various practices, making specific recommendations where appropriate but without the detailed directions usually found in handbooks or design manuals. Nonetheless, these documents can serve similar purposes, for each is a compendium of the best knowledge available on those measures found to be successful in resolving specific problems. The extent to which these reports are useful will be tempered by the user' s knowledge and experience in the particular problem area.

FOREWORD

By Staff
Transportation
Research Board

This synthesis will be of interest to transit agency general managers, bus operations, operations planning and scheduling, finance, and accounting staffs, as well as public relations, marketing, and security staffs. It documents fixed route bus fare collection practices at selected transit agencies. Survey responses about fare policy, fare collection equipment, fare disputes, and fare evasion issues, as well as customer information and the impact of financial assistance are offered.

Administrators, practitioners, and researchers are continually faced with issues or problems on which there is much information, either in the form of reports or in terms of undocumented experience and practice. Unfortunately, this information often is scattered or not readily available in the literature, and, as a consequence, in seeking solutions, full information on what has been learned about an issue or problem is not assembled. Costly research findings may go unused, valuable experience may be overlooked, and full consideration may not be given to the available methods of solving or alleviating the issue or problem. In an effort to correct this situation, the Transit Cooperative Research Program (TCRP) Synthesis Project, carried out by the Transportation Research Board as the research agency, has the objective of reporting on common transit issues and problems and synthesizing available information. The synthesis reports from this endeavor constitute a TCRP publication series in which various forms of relevant information are assembled into single, concise documents pertaining to a specific problem or closely related issues.

This report of the Transportation Research Board presents specific information about operator training and operational procedures, especially in avoiding and dealing with fare disputes. These and enforcement policies and practices are important not only to the bus driver and agency management, but also, to the public--transit's customers.

To develop this synthesis in a comprehensive manner and to ensure inclusion of significant knowledge, available information was assembled from numerous sources, including a number of public transportation agencies. A topic panel of experts in the subject area was established to guide the researchers in organizing and evaluating the collected data, and to review the final synthesis report.

This synthesis is an immediately useful document that records practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As the processes of advancement continue, new knowledge can be expected to be added to that now at hand.

CONTENTS

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Valuable assistance in the preparation of this synthesis was provided by the Topic Panel, consisting of Daniel K. Boyle, Principal, Transportation Management Design, Solana Beach, California Rob Smith, Director of Service Development. Corpus Christi Regional Transportation Authority; Carole A. Ferguson, Transportation System Manager, Federal Transit Administration; Jim Fronk, Revenue Manager, Tri-County Metropolitan Transportation District of Oregon; Tracie M. Johnson, Director of Marketing/Affirmative-Action Officer, Gary Public Transportation Corporation; Patricia L. Jones General Manager, ATE/Fairfax Connector, Peter L. Shaw, Ph.D., Public Transportation Specialist, Transportation Research Board; Kenneth Stanley, Vice President, Operations Planning and Marketing, Oahu Transit Services Inc.; and Jerry Trotter, American Public Transit Association.

This study was managed by Donna L. Vlasak, Senior Program Officer, who worked with the consultants, the topic panel, and the J-7 project committee in the development and review of the report Assistance in topic panel selection and project scope development was provided by Sally D. Liff, Senior Program Officer. Linda S. Mason was responsible for editing and production. Cheryl Keith assisted in meeting logistics and distribution of the questionnaire and draft reports.

Information on current practice was provided by many transit agencies. Their cooperation and assistance were most helpful.

BUS TRANSIT FARE COLLECTION PRACTICES

SUMMARY

The millions of people who ride buses each day are directly affected by transit agencies' fare policies, operating procedures, and fare collection equipment. The fare transaction is often the most direct contact between operating personnel and the customer, and therefore warrants attention by agency management. A fare policy reflects an agency's goals and objectives, and addresses the transit fare structure, fare prices, and tariff rules.

This synthesis of bus transit fare collection policies and practices provides some insight as to how transit agencies enforce policies and procedures, including:

- Customer information practices,
- Operator training,
- Fare policy,
- Fare collection equipment,
- Fare disputes,
- Fare evasion issues, and
- Impact of reduced financial assistance.

The synthesis is based on information obtained by surveying 18 selected U.S. transit agencies. For areas of particular interest, survey information was supplemented by phone calls or on-site visits.

In general, operators are trained on fare collection policy as part of their initial indoctrination. Additional training is done as needed because of fare changes or individual circumstances. The training programs include how to collect the fare, rules governing the various fare media and the prices of each, and any special services. Operators are given the tariff, rule books, and standard operating procedures. Training is usually done by the agency's internal training department or through the agency's operations department. The majority of the respondents seemed satisfied with their respective operator training programs.

All of the survey respondents have an exact fare policy. This means that the operator does not make change--passengers must tender the correct amount when paying.

Three agencies reported having problems with their fare media and the procedures to enforce them. The types of fare media that pose problems for these agencies include prevalidated tickets, punch passes, and transfers.

How the fare policy is structured affects the number of fare disputes. A "simple" fare policy is less likely to provoke fare disputes than zone fares. The majority of the survey respondents indicated that they would like their fare policy to remain simple or to move toward simplification.

Fare disputes are difficult to deal with at any agency. As reported, the number one cause of fare disputes was arguments over transfers. These disputes arise as many passengers must transfer from one bus to another to reach their destination, and usually involve the time or direction of the transfer.

In all cases, the driver is taught to make a "reasonable effort" to collect the fare from the passenger. If a problem arises, either a supervisor or a police officer is called to the scene to try to resolve the problem. Introducing a third party to mediate fare disputes is a resource bus operators can use to shift the focus of a dispute away from themselves.

Reputedly, transit agencies lose a substantial amount of revenue through various types of fare evasion, the most common type believed to be abuse of transfer policies. However, very few respondents gave detailed information regarding fare evasion issues, such as estimated revenue loss. Respondents who estimated revenue loss reportedly made an "educated guess."

CHAPTER ONE

INTRODUCTION

Fare collection policies and practices are instituted so that operators have the appropriate knowledge to collect fares, deal with fare disputes, and give out route or other transit information to passengers. These policies and practices are important not only to the driver, but to the public and agency management as well.

This synthesis was undertaken to document fixed route fare collection policies and practices among various transit agencies. Specific information was gathered concerning operator training and operational procedures, especially in avoiding and dealing with fare disputes. Available literature was also used for additional information and reference.

ORGANIZATION

This introduction provides an overview of the methodology used to collect data, a statistical overview of the survey respondents, and an overview of their bus transit policies and practices. Chapter 2 discusses how the public obtains fare information from the agencies, how fares are collected, operator and other personnel training, fare policy implementation, and how fare disputes are handled. Fare evasion issues are discussed in chapter 3, including the estimated revenue loss among transit agencies, the frequency of these incidents, prosecution of fare evaders, and the local laws that enforce the proper payment of a fare. Chapter 4 is an overview of the planned or anticipated changes with respect to fares and fare collection policy. Chapter 5 presents conclusions drawn from the information gathered for this synthesis.

TABLE 2

SURVEY RESPONDENTS PROFILE

	Survey Group	Percent of U.S. Total
Bus Revenue	$442,100,000	14.2
Passenger Boardings	701,500,000	12.7
Buses Operated	6,723	10.6

SYNTHESIS BACKGROUND

Data used to develop this synthesis of bus transit fare collection policies and practices were collected by a survey of 18 selected transit agencies, supplemented by a search of available literature, telephone interviews with transit agency representatives, and observations of transit systems' methods and procedures. The survey questionnaire is included in Appendix
A. An attempt was made to select transit agencies of different sizes and operating styles. Table 1 lists the responding agencies. Table 2 profiles the survey respondents, as compared to the total U.S. bus industry (1993 statistics).
In addition, there have been some recent publications that inform this synthesis. Most important:

- TCRP Project A-1 *Fare Policies, Structures, and Technologies (I)*
- TCRP Synthesis 19 *Passenger Transfer System Review (2).*

TABLE 1

SURVEY RESPONDENTS

Transit Agency	Location	Bus only (B) or Multi-Modal (M)	Number of Buses (Peak)	Annual Unlinked Trips (000)
Capital District Transportation Authority (CDTA)	Albany, NY	B	186	11,919
Metropolitan Atlanta Rapid Transit Authority (MARTA)	Atlanta, GA	M	561	73,021
Massachusetts Bay Transportation Authority (MBTA)	Boston, MA	M	755	92,212
Chicago Transit Authority (CTA)	Chicago, IL	M	1,731	326,656
PACE Suburban Bus	Chicago, IL	B	391	31,420
Jacksonville Transportation Authority (JTA)	Jacksonville, FL	B	135	9,622
Los Angeles County MTA (LACMTA)	Los Angeles, CA	M	1,912	375,848
Transit Authority of River City (TARC)	Louisville, KY	B	242	21,856
Milwaukee County Transit	Milwaukee, WI	B	460	54,302
Alameda Contra Costa Transit District (AC Transit)	Oakland, CA	B	609	61,053
City of Phoenix Transit System	Phoenix, AZ	B	282	30,100
Tri-Met	Portland, OR	M	462	52,422
Riverside Transit Agency (RTA)	Riverside, CA	B	50	4,449
San Diego Transit Corporation (SDTC)	San Diego, CA	B	250	35,156
Santa Monica Municipal Bus Lines (SMMBL)	Santa Monica, CA	B	106	18,006
Spokane Transit Authority (STA)	Spokane, WA	B	115	7,511
City of Tucson (Sun Tran)	Tucson, AZ	B	157	18,181
Palm Beach County Transit (Palm Tran)	W. Palm Beach, FL	B	57	2,715

CHAPTER TWO

FARE COLLECTION POLICIES AND PRACTICES

COLLECTING THE FARE

Collecting fares from passengers is an important responsibility for the bus driver who must ensure that each passenger deposits the appropriate coins or bills into the farebox. This task is easier when passengers know how much to deposit into the farebox. Transit agencies use various resources to make this information available to customers. These resources are discussed below.

Customer Information Practices

Table 3 shows the variety of methods responding transit agencies use to inform passengers of their fare policies.

TABLE 3

TECHNIQUES USED TO DISTRIBUTE CUSTOMER FARE INFORMATION

Customer Fare Information	Number of Respondents Who Use this Technique
Advertising	6
Special brochures and pamphlets	16
Part of a system map	10
Signs and notices posted on the bus	14
Internet	7

Source: Survey responses

The responding transit agencies mostly provide special brochures and pamphlets to their customers (samples provided in Figure 1). The brochures and pamphlets are usually printed in color with the agencies' logo displayed on the front. The inside of the pamphlet gives the passenger an overview of the system, fare and scheduling information, and rules for riding the system. The brochures and pamphlets can be obtained from a local transit center or from retail outlets. MARTA in Atlanta also provides customer information through magazines and newspapers.

Also, agencies such as MARTA, Santa Monica Municipal Bus, and the Massachusetts Bay Transportation Authority (MBTA) provide customer information on the Intemet (Figure 2).

Operator Training

Training given to drivers typically is done by the agencies themselves, either through an internal training department or through the operations department. Most of the transit agencies surveyed do not use external companies for their training, particularly as regards fare collection systems. The exceptions to this are occasional training by farebox manufacturers when new systems are installed and the use of the "Strategies" course. Strategies is a training program designed to aid drivers in dealing with problem passengers. It is discussed in more detail later in this chapter.

Most agencies buying new fareboxes require the manufacturer to provide basic training on the system to transit agency employees. In most cases, this is a "train the trainer" arrangement, where supervisors and training personnel are given the factory instruction and are responsible for training bus operators. In a few cases factory representatives provide direct training--this is most often done at very small transit agencies. Farebox manufacturers also will provide sample media to be used in the training class, as well as simple handbooks for the bus operators. In the largest transit systems, farebox manufacturers have been tasked with providing videotapes and more comprehensive training programs.

Based on the survey responses, operators are trained on how to collect the fare, fare media usage and the prices of each, and special services, if any. Operators are given a copy of the tariff, rule books, and standard operating procedures, which typically include rules on fare collection. Sample text is provided in Figure 3. Retraining in fare collection procedures will typically be initiated as a result of changes in the fare structure, passenger complaints, a rash of disputes, or similar changes in operating conditions.

The reference in Figure 3 to "reasonable effort" should be noted--similar language appears in drivers' rule books from a variety of sources. While it is subject to interpretation, such language recognizes that drivers are alone in the field and must exercise some judgment on how aggressively to pursue a fare.

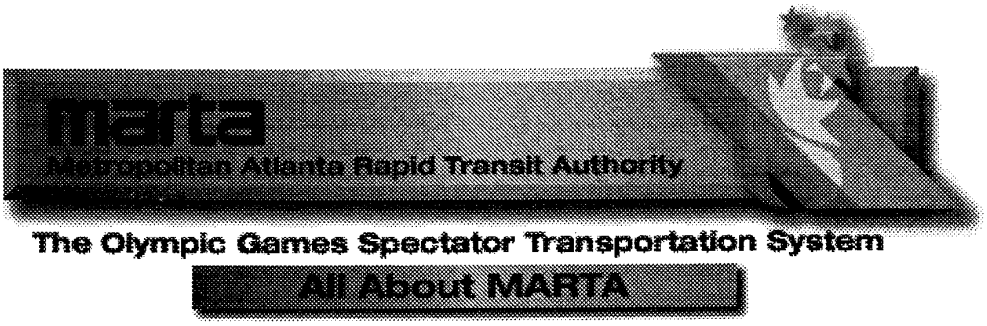
Most transit agencies do some level of on-board "undercover" checking of their bus operators. Such "spotters" are generally provided with a checklist that includes various fare handling infractions. Experience indicates that transit agencies rarely discipline drivers for a single incidence of failure to collect, choosing instead to retrain. However, more severe treatment will be accorded drivers who show a clear and consistent pattern of inattention to fares, favoring friends, or similar violations.

Another segment of training is operator/customer relations training. Los Angeles County MTA has developed lesson plans for operator training. Lesson Plan 20, titled "Methods of Collecting MTA Fare Media," outlines the various rules and operating procedures that the operators must follow. The 3.5 hour class focuses on the different types of fare media used in the system, what types of services are provided (i.e. express, local), and special riding privileges given to people such as police officers and traffic control officers. An excerpt from this lesson plan is shown in Figure 4.

Lesson Plan 23, titled "Operator/Customer Relations," discusses the driver's responsibility for good customer relations and a video is shown regarding stress management. The lesson plan outlines six conflict options for better customer relations. They are:

- Lecture/fighting back: when to fight back (i.e. question of life or death),
- Directed withdrawal: (i.e. when driving down the street and there is too much happening with traffic, next stop, etc. to disagree with a customer),

FIGURE 1 Sample fare brochure from LACMTA.



Bus and Rail Fares
Parking
Transfers
Discounted Fares
Transcards
Bulk Tokens
Where and When to Buy Your Discounted Passes and Rolls of Tokens
Extra MARTA Savings
The MARTA Partnership Lets Your Boss Pay Your Way to Work!
Want to Make Your Out-of-Town Guests Feel Welcome In Atlanta?
Going Sight-Seeing on the Weekend?
Special Fares and Services for the Elderly and Disabled

Bus and Rail Fares

Exact Change Please! Single ride cash fare: $1.50
Service outside Fulton and DeKalb Counties: $2.25
(Children 3 and younger ride free with a paying passenger).
Discounted Fares
Roll of 10 tokens: $15
Roll of 20 tokens: $25
Unlimited Ride Weekly TransCard: $12
Unlimited Ride Monthly TransCard: $45
Elderly/Disabled Half-Fare: 75¢ (with MARTA-issued ID)
Half-Fare Outside Fulton and DeKalb Counties: $1.10

All discounted fare media is available at MARTA RideStores.

Bus riders can pay the fare with cash, tokens, or passes. Please remember all cash fares must be in exact change. Bus drivers cannot make change. The bus fare box can accept one dollar bills and all coins, except silver and Susan B. Anthony dollars. Rail system riders must pay with coins (no pennies), tokens or passes. Individual tokens are for sale at token machines located directly outside the faregates at all rail stations.

Machines sell tokens at the following rate:
one token for $1.50
three tokens for $5 (and receive 50¢ back)
6 tokens for $10 (and receive $1 in quarters back)
13 tokens for $20 (and receive 50¢ back)

Fares are subject to change.

Go to this page's index

FIGURE 2 Page 1 of MARTA's Internet homepage.

SECTION III--FARE COLLECTION

31. FARE COLLECTION

Proper fare collection is a very important part of the operator's duty. Fares provide a major share of the cost of operating a transit system. Operators must watch the payment of fares closely. Shortfaring is a practice that should be scrutinized to the utmost. The electronic fareboxes are equipped with a readout window that displays the amount of money deposited in the farebox by each passenger. The readout window is cleared once the proper fare has been automatically or manually dumped into the farebox vault.

TARC has a specific fare structure and a proper fare should be collected from each passenger. If an operator encounters any problem over collection of a fare and a reasonable effort has been made to collect, the operator is instructed to contact radio for assistance. Failure of the operator to exert "reasonable effort" to collect the proper fare is a serious offense and could result in disciplinary action.

A "reasonable effort" would encompass the following:

1. Strict attention should be paid to fares going into the farebox, with a thorough observation of fares as they appear in the inspection window and farebox digital readout.

2. When an improper fare is detected, the passenger should be told. The amount shown on the digital readout should be pointed out.

3. You should emphasize the fact that all passengers must pay a proper fare, and then tell them what the proper fare is for that period of the day.

Numbers 1, 2, and 3 above define "reasonable effort." Additional pressure, to the point of physical contact or excessive argument, would be going beyond a "reasonable effort." IN NO EVENT SHOULD AN OPERATOR JEOPARDIZE HIS SAFETY OR THE SAFETY OF ANY PASSENGER IN ATTEMPTING TO COLLECT A PROPER FARE

FIGURE 3 Sample of fare collection rules provided to bus operators by TARC, Louisville, Kentucky.

- Compromise: (i.e. turn the customer into a reasonable person and come up with a "win-win" situation),
- Doing nothing about something: (i.e. when the customer is angry about something and the operator is understanding, but cannot do anything about it at the moment),
- Distraction: (i.e. deflecting or redirecting an attack by a customer), and
- Harmonizing: (i.e. operator must stay flexible and move in the direction of the customer).

Harmonizing was noted as the most effective response in conflict situations. This involves appearing to mollify or even agree with the abusive passenger. However, it is also the most difficult to learn, in part because of the emotions operators are likely to feel in conflict situations.

Role-playing, in which the trainers "create" situations for the operators to act out, is a major part of both lesson plans. The role-playing used in Lesson Plan 20 ensures that the operators have the appropriate knowledge of the fare media used, price of each, various types of services (i.e. local, express), and special riding privileges. The role-playing for Lesson Plan 23 ensures that the operators know how to deal with different types of people that may board their bus.

The Massachusetts Bay Transportation Authority (MBTA) provides their operators with a comprehensive training program. Operators are trained on how to operate the farebox, what types of fare media are accepted, and the prices of each. Also, the MBTA provides a training segment entitled "Welcome Aboard." This training segment discusses passenger relations skills, how to provide reliable and expert service, and how to avoid arguments with passengers. An excerpt from the "Welcome Aboard" training segment is shown in Figure 5.

Based on the information provided by the agencies, it seems that large transit agencies, such as Los Angeles MTA and MBTA, are able to provide more in-depth training to their operators than small transit agencies.

Smaller agencies, such as Sun Tran (City of Tucson, Arizona) and the Capital District Transportation Authority in

Lesson Plan 20

Methods of Collecting MTA Fare Media

Revised
September 1, 1995

Hours
6:55 A.M. - 9:55 A.M.

Place
Operations Central Instruction

Class presented to
MTA operating personnel

Uniform and equipment
Instructor's regulation uniform

Training aids and equipment
Current Tariff, Operator's Rulebook and SOP

Instructor
Assigned by Operations Central Instruction, Department 3297

Reference and study assignments
Current Tariff, Operator's Rulebook and SOP

Presentation
Practical exercise (3 hours 35 minutes)

Los Angeles County Metropolitan Transportation Authority

Operations Central Instruction El Monte, CA

FIGURE 4 LACMTA's training program on fare collection methods

Lesson Plan 20

Methods of Collecting MTA Fare Media

Explanation
The Instructor will use the current tariff regulations in the Rule Book & SOP to explain the procedures used when handling MTA Fare Media.

Rule Book
Have trainees read aloud Section 8 of the Rulebook. Explain each rule and answer any questions.

Rule 8.00 - General Statement
Rule 8.01 - Defective Fareboxes
Rule 8.02 - Tampering With Farebox
Rule 8.03 - Depositing Fares
Rule 8.04 - Fare Disagreements
Rule 8.05 - Not Accounting for Passengers (NAP Major Infraction)
Rule 8.06 - Confiscating Passes/Fare media
Rule 8.07 - Fare Identification Checks

Standard Operating Procedures
Have trainees read Section 8 in SOP aloud. Use the Lesson Plan book to stress and explain necessary procedures for the proper handling. The instructor will explain this section and use visual aids (fare media board, chalk board and blow-ups) to describe the different fare media.

Transportation Department Notices (TD)
Use TD Notices to address revisions in fare structure.

Los Angeles County Metropolitan Transportation Authority

Explain The Following

- Cash fare (8.103, 8.104 & TD 95-09).
- Disabled persons (8.120)
- Senior Citizens (8.119)
- Students Under 20 (8.111)
- College/Vocational (8.111)
- Tokens and their value (8.122).
- MTA Monetary tickets (8.121)
- Ticket Vending Machine Tickets (TVM) (8.121)

Role Play
Local line service using cash fares, transfers, tickets and tokens.

Base Monthly Passes
Explain different types of passes and their cost.

- Monthly, Semi-Monthly and Joint (8.109, 8.110)
- Senior Citizen (8.119)
- Disabled (8.120)
- Student (8.111)
- Employee Passes (8.114)
- VIP (8.112)
- Exchange of Employee Pass privileges between MTA and other transit agencies. (8.115-8.117).

FIGURE 4 *(Continued).*

Lesson Plan 20 - Methods of collecting fares in L.A. County

Explain Limited and Local Line Service (8.104)
The Instructor will draw a diagram on chalkboard to illustrate Limited and Local line service. Explain the different both local and restricted service.

Role Play
Both local and limited service using cash, tickets, tokens, and monthly passes.

Express Service (8.105)
Instructor will draw a diagram on chalkboard ofEXPRESS line service, a combination of local, express and limited stops. The Instructor will read and explain, stamps, cash fares and pass prices.

Express Increments (8.106)
The Instructor will draw diagram on chalkboard of freeway or busway, explaining miles traveled and cost per distance increment. Explain what to punch on zone/or identification checks and how they are used to identify fares paid.

Role Play
Express Service using cash, tokens, base monthly passes and monthly passes with increment stamps.

Special Service Buses (8.112 & 8.113)
The Instructor will explain the purpose of special service buses. Explain fares and restrictions.

Free Transportation (8.127)
Two children ***under*** five years of age ride free.

Law Enforcement Officers In Full Uniform Ride Free (8.129)
Law Enforcement officers include:

- Local police agencies
- Marshals
- Sheriffs

Note: Non-uniformed officers must present on MTA police transportation pass.

MTA Transit Police
Transit Police in full uniform ride free. Ifthey are wearing a full uniform they must present a Police pass.

Traffic Control Officers (8.129)
Traffic Control Officers ride MTA buses at no charge in the following circumstances:

- In full uniform and wearingtheir cap. A Traffic Control Officer in uniform without a cap is charged full fare.
- Traffic Control Officers must ride within the CBD boundary streets
- Freerides arerestrictedbetween thehours of 7:00am. to 6:00p.m. daily, except Sundays.

Exchange of Employee Pass Privilege (8.115-8.117)
Employees, spouse, dependent and retiree annual passes will be honored for fare to all destinations on all line service by the Orange County Transit Authority OCTA and the MTA. OCTA passes are easily identified by the OCTA logo. The holder' photo is affixed to the pass. San Bernardino (Omnitrans) will honor Employee annual passes (only) to any/all destinations.
FIGURE *4 (Continued).*

Transportation of Animals on MTA buses (2.122)
Carrying animals aboard MTA is prohibited except under the following conditions:

- A small animal enclosed inside a suitable carrier, the size ofwhich does not interfere with the comfort or convenience of the other customers
- Service Animals

Summary
Discuss with students the importance of reading, studying and understandingthe current Fare Media Instructions, the necessity ofinspecting fares and the proper use of zone checks.

Review and Critique
Impress on students the importance of quoting and collecting correct fares. Review with students the necessity of understanding and having a general knowledge of the MTA fare structure to enable them to collect fares as outlined in the Rule Book & SOP. Emphasize the importance of exercising patience, understanding and courtesy towards all customers when collecting fares or answering questions.

"WELCOME ABOARD"

Picking up and boarding passengers can be the busiest and most important part of the job. The impression that you create during this time will stay with your Passengers for the rest of the trip.

When You Use the Three Passenger Relations Skills You:

- Give a positive Impression of yourself and the service you provide.
- Show that you are a professional bus operator.
- Show that you take pride in what you do.

Each skill involves the performance of many tasks. Master them and you will gain the respect and support of your passengers. You can add to these from your own experience. Here are just a few:

PROVIDE RELIABLE, EXPERT SERVICE

- Appear neatly groomed.
- Depart on schedule.
- Stay on schedule whenever possible.
- Avoid splashing waiting passengers.
- Check the bus stop area for dangerous spots and avoid them.
- Answer questions clearly and accurately.

ALWAYS BE COURTEOUS AND PATIENT

- Greet even the grouchy passengers pleasantly.
- Answer questions in a polite tone of voice.
- Do not embarrass passengers fumbling with change or transfers.
- Help people who have difficulty boarding the bus.
- Treat your passengers the way you want to be treated.
- Give passengers the benefit of the doubt whenever possible.

FIGURE 5 Excerpt from MBTA's training program for bus operators.

Albany, New York provide basic training to their operators, such as how to operate the farebox and discuss passenger relations issues, but without the level of detail found at the larger agencies.

Operator Procedures for Collecting Fares

Operators are given procedures on how to operate the farebox and what types of fares to charge. All of the survey respondents use electronic registering fareboxes. An electronic farebox scans and assesses the value of coins, tokens, bills, and magnetic stripe tickets, then stores that information in its memory. The transit agencies give their operators detailed instructions on procedures for logging on and off, passenger classification, and fare exceptions. Figures 6 and 7 are examples of MBTA's farebox instructions.

In theory, the electronic farebox takes the operator "out of the loop." Once the passenger deposits money into the farebox, it counts the money and displays the amount to the driver on a digital display. The operator no longer has to count up the

Logging On

1 If you see a flashing red dot, press[•] green DUMP key Display reads "NO DRIVE"	press [#]	to continue
2 Display should flash "FARE SET" Enter proper fareset for the route	press [#]	to continue
3 Display should flash "NO DRIVE" Enter badge number	press [#]	to continue
4 Display should flash "SIGNCODE" Enter same signcode used for electronic destination sign	press [#]	to continue
5 Display should flash "RUN ?" Enter run number	press [#]	to continue
6 Press [#] and repeat to review entries Once this is done, press the [•] green DUMP key		
7 Numeric display will read 0.00 Pres[0] to test coin drop mechanism		

FIGURE 6 MBTA's instructions for logging on the electronic farebox.

Logging Off

1	Press the [•] green DUMP key to clear all remaining coins
2	Press the [#] then pres [*] -- the farebox will make a "warbling" noise
3	Press [#] and repeat until the display flashes "DRIVER ?"
4	Press [0] to clear the current badge number
5	Press the [•] green DUMP key -- after a couple of seconds, the display will read "NO DRIVE"

FIGURE 7 MIBTA's instructions for logging out of the electronic farebox.

coins manually, an increasingly difficult task as fares increase. However, the operator must still evaluate the deposit to be sure it is valid. Modern fareboxes measure only the size of coins (or the length of dollar bills), so any slug or paper within a size tolerance will be counted toward the fare by the farebox.

Multiagency and multimodal fare systems can complicate the driver's job. An example of this is the Chicago Transit Authority (CTA) and PACE Suburban Bus, whose personnel are responsible for collecting fares from riders of both systems. In this situation, both agencies ensure that all personnel are trained on what types of media are sold and the price of each. PACE fares are coordinated with the CTA. Sometimes, fare collection systems use media, such as magnetic stripe tickets on rail and paper transfers on buses, that are not entirely compatible.

A number of regional, multimodal operators are moving to remedy such problems by acquiring automatic fare collection equipment with compatible media. Transit agencies in Chicago and Cleveland are good examples, having obtained magnetic card processing equipment for buses and trains that allow transfers between the modes. New systems based on smart cards are being considered in other areas.

Other Personnel Training

Eight of the survey respondents have other transit agency personnel involved in collecting fares from passengers. At agencies such as MARTA in Atlanta, RideStores and authorized outlets sell fare media. Customized training is provided by supervisors and management. Also, at Sun Tran in Tucson, Arizona, service representatives sell passes and give information relating to services provided. Their training includes customer relations and the types of services Sun Tran provides. Currency exchanges and supermarkets in Chicago sell passes. At Palm Tran in West Palm Beach, Florida, retail outlets sell monthly passes throughout the county. In the central business district in Portland, a customer service center sells monthly passes and ticket books.

FARE POLICY

A fare policy reflects an agency's goals and objectives, and addresses the transit fare structure, fare prices, and tariff rules. Over time, a policy provides a considered baseline against which to measure actual performance (ridership and revenue) to ensure that the results are within the agency's objectives.

Fare policies vary among transit agencies. Various survey respondents views on fare policy, especially how it affects fare disputes, are described in this section.

Exact Fare Policy

All of the respondents have an exact fare policy on the bus. This means that the passenger must have exact change when boarding the bus and the operator does not make change. Exact fare policies were implemented broadly during the 1960s and 1970s, as drivers' unions and management responded to robberies and attacks on bus drivers for their change funds. This policy had the side benefit of simplifying the operator's duties, reducing the potential for confusion and disputes, and reducing back office accounting costs. This came at the cost of some inconvenience to passengers.

In addition to cash, a variety of fare media are being used at transit agencies. Table 4 shows the number of survey respondents using the various fare media.

TABLE 4

FARE MEDIA USAGE

Fare Media Type	Number of Respondents Who Use
Passes	17
Tokens	10
Individual Tickets	10
Multi-ride tickets (punch tickets)	4
"Stored Value" tickets	
Other:	1
Transfers	3
Employer paid vouchers	1
Magnetic swipe cards	1

Source: Survey Results

Except for Santa Monica, all of the survey respondents use passes. Most are weekly and monthly passes. San Diego Transit provides a multiday pass. MARTA uses magnetic stripe passes that can be programmed for anything from one trip to one day to five days or for employee passes up to one year.

Three agencies have reported problems with their fare media and the procedures to enforce them. Tri-Met, in Portland, indicated that pre-validated tickets are difficult for drivers to read, so some operators may not bother to try to read them. Sun Tran, in Tucson, reported that, along with not having the correct fare, "punching" of tickets is a problem. Drivers will often not punch the pass or will punch the pass in the wrong place, resulting in a free ride. The MBTA in Boston reported that transfers were a problem for the rail to bus connection because of the limited accountability of the issuing process. As in many cities, transfers are on a pad and can be given out as desired by the driver, whether or not in compliance with the tariff.

Seven of the respondents use machine readable passes or tickets with a magnetic stripe. MARTA encodes a valid time period on the magnetic stripe, with the encoding done in-house. This discourages counterfeiting. Sun Tran intended to implement this type of machine by July of 1996. In early 1998, the Jacksonville Transportation Authority in Jacksonville, Florida, intends to implement magnetic swipe card technology on its fixed guideway and bus systems.

Special techniques, such as special printing or holograms to discourage counterfeiting, are used by 12 of the survey respondents. Most of these use holograms for their monthly passes. A hologram is a three-dimensional image often printed on a metallic or clear applique. High-quality holograms are nearly impossible to counterfeit, though cheaper ones can be simulated. Problems with low lighting at the front of the bus can reduce their effectiveness, however.

At Palm Tran, a special foil type paper is used--the metallic foil does not photocopy and the colors are changed monthly. San Diego Transit reports that the foil used on their tickets has all but eliminated their counterfeiting problems.

Distance Based Fares

Distance based fares apply an increasing charge the farther the passenger rides. Nine of the respondents have distance based fares. To enforce distance based fares, most respondents indicated that the customers always pay upon boarding. Three agencies stated that they also use zone checks. At the Capital District Transportation Authority in Albany, the fare is paid when the customer boards, but customers going past a zone are given a zone check, which the driver collects. In Los Angeles, the MTA uses a zone check system for express fares. Patrons boarding the bus are issued a ticket if the full fare is paid. The operator stops the bus at the zone boundary and collects the tickets. Passengers who do not have a ticket are requested to pay the supplemental fare. In Jacksonville, buses pull over at an established check point and a fare receipt is collected. The fare receipts are issued when the full fare is paid upon boarding.

Tri-Met in Portland has a unique bus route segment called the "Fareless Square." Patrons traveling within this "square" do not have to pay a fare. Patrons boarding within but traveling beyond the boundaries of the square are expected to have proof of payment. The problem with this system is that some passengers get on in the square and stay on without paying, and some drivers don't make an effort to collect the fare. Recent budget cuts have shifted fare inspectors to the light rail line, exacerbating the problem. Tri-Met looks to return fare inspectors to bus routes in the future.

While use of fare inspectors on buses may be unique to Tri-Met (which implemented a proof-of-payment system in the 1980s), free or reduced fare zones in downtown areas are all susceptible to fare evasion. Several transit agencies have used "DASH" cards ("DASH" = Downtown Area Short Hop), large brightly colored cards given to boarding passengers who don't pay. Presumably, peer pressure from other passengers will encourage fare payment. However, anecdotal discussions with transit managers indicate that many find this a frustrating and unsolvable problem. In several cases circulator buses are preferred to downtown zones for this reason.

None of the respondents who use distance based fares had found a collection method that both minimizes problems for the driver and maximizes revenue, other than collecting when the passenger boards.

The survey respondents indicated that express and premium fares are collected when the passenger boards. Usually, express stamps are required on passes used on such lines. If the passes do not have an express stamp, patrons are requested to pay the supplemental fare.

Effect of Fare Policy on Disputes

Fare increases are an inevitable part of the transit industry. A fare increase is difficult to deal with from both agency and customer perspectives. This is dramatically illustrated by events experienced by operators at the Manhattanville Bus Depot in New York when a fare increase took place in November 1995.

> On the first day of the fare increase, drivers expected to be yelled and cursed at by passengers who felt pushed to the *snapping* point by the transit agency's fare increase. Passengers don't protest directly to the administrators, but to the first person they see: the bus driver. A bus driver indicated that when the fare in New York went from $1.15 to $1.25, a passenger threatened him at knifepoint and a police officer had to be called to remove the person from the bus. The driver stated that it makes no difference what the increase is--a nickel, dime, or quarter--people get angry. This incident was one of three assaults on drivers in Manhattan that appeared to be related to the fare increase *(3).*

New York is not the only American city whose transit system is reducing service and raising fares to cope with cutbacks in government funding. A recent survey by the American Public Transit Association (APTA) indicated that at least 40 percent of APTA's member agencies are considering similar action. Part of the justification for the New York fare hike was a call by the governor for increased revenue to support bonds (4).

The frequency of fare disputes depends on how an agency's fare policy is set forth. If an agency has a "simple" fare policy, the agency is less likely to have many fare disputes. Complex systems, such as distance based zones, increase the likelihood of a fare dispute.

At MARTA, the tariff structure consists of a relatively simple flat fare, with only a few exceptions. The fare system is easy for passengers and operators to understand, and procedures for collecting and handling revenue are straightforward. The MBTA simplifies its collection process by not using transfers (except for limited bus-rail transfers). As a result, passengers pay full fare upon boarding.

Los Angeles MTA has a different situation. The tariff structure is complex, with more than a dozen different pass types. This requires some effort on the part of the operators to stay current with the valid passes. MTA stated that with this level of complexity, some counterfeit passes may go undetected. Also, with a base fare of $1.35, a large amount of currency comes through the farebox. This has required an increase in the revenue protection effort, as dollars are easier to steal than coins. It has also led to some modifications to the vaults into which the cashboxes are emptied.

Planned Direction of Fare Policy

The survey respondents would like to see fare policies either stay simplified or move toward simplification. A simplified fare policy would make it easier for operators to enforce fares and easier for passengers to understand the system. Customer complaints may also decrease with a simplified fare policy, although some agencies recognize that, because of funding mechanisms, simpler fare policies don't necessarily result in "fairness" to all passengers.

One of the realities for any transit agency is increased fares. Tri-Met indicated that a pattern has been established to

impose a nickel increase within each fare category every 2 years. CTA in Chicago indicated that fares will be increased, different fare media will be introduced, and possibly bonuses for large prepaid fare purchases will be initiated. MARTA has studied various alternatives to its fare structure, specifically distance based fares and passes based on time-of-day; the prevailing alternative was to retain a relatively simple fare structure. Boston would also like to keep it simple, but add ticket vending machines (TVMs) with the new subway effort to increase the distribution of bus and rail passes.

One different response to the direction of fare policy came from Los Angeles. The LACMTA stated that a smart card system would simplify the fare collection process. LACMTA believes that this advanced technology would help with enforcement issues, especially internal theft. Other agencies are looking at smart card systems as a means of furthering the distribution of fare media; several demonstration systems have been started and Requests for Proposals for others are expected in the near future. Conversations with other agencies indicate a "wait and see" attitude, based on the belief that the banking infrastructure must be in place first to support a broadbased smart card before transit can justify the investment.

FARE COLLECTION EQUIPMENT

The fare collection equipment used at transit agencies depends on the payment options given to passengers. As technology rapidly evolves, improvements can be seen in revenue control, data collection, and operations planning. The various types of fare collection equipment currently used by transit agencies that responded to the survey are described in this section.

Fareboxes

All of the respondents use electronic registering fareboxes. This reflects the national trend--with 67,000 buses in the national "fleet" about 55,000 are equipped with some type of electronic farebox *(5)*. Fifteen of the responding agencies have GFI fareboxes and the other three agencies have Cubic fareboxes. The agencies indicated that these fareboxes were very reliable. Depending on the size of the fleet, the number of "trouble calls" ranges from as many as 50 per day (Los Angeles MTA) to 1 per day (Palm Tran, West Palm Beach). Table 5 illustrates the range of trouble calls by transit agency and the number of full-time equivalents (employees) required to maintain the farebox fleet.

The ratio of maintainers to fareboxes for this group is 1:68. The larger cities have a proportionally larger maintenance force, which reflects the higher ridership, greater usage, and more severe operating conditions typical of big city operation.

Most electronic fareboxes can accept fares in the form of tokens, coins, tickets, and dollar bills (though some have been delivered without the ability to handle paper currency and tickets). Each fare medium is identified and counted upon insertion by the passenger, with the total value shown to the driver on a digital display. A picture of this type of farebox is shown in Figure 8.

Electronic fareboxes are usually equipped with a high-security cashbox with separate compartments for coins and bills. The farebox is also equipped with either a 12- or 16-button driver-operated keypad for the registration of special and reduced fare categories. Data transmission is provided by means of a built-in data port for interface with the GFI system.

On-Board Ticket Processors or Issuers

Only two survey respondents, MARTA and CTA, indicated that they use on-board ticket issuing or processing equipment.

MARTA has installed a read-only magnetic card reader that interfaces with the farebox. The card reader "reads" magnetic data, but does not write data or print on passengers' fare medium. MARTA rates the reliability of its 671 units, built by GFI, as very good--less than 1 percent failure on the card reader. MARTA has indicated that this type of equipment has been effective in reducing the number of driver/passenger disputes over fare matters because the farebox reads the quantity of the fare deposited, the operator reads the amount reported by the farebox and requests additional fare, if necessary. If not, the operator dumps the fare and waits for the next passenger. Data collection has also been improved. MARTA now has a "checks and balances" system. The computer generates a revenue total, and the agency is able to match to the actual

TABLE 5

FAREBOX RELIABILITY

Transit Agency	Location	No. of Fareboxes In Use	Daily "Trouble Calls"	No. of FTE's
Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA	671	24	11
Massachusetts Bay Transportation Authority	Boston, MA	1400	93	15
Chicago Transit Authority	Chicago, IL	2500	20	50
Jacksonville Transportation Authority	Jacksonville, FL	185	less than 2	1
Los Angeles County MTA	Los Angeles, CA	2104	50	32
Transit Authority of River City	Louisville, KY	262	less than 2	3
Milwaukee County Transit	Milwaukee, WI	600	4-6	3
Spokane Transit Authority	Spokane, WA	150	2	1
Palm Tran	W. Palm Beach, FL	67	1-2	1/2 person

Source: Survey

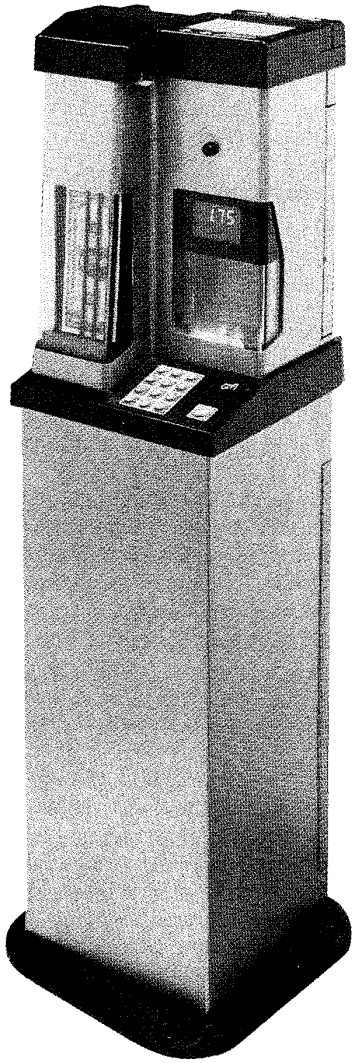


FIGURE 8 Example of an electronic registering farebox (courtesty of GFI Genfare).

revenue within a 1 percent variance. The card reader also enables them to keep a more accurate count of pre-paid patronage by route.

Recently, Chicago's CTA installed read-write ticket processors on its buses, manufactured by Cubic. This device processes multi-ride or "stored value" tickets and transfers. Unlike similar devices installed at other transit systems in the United States, the transfer issuing feature is "semi-automatic," that is, the driver must feed blank transfers into the unit rather than the unit drawing the card off an internal supply. When a transfer is received, the passenger inserts it into the processor, which checks magnetically encoded transfers as to direction, time, and correct route. However, these last two items are only partially installed. CTA could not give feedback as to the effectiveness in reducing the frequency of driver/passenger disputes or improving data collection because the units are too new to comment.

A number of other agencies use card processing equipment. Discussions with transit agency management indicate that such equipment is generally popular with the drivers, as it reduces their direct involvement in fare handling. In some cases, driver's unions have lobbied for electronic collection systems.

Off-Board Fare Sales

Sixteen of the surveyed respondents collect fares off the vehicle through various sales outlets. Of the sixteen, five agencies use ticket vending machines to sell fare media. All of these agencies operate rail service as well as buses. Table 6 summarizes the various off-board fare sales techniques.

Effect of Fare Collection Equipment on Fare Policy

The procurement of fare collection equipment is guided by a transit agency's fare policy. For example, if a transit agency institutes a "flat," simple fare structure, then the fare equipment does not have to be complicated. However, if the transit agency decides on a distance based fare structure, the equipment must be more complex. The price of the fare is also a factor.

When the MTA in Los Angeles last purchased fare collection equipment, it was known that fares would soon be increased to more than a dollar. Therefore, the fareboxes had to accept dollar bills and the cashboxes were required to have at least a 600-bill capacity.

Two agencies, MCT in Milwaukee and Palm Tran in West Palm Beach, stated that the acceptance of the dollar bill was the driving factor in procuring their fare collection equipment.

River City Transit in Louisville planned to accommodate future options when they recently purchased a new GFI system with the capability to add stored value, smart cards, or ticket/transfer issuance.

Several transit agencies have experienced the problem of "not enough buttons" on the farebox--when they want to institute a new fare the fareboxes can't be programmed or there is no way to account for it. Transit agencies are looking toward a new generation of farebox that will provide additional flexibility in adding new fare types without the need to rebuild either the hardware or the software.

FARE DISPUTES

Fare disputes are difficult to resolve at any agency. Some reasons why fare disputes arise, their frequency and severity, and how the operator deals with these disputes, based on survey responses, are discussed in this section.

Causes for Fare Disputes

Table 7 outlines the causes for fare disputes between drivers and passengers. The top three are the most common causes of disputes.

TABLE 6

OFF-BOARD FARE SALES

Transit Agency	Location	Outlets	Ticket Vending Machine
Capital District Transportation Authority	Albany, NY	X	
Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA	X	X
Massachusetts Bay Transportation Authority	Boston, MA	X	X
Chicago Transit Authority	Chicago, IL	X	X
PACE Suburban Bus	Chicago, IL	X	
Jacksonville Transportation Authority	Jacksonville, FL	X	
Los Angeles County MTA	Los Angeles, CA	X	X
Transit Authority of River City	Louisville, KY	X	
Milwaukee County Transit	Milwaukee, WI	X	
City of Phoenix Public Transit Department	Phoenix, AZ	X	
Tri-Met	Portland, OR	X	X
San Diego Transit	San Diego, CA	X	
Santa Monica Municipal Bus	Lines Santa Monica, CA	X	
Spokane Transit Authority	Spokane, WA	X	
Sun Tran	Tucson, AZ	X	
Palm Tran W.	Palm Beach, FL	X	

Source: Survey

TABLE 7

CAUSES FOR FARE DISPUTES

Reasons for Fare Disputes	Number of Respondents
Arguments over transfers	15
Dispute as to proper cash fares	12
Expired or invalid passes	7
Arguments about reduced fare authorizations	7
Problems involving multi-agency fares	2
Counterfeit tickets or passes	1
Multi-ride punch passes	0
Single-trip tickets	0
Other:	
Valid "bus card plus" passes	1

Source: Survey

The number one cause of fare disputes is arguments over transfers. Many passengers must transfer from one bus to another to reach their destination. These disputes are likely to be about the time or direction on the transfer.

Frequency and Severity

The frequency of fare disputes varies among the agencies, as depicted in Table 8.

TABLE 8

FREQUENCY OF FARE DISPUTES

Frequency of Fare Disputes	Number of Respondents
Daily	9
At least weekly	7
Other:	
Rarely	1
Monthly	0

Source: Survey N B : Not all surveyed transit agencies responded.

Most of the survey respondents indicated that fare disputes are reported on a daily basis and in some cases have resulted in assaults on the bus operators. Eight of the respondents reported that fare-related assaults have taken place against operators, with as many as 48 in the past year in Atlanta, to as few as two in Louisville.

Driver Enforcement of Fares

In all but one of the responding agencies the bus operator is the primary fare "enforcer." In addition to guiding the bus safely, responding to questions, and other duties, the operator must check the farebox on each fare deposit and be sure that the passenger has paid the correct fare. In a complex fare environment, this duty requires a considerable amount of attention. In some agencies, such as Santa Monica Municipal Bus Lines, Riverside Transit Authority, and Sun Tran, dispatchers and road supervisors can be called in to take the pressure off the driver. If a fare dispute ensues, drivers are expected to remain courteous and report violations to the dispatcher or road supervisor, who will decide whether to send a representative or call the police.

The operator has less pressure to enforce fares when the agency employs fare inspectors. Of all responding agencies, only Tri-Met deploys fare inspectors on board its buses. Budget cuts have eliminated most inspection on buses. TriMet continues to use fare inspectors on its light rail system. Many operators, however, don't recognize their responsibility for fares. It is likely that this is a unique situation in U.S. practice, stemming from Tri-Met's implementation of a Proof of Payment fare collection system in the 1980s. No other bus transit agency is known to use fare inspectors on buses on a regular basis, though supervisors and "inspectors" have historically been used to collect zone fares.

Tri-Met has long been concerned about drivers' welfare and their exposure to assault. To deal with this, Tri-Met purchased

the "Strategies--Dealing with Difficult People" program from Strategies, Inc., in Seattle. A number of other transit agencies, including Transit Authority of River City in Louisville and San Diego Transit among the survey respondents, have purchased the program. This program centers on a high-quality videotape presenting bus operators as actors in a number of vignettes to which the trainees react. Along with lecture and discussion, the course concentrates on maintaining safe operation, maintaining order on the bus, and recognizing the rights of other people.

The Strategies class includes the entire operating staff. The topics discussed and taught in the class include three major modules:

- Communication--establishing a rapport with the difficult patron through the use of communication skills;
- Verbal control--encouraging compliance of the resistive customer to the operator's directives and interrupting nuisance behavior; and
- Dealing with anger--demonstrating practical techniques for diffusing the hostile passenger (and the driver's own anger).

Most passengers, of course, are not a problem. However, a small percentage (the "one-percenters") have their own agenda of exercising control over drivers and others. They do this by a variety of strategies that "push buttons," i.e., try to elicit a reaction from the driver. The "button" will be different for different operators (youth vs. age, threat of violence, profanity, refusal to pay fare, etc.).

Drivers are taught that if they react inappropriately, the driver relinquishes control to the "one-percenter," and that they must solve the problem at the farebox before the person becomes a problem for all of the riders. The drivers are also taught that ignoring the problem the first time shifts it to other passengers, and will likely result in loss of control when the problem recurs.

Tri-Met is installing a new bus dispatch system. This includes automatic vehicle location as well as new radios. Each bus will have a "vehicle control head" (VCH) that provides an interface between the driver and the system. One of the buttons on the VCH allows drivers to report fare problems--a menu of three choices appears on the screen (fare evasion, coin jam, bill jam).

At MARTA, the operator is able to make a judgment call regarding fare disputes or may request a supervisor's assistance in a particular situation. MARTA's Manual of Instruction states, "Passengers refusing to pay a fare will be asked in a courteous manner to leave the bus. Should this request be ignored you should contact the Communications Center and request the assistance of a Transit Police Officer or Supervisor. Under no circumstances will an operator attempt to forcibly eject a passenger." In Jacksonville, the police or street supervisors are called to the scene and will physically remove the person from the bus.

In contrast to MARTA and Jacksonville TA, the CTA's policy is to allow passengers who insist that the correct fare has been paid to be seated. Also, at PACE, the driver will ask for the correct fare once. If the correct fare is not given and it is the first offense, the passenger will board the bus. In some more difficult situations, the dispatcher or even the police, will be called. The obvious problem with this policy is that it is hard to judge if it is the first offense.

MBTA's "Rule 89" is used to enforce its fares. Rule 89 states that the operator should ask in a courteous manner for the fare and if the correct fare is not received, the operator should report it to a supervisory official. If this is a reoccurrence case, it gets reported to the District Supervisor. Historically, rules allowed the operator to get the customer's name and address (validated by checking identification); this information would be forwarded to the Revenue Department for billing purposes. However, this approach is not used any more on buses.

Los Angeles' policy consists of a "reasonable effort." This is defined as a one time quotation of the fare. If a disagreement arises between the operator and the passenger, the operator does not pursue the argument. He or she simply fills out an "Unenforced Rule" card and submits it to the supervisor at the garage. This is considered adequate proof of an attempt to collect the proper fare.

Special Programs to Deal With Fare Disputes

Aside from the "Strategies" course mentioned above, none of the agencies surveyed had "special" programs for dealing with fare disputes beyond what is stated in rule books or standard operating procedures.

Proof of Reduced Fare Eligibility

All the agencies that have reduced fares provide a means for passengers to prove their eligibility. LACMTA has a strict reduced fare eligibility policy that requires customers to prove eligibility by presenting specific documentation, such as Medicare cards or braille identification cards. The MTA operators are trained to inspect these, forms of identification for validity. Senior citizens are asked to provide either a Medicare card, reduced fare permit, Department of Motor Vehicle identification card, or a Los Angeles identification card. Persons with disabilities are asked to provide either a Los Angeles County Transit Operator's Association Card, DMV Placard identification card, Medicare card, or a Disabled Veteran identification card.

Several agencies use photo identification cards or a special type of pass, such as a student or senior citizen pass. At TriMet, operators are expected to ask for supplementary identification in order to prove eligibility. However, this is a problem because drivers often do not ask for the supplemental identification. In Tucson, reduced fare identification cards are issued by the eligibility office. Abuse of these passes is a concern because passengers sometimes claim to be younger or older or even disabled in order to pay a reduced fare.

CHAPTER THREE

FARE EVASION ISSUES

Fare evasion, a concern for all transit agencies, takes many forms, whether it is abusing certain types of fares or transfers, or even counterfeiting fare media. This section describes how transit agencies handle fare evasion and the enforcement of fare evasion rules.

ESTIMATED REVENUE LOSS

Very few survey respondents gave information regarding the estimated revenue loss from fare evasion. Shown as a percentage of total revenue, the range was from 1 to 5 percent lost through fare evasion. Of the agencies that responded, these percentages were merely educated guesses.

Tri-Met indicated that they calculate fare evasion using the following formula:

ridership x evasion rate x average fare x weightings on different kinds of evasion.

The individual estimates are derived from the average fare, which is calculated every month, and the evasion rate, which is based on written warnings or citations given by the fare inspectors (which equates to about 2 percent). The weightings on different kinds of evasion are based on factors such as no proof of payment at all, zone violations, or expired tickets. Various reports are generated using these formulas.

FREQUENCY OF RECORDED FARE EVASION INCIDENTS

Table 9 illustrates some of the factors that lead to fare evasion losses.

TABLE 9

FACTORS AFFECTING FARE EVASION LOSSES

Factors	Number of Respondents
Abuse of transfers	14
Certain types of fares	8
Counterfeiting of fare media	4
Other:	
Refusal to pay proper fare	3

The abuse of transfers is the main factor in fare evasion losses. This has been reviewed in some depth in an earlier Synthesis (2). Some passengers are very creative in avoiding the cost of a bus fare (re-marking transfers, using expired transfers, "round tripping"), and problems can include theft of the transfer stock. However, the transit agencies that had attempted to estimate the dollar value of losses found them to be less than one percent of revenue.

The frequency of recorded fare evasion incidents differs between the survey respondents. On an annual basis, the range is from as few as 156 incidents (San Diego) to as many as 303 (MARTA). In Atlanta much of the fare evasion occurs at the rail stations, which have unattended faregates. Many stations also have barrier-free intermodal areas between bus platforms and rail platforms. Therefore, patrons sometimes enter the free intermodal stations through the bus driveways. MARTA did a study in 1992 regarding fare evasion at rail stations which indicated that approximately 1.8 percent of station entries were made via faregate avoidance. And at stations with free intermodal areas, the fare evasion rate was about 2.3 percent. However, police presence has increased since then.

LOCAL LAWS ON FARE EVASION AND HOW THEY ARE ENFORCED

Security is a great concern of many public transit agencies. The task of ensuring that adequate security measures are in place often lies with local police units or transit police. Careful preparation, close surveillance, and tight coordination with transit organizations are essential to the success of any policing effort by public transit agencies.

It is imperative that police be given ordinances and laws that are specific to mass transit concerns. When designing the laws, the needs of the police must be considered, as well as rider safety and convenience. One crucial mass transit ordinance is a law that allows for the removal of "undesirable elements." This ordinance allows for the removal and exclusion of someone found abusing the transit system. The length of the exclusion depends on the severity of the violation and the history of the abuser. The penalty for violating the exclusion could be an arrest and a charge of Trespassing.

Under California State law, passengers can be prosecuted for fare evasion. At the Los Angeles MTA, transit police can issue citations per 640 B 1 and 640 B2 of the California penal code. A copy of this code is shown in Figure 9. The maximum fine is $250.00. Repeat offenders with outstanding warrants can be arrested. Tri-Met issues citations to people who evade the fares and can exclude chronic scofflaws. Both of these authorities have proof of payment (POP) systems on their light rail lines, and the legislation is primarily designed to support POP enforcement.

§640

§640 Acts committed on facilities or vehicles of public transportation system.

Any of the following acts committed on or in the facilities or vehicles of a public transportation system as defined by Section 99211 of the Public Utilities Code, on or in the facilities of, or vehicles operated by entities subsidized by, the Department of Transportation, or on or in any leased or rented facilities or vehicles for which any of the above entities incur costs of cleanup, repair, or replacement as a result of any of those acts, is an infraction punishable by a fine not to exceed two hundred fifty dollars ($250) and by community service for a total time not to exceed 48 hours over a period not to exceed 30 days, during a time other than during his or her hours of school attendance or employment.

(a) Evasion of the payment of the fares of the system.

(b) Misuse of transfers, passes, tickets, or tokens with the intent to evade the payment of fares.

(c) Smoking, eating, or drinking in or on system facilities or vehicles in those areas where these activities are prohibited by that system.

(d) Expectorating upon system facilities or vehicles.

(f) Willfully disturbing others on or in system facilities or vehicles by engaging in boisterous or unruly behavior. *(Amended by Stats 1990 ch 261 §lm eff, 1.1/91.)*

FIGURE 9 Section 640 of the California penal code.

In Atlanta, the MARTA police are fully authorized, sworn officers. They have the same powers as any police officer, plus they can arrest fare evaders. City law in Tucson covers fare evasion and it is enforced by the local police department. In West Palm Beach, a county ordinance prohibits the fare evading patron from riding the bus. At PACE, fare enforcement is governed by the municipality where the incident happened.

In Milwaukee, a private enforcement agency (Wackenhut) is employed. Wackenhut agents will apprehend the person who is trying to evade the fare, but actual police officers will arrest the individual.

MBTA in Boston relies on its own transit police department. These police officers rove through the system on regular "tours" or when called to assist.

In Portland where Tri-Met employs fare inspectors, police officers do not generally conduct inspections, but assist with obtaining identification or with other confrontational issues. The transit police presence is based on a contract with the city police bureau. The agency pays for staffing of dedicated police. A similar arrangement is made with the local district attorney's office.

In Atlanta, both uniformed and plain-clothes MARTA police patrol the rail system. Most patrols are random, but some are directed at particular sites. Several MARTA police officers also patrol the bus routes in their cars. Bus operators may call on these officers for assistance.

The Public Transit Unit of the Chicago Police Department is assigned specifically to transit duties. In addition to normal duty, the CTA pays the Chicago police department to hire offduty officers.

PROSECUTION OF FARE EVADERS

Most of the respondents prosecute repeat fare evaders. Specifics vary:

- Atlanta--Fare evaders are prosecuted.
- Boston--Fare evaders can be prosecuted, but usually as a secondary charge to another charge.
- Chicago--Fare evaders are prosecuted and treated as any theft offender.
- Los Angeles--The court system is used. Citations are issued and the offender must appear in court. If they fail to appear, they can be arrested.
- Milwaukee--Under state law, fare evaders can be prosecuted.
- Portland--Fare evaders are prosecuted. However, the first step is a citation, followed by exclusion, then prosecution for criminal trespassing.

TREND ANALYSIS AND PLANNING

Very few survey respondents indicated that they perform trend analysis or other planning exercises to identify and deal with fare collection policy problems.

Tri-Met analyzes citations and warnings by time of day, location, and nature of interaction. A progressive discipline process is implemented for operators who experience excessive numbers of fare disputes. San Diego relies on feedback from customers, drivers, and staff. This information is logged by the risk management department as part of the normal incident/accident reporting process. The information goes into a computer database that is available for analysis. Depending on the number and severity of the incidents, SDTC may discipline, retrain, or have a supervisor ride with the driver.

CHAPTER FOUR

IMPACT OF REDUCED FINANCIAL ASSISTANCE

Today, nearly every transit system in the country is trying to adjust and absorb a federal cut in transit spending. In fiscal year 1995, aid to transit operating budgets was $400 million, down from $710 million the previous fiscal year, and further cuts are anticipated in future years *(personal communication, K. Greene, Vice President of Marketing, GFI Genfare, Inc.).*

In order for U.S. transit agencies to maintain current service and to expand service based on current plans, they will need $37 billion annually in total funding from 1995 through 2004, according to a report by the American Public Transit Association. This amounts to an annual average of $23.1 billion for operations and $13.9 billion for capital investments (6).

The tightening financial situation makes fare collection increasingly important as transit agencies seek ways to make up the lost funding from other sources *(7).*

PLANNED OR ANTICIPATED CHANGES IN FARES

Most of the survey respondents indicated that reduced financial assistance would result in fare increases to balance operating funds, although there was no specific information in most cases.

The MTA in Mobile, Alabama presents an interesting case study *(5).* The MTA was in trouble before the federal cuts, but had to go further than most in trimming its service. The transit authority ended up cutting 22 percent of its service. The state of Alabama does not offer any support for public transit, and no taxes specifically pay for the Mobile transit system, which receives funds only from the city and the federal government. As a result, Mobile has been decreasing service for years and has lost half its riders since 1986, down to about 4,500 a day. Last year the fare was $1.00, and this year the fare is $1.25. In July 1995, the system shut down for 6 weeks because the expenses were running about $4.2 million and revenues were only $3.7 million.

Over the years, the bus system has tried to raise revenues by selling advertising space on the sides of the buses to various companies. But most companies are not willing to pay what the agency charges them.

The problem in Mobile, as David Warren, manager of the transit authority sees it, is that the bus system is being used mainly by people who earn little and cannot afford cars. The people who work for Mobile's big employers, such as the paper mills, chemical plants, and shipyards generally drive to work and the large employers do not press for public transportation.

For some, the federal cuts raise questions about how government will provide for the people who depend on public transportation. In Mobile, and other small cities, public transportation may not exist if federal cuts continue.

PLANNED OR ANTICIPATED CHANGES IN FARE COLLECTION POLICY

MARTA has studied various alternatives to its current fare structure, specifically fares based on distance, time of day, types of service, and others. The results of these studies led MARTA to maintain its relatively simple fare structure and add smart card readers to many rail station faregates. The agency hopes this strategy will eliminate enough cash and token transactions to reduce handling costs.

Riverside Transit Agency in California sees simplification of a complex zone fare structure as an anticipated change, as does San Diego Transit Authority. MBTA also wants to keep it simple. They are adding TVMs to the subway as a way to increase the distribution of passes.

Los Angeles County MTA had a different view of the changes in fare policy. The respondent indicated a desire to see smart card systems increase, to simplify the fare collection process. LACMTA indicated that this advanced technology may help with enforcement issues, especially internal theft.

FARE COLLECTION POLICY REVISION TO SATISFY CHANGING CLIMATE

Five of the transit agencies responded to this question. In Portland, Tri-Met's concerns over operator safety and occasional fare inspector presence on buses originally led to a deemphasis on driver enforcement responsibility. MBTA stated that more police presence would be needed, especially at subway stations and bus terminals. LACMTA stated that general social conditions have forced an increased emphasis on enforcement. San Diego Transit Authority states that unemployment will increase fraud and evasion and require more intervention in disputes between drivers and customers. CTA's respondent indicated they expect the new automated system to result in fewer disputes between operators and passengers.

CHAPTER FIVE

CONCLUSIONS

Transit agencies use diverse methods to inform customers of transit fares, to collect fares, and to enforce fare policies. In general, agencies responding to the survey conducted for this synthesis appear to be satisfied with the ways customers receive transit fare information and how bus operators are trained to collect fares and enforce fare policies.

From the information gathered for this synthesis, the following conclusions can be drawn:

- Larger agencies, such as the Los Angeles County Metropolitan Transportation Authority, have a more detailed training program than smaller agencies.
- All of the training given to drivers is done by the agencies themselves. In general, no external companies are used.
- The frequency of fare disputes is related to the complexity of an agency's fare policy; transfers are a frequent source of conflicts.
- Respondents expressed a preference for simplified fare polices.
- In general, all survey respondents indicated that the operators are taught to make a "reasonable effort" to collect the fare and if a problem arises, supervisors or police officers are called to the scene.
- Estimated revenue loss is difficult to pinpoint at any agency. Estimates put forth were merely educated guesses.
- Very few respondents indicated that they perform any trend analysis or other planning exercises to identify fare collection policy problems.
- The majority of survey respondents anticipate fare increases because of reduced financial assistance.

Some areas where future study could be useful include:

- Transit agencies are making large investments in automated fare collection because they believe it will reduce fraud and reduce the potential for passenger-driver disputes. A costbenefit analysis could be useful to agencies considering such an investment.
- Since very few respondents indicated that they perform any trend analysis, a methodology that transit agencies could use to identify fare collection policy problems could be helpful.

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APPENDIX A

Survey Questionnaire

TCRP PROJECT J-7, SYNTHESIS TOPIC SA-08
BUS TRANSIT FARE COLLECTION POLICIES AND PRACTICES
QUESTIONNAIRE

Bus transit fare collection policies and practices vary among agencies. Understanding fare collection policies is important to the users (the public), as well as to the drivers, and management of the transit system. In addition the importance of fares to the overall operation and management of the system is increasing due to changes in federal, state and local operating subsidies. There are also issues related to fare evasion, conflicts with drivers, and even incidents of violence.

What We Want to Know. The Transportation Research Board wishes to collect information from your agency on how you collect fares, fare evasion problems, conflicts arising over fare collection and how to resolve them, and changes in technology

How We Want to Know It: You can complete much of the questionnaire by simply checking off your preferences. However, fare policies have many surprises, so many of the questions are "open ended", and have space for you to add information -- feel free to add pages and whatever additional comments you wish. If you have already-produced materials such as reports and forms that would cover these types of questions, please feel free to attach those documents to make this exercise more convenient. We also invite you to submit comments and additional information such as rule books, samples of fare media, advertising samples, training syllabuses, etc

Fare collection cuts across many lines of authority For example, Sections B, C, and F may best be answered by driver training personnel while Section D may best be answered by maintainers or treasury (depending where fare collection systems are taken care of) We appreciate your enlisting the help of "the right people" to answer the questionnaire fully

Please send your completed questionnaire by March 29, 1996, to the address below. If you have any questions, please feel free to contact myself, Rick Stem, at 513-729-1051 (by fax to 513-729-0350 or Internet e-mail to STERN_RICHARD@BAH.COM) You may also contact Donna Vlasak or Sally Liff at the Transportation Research Board, 800-424-9818 or 202-334-2974

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TCRP PROJECT J-7, SYNTHESIS TOPIC SA-08
Bus TRANSIT FARE COLLECTION POLICIES AND PRACTICES
QUESTIONNAIRE

Your Name: _____
Your Title: _____
Organization Name: _____
Telephone: _____ Address: _____

A. BACKGROUND INFORMATION:

We are asking for this background information to obtain a profile of respondents. If it's not readily available skip this section and we will use 1993 Section 15 (National Transit Database) information.

1. How many revenue vehicles do you have (Write in boxes)?

Bus	
Heavy Rail (e.g. Rapid Transit subway or elevated)	
Light Rail	
Paratransit	
Other (Describe service type)	

2.. How many annual unlinked passenger boardings:

Bus	
Heavy Rail	
Light Rail	
Paratransit	
Other (Describe service type)	

3. Annual Passenger Revenue:

Bus	
Heavy Rail	$
Light Rail	$
Paratransit	$
Other (Describe)	$

B. FARE COLLECTION POLICIES AND PRACTICES

4. Customer Information. Do you provide customers with information on how to pay the fare (e.g. how to use the farebox, tickets, passes, etc.)
   - ❑ Advertising
   - ❑ Special brochures and pamphlets
   - ❑ Part of system map
   - ❑ Other (Please describe)_____
   - ❑ Signs and notices posted on the bus
   - ❑ Internet

   Please provide samples of this customer information.

5. Please describe the training provided to your drivers on how to collect fares _____

   Please provide samples of written material you give to drivers on fare collection practices.

6. Are other transit agency personnel involved in collecting fares from passengers (ticket agents, rapid transit agents, customer service centers, etc)?
   - ❑ Yes
   - ❑ No

   If YES, who are these personnel (title and brief summary of their work) _____

   Please describe the training provided to them _____

   Please provide samples of written material you provide to such employees on fare collection practices.

C. FARE POLICY

7. Do all of your services operate with an "exact fare" policy?
   - ❑ Yes
   - ❑ No

8. Please describe any services where you make change for passengers, and the procedures used on the bus and for controlling and auditing. _____

9. Besides cash, what types of fare media do you use?
   - ❑ Passes
   - ❑ Tokens
   - ❑ Individual tickets
   - ❑ Other (Describe) _____
   - ❑ Multi-ride tickets (punch tickets)
   - ❑ "stored value" tickets

10. Do any of these cause particular problems with your fare collection system or procedures?
❑ Yes ❑ No
If YES, please describe _____
_____
_____

11. Do you use machine readable passes or tickets (e.g. magnetic stripe, smart card, etc., capable of carrying electronic information)
❑ Yes ❑ No
If YES, please describe _____
_____
_____

12. Do you have any special techniques (printing, holograms, etc.) to discourage counterfeiting?
❑ Yes ❑ No
If YES, please describe, including the name of the manufacturer and any features of the anticounterfeiting material you feel are especially valuable. _____
_____
_____

13. Do you have distance based fares
❑ Yes ❑ No
If YES, how are they paid?
❑ Always paid when passengers board
❑ Paid while boarding inbound, while leaving the bus outbound ("pay in the country")
❑ Zone checks (Describe how you use them) _____
_____
❑ Other (Describe) _____
_____

14. Have you found any "best" way to collect distance based fares that minimizes problems for the driver while maximizing revenue results?
❑ Yes ❑ No
If YES, please describe _____
_____
_____

15. How are express and other premium fares collected? _____
_____
_____

If you have lower fare services that transfer passengers to higher fare expresses, do passengers have to pay the difference?
❑ Yes ❑ No
How are they paid? _____
_____
_____

16. Do you allow boarding at the rear door under any circumstances?
❑ Yes ❑ No
If YES, please describe the circumstances and how fares are paid: _____

_____

17. Does your transit agency have a “fare policy” or “standard”, e.g. a formal document, adopted by the Board or at a high management level, that sets forth how fares are to be set and changed from time-to-time?
❑ Yes ❑ No

If YES, Please describe or provide a copy _____
_____
_____

18. How does your tariff structure affect how you establish procedures for collecting and handling fares? (Please provide some examples) _____
_____
_____
_____

19. What problems has it created (if any) _____
_____
_____
_____

20. Have union rules, operating “environment” or other nonfinancial issues affected how you set fare policy (how much to charge, what fares to set, etc.)?
❑ Yes ❑ No

If YES, Explain how _____
_____
_____

D. FARE COLLECTION EQUIPMENT

21. Does your fare collection equipment limit or have other effects on how you determine what fares and fare media (e.g. passes, tickets, etc.) you can use?
❑ Yes ❑ No

If YES, Explain how _____
_____
_____

22. In buying new fare collection equipment, how did your tariff structure affect the design of the equipment or your purchase decision? _____
_____
_____
_____

23. What types of farebox do you use on fixed route vehicles (if you use more than one type of farebox, please describe on the back of the page.)
Manufacturer: Number in use: _____ Number in use: _____
Approximate age: _____
Are these fareboxes:
❑ Registering (count the money in the cashbox vault so it can be used for later audit)
❑ Nonregistering (Fareboxes provide no audit data – money simply drops into the cashbox after the driver trips the dump lever)
Please describe any significant or unusual capabilities of this equipment (special software, transfer issuing, or other, if known) _____
_____
_____
How reliable is this equipment (if known, how many average farebox failures or "trouble calls" daily).
_____

24. How large a staff ("full tune equivalents") is required to maintain your farebox "fleet" (Please include supervisory personnel who are primarily involved in fare box maintenance) _____

25. Do you plan to replace or upgrade your fare collection system in the next three years?
❑ Yes ❑ No
If YES, what change will be made and why are you making the change? _____
_____
_____

26. What improvement would you like to see in the available farebox equipment? _____
_____
_____
_____

27. Do your drivers collect information by pushing buttons on the farebox?
❑ Yes ❑ No
If YES what problems have you encountered in getting to perform this function? _____
_____
_____

Is the information they collect in this way considered accurate? _____
_____
_____

How do you monitor the drivers' performance in collecting accurate data? _____
_____
_____

Do you have any technique for improving driver performance (incentives, discipline, etc.) _____
_____
_____

Do you apply any corrective factors in using the data generated? Explain _____
_____
_____

TICKET/TRANSFER PROCESSING

28. Do you use on-bus ticket issuing or processing equipment?
❑ Yes ❑ No
If NO, skip to Question 38. If YES, which of the following capabilities does this equipment have:
❑ Issues preprinted tickets from stock Prints and issues tickets from stock -- not magnetic or otherwise encoded
❑ Read-only magnetic card reader interfaced to farebox -- reads magnetic data but does not write data or print on passengers' fare media
❑ Ticket/transfer issuance -- prints from stock and encodes magnetic media for use as transfers, zone checks and other documents.
❑ Read-write ticket processor -- processes multi-ride or "stored value" tickets.
❑ Read-write transfer processing -- checks magnetically encoded transfers as to direction, time, correct route, etc.
❑ Other capability (describe) _____
_____

29. Please indicate the manufacturer and model name/number (if known) of your ticket/transfer processing equipment: _____
How many units are **in** service? _____

30. How reliable is this equipment -- How many failures or "trouble calls" are reported daily?
_____

31. How large a staff(full time equivalents) is required to maintain this equipment? _____

32. Has this equipment been effective in reducing the frequency of driver/passenger disputes over fare matters?
❑ Yes ❑ No
If YES, describe how it has had this effect: _____
_____
_____

33. Has this equipment been effective in improving data collection
❑ Yes ❑ No
If YES, how has data collection been improved? _____
_____
_____

34. Has this equipment been effective in increasing revenue collected?
❑ Yes ❑ No
Why: _____
_____

35. What other benefits do you feel you've obtained from the equipment? _____
_____
_____

36. What problems have you had with the equipment? _____
_____
_____

37. Would you advise other transit agencies to consider similar ticket processing equipment?
❑ Yes ❑ No
Why or why not? _____
_____

38. If you don't already have ticket processing equipment on your buses do you plan to obtain such equipment in the next three years?
❑ Yes ❑ No
Why or why not? _____
_____

.OFF BOARD FARE COLLECTION

39. Do you collect fare off the vehicle through sales of fare media?
❑ Yes ❑ No
If YES, describe _____
_____

40. Do you use ticket or token vending machines (including TVMs used for rail transit)?
❑ Yes ❑ No
If NO, Skip to Question 46. If YES, Please answer questions 41 through 43.

41. What are the TVMs capabilities? _____
_____
_____

42. How many employees are required for maintenance of the TVMs? _____

43. What is the reliability of the TVMs (mean cycles between failures, or other measure as appropriate)
_____

E. REDUCED FARE ELIGIBILITY

44. How do your drivers determine that a person is eligible for a reduced fare (senior citizen, nonobvious disability, students, etc.)? _____
_____
_____

45. Do you have enforcement problems with reduced fares?
❑ Yes ❑ No
If YES, Please describe the problems and how you have addressed them: _____
_____
_____

F. FARE DISPUTES

46. What are the three most common causes of fare disputes between drivers and passengers
❑ Dispute as to proper cash fares ❑ Counterfert tickets or passes
❑ Expired or invalid passes ❑ Arguments over transfers
❑ Multi-nde punch tickets ❑ Arguments about reduced fare authorizations
❑ Single-trip tickets ❑ Problems involving multi-agency fares and jurisdictions
❑ Other (Please describe) _____
_____
_____

47. How frequently are such fare disputes reported?
❑ Daily
❑ At least weekly
❑ Monthly
❑ Other: _____

48. Have such fare disputes resulted in assaults on bus operators?
❑ Yes ❑ No

49. How many such assaults have been reported in the last year? _____

50. Please describe your policy on drivers enforcing the fare in the face of objection or challenge from a passenger: _____
_____

51. Please describe your policy on drivers enforcing the fare in cases where a passenger has failed to pay the correct amount: _____
_____
_____

Please provide copies of your printed rules on fare enforcement

52. Do you have special training programs for drivers in dealing with fare disputes?
❑ Yes ❑ No
If YES: Please provide a brief description. _____
_____
_____
(Any printed material that you have describing the program would be helpful.)

53. Do you do any after-the-fact follow-up, such as prosecution of fare offenders?
❑ Yes ❑ No
If YES please describe: _____
_____

54. Do you discipline drivers for fare disputes?
❑ Yes ❑ No
If YES, please explain _____
_____

G. FARE EVASION

55. How much revenue would you estimate you lose from fare evasion annually? _____

56. How do you determine this? _____
_____

57. What are the factors that lead to fare evasion losses (please provide some explanation):
- ❑ Certain types of fares _____
- ❑ Counterferting of fare media _____
- ❑ Abuse of transfers _____
- ❑ Other _____

58. How frequent are recorded fare evasion incidents? _____

59. What are the transit agency's fare enforcement powers? _____
_____
_____

60. Do transit police get involved in enforcement of fare evasion rules?
❑ Yes ❑ No ❑ No: Wedon't have transit police
If YES, how do they aid enforcement? _____
_____
_____

61. Do city or other sworn police get involved in fare enforcement and fare evasion incidents?
❑ Yes ❑ No
If YES, how do they get involved? _____
_____

62. Are such city police cooperative and supportive in fare enforcement issues?
❑ Yes ❑ No

63. Are magistrates cooperative and supportive in prosecution of fare evaders?
❑ Yes ❑ No

64. Do you have any special programs to obtain such cooperation from police and the justice system?
❑ Yes ❑ No
If YES, describe: _____
_____
_____

65. Transit agencies with light rail and "proof of payment" fare collection systems commonly have fare inspectors to enforce the fares. In some cases they have some duties on the buses as well. Do you have equivalent, non-police, employees that aid in enforcement of fares on buses?
❑ Yes ❑ No
If YES, describe: _____
_____
_____

66. Do you prosecute fare evaders?
❑ Yes ❑ No
If YES, describe your prosecution program _____
_____
_____

67. Describe any other form of follow up on fare evaders? _____
_____
_____

68. Do you do any trend analysis or other planning to identify and deal with fare collection policy problems?
❑ Yes ❑ No
If YES, how do you identify problem areas? _____
_____

69. Do you track the times, locations, operators or passengers involved in such incidents?
❑ Yes ❑ No
If YES, describe: _____
_____

70. Do you have any disciplinary programs for operators who experience excessive numbers of fare disputes?
❑ Yes ❑ No
Please describe _____
_____
_____

H. IMPACT OF REDUCED FINANCIAL ASSISTANCE

71. What do you see as the direction of your fare collection policy – simplifcation, increased fares, actions to improve return, etc. Please describe specifically. _____
_____
_____

72. Do you anticipate changes on fare policy (amount charged, mix of fare type, etc.) as a result of reduced financial assistance from the government?
❑ Yes ❑ No
What specific changes do you expect? _____
_____
_____

73. Do you anticipate changes in fare enforcement policy (e.g., the way fares are enforced) as a result of reduced financial assistance from the government?
❑ Yes ❑ No
What specific changes do you expect? _____
_____
_____

I. FARE COLLECTION POLICY REVISION TO SATISFY CHANGING CLIMATE

74. Over time, what changes have occurred in fare enforcement policy, and why? _____
_____
_____

You're Almost Done!!!

THE TRANSPORTATION RESEARCH BOARD is a unit of the National Research Council, which serves the National Academy of Sciences and the National Academy of Engineering It evolved in 1974 from the Highway Research Board, which was established in 1920. The TRB incorporates all former HRB activities and also performs additional functions under a broader scope involving all modes of transportation and the interactions of transportation with society. The Board's purpose is to stimulate research concerning the nature and performance of transportation systems, to disseminate information that the research produces, and to encourage the application of appropriate research findings. The Board's program is carried out by more than 270 committees, task forces, and panels composed of more than 3,300 administrators, engineers, social scientists, attorneys, educators, and others concerned with transportation; they serve without compensation. The program is supported by state transportation and highway departments, the modal administrations of the U.S. Department of Transportation, the Association of American Railroads, the National Highway Traffic Safety Administration, and other organizations and individuals interested in the development of transportation.

The National Academy of Sciences is a private, nonprofit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. Upon the authority of the charter granted to it by the Congress in 1863, the Academy has a mandate that requires it to advise the federal government on scientific and technical matters. Dr Bruce Alberts is president of the National Academy of Sciences.

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