

Transit Cooperative Research Program
Sponsored by the Federal Transit Administration
RESEARCH RESULTS DIGEST
December 1995--Number 8

Subject Area: VI Public Transit

Responsible Senior Program Officer: Gwen Chisholm Smith

Synthesis of Information Related to Transit Problems

This is a staff digest of the progress and status of TCRP [Project J-7](#), "Synthesis of Information Related to Transit Problems," for which the Transportation Research Board is the agency conducting the research. The principal investigators responsible for the project are Sally D. Liff, Manager, Synthesis Studies, Donna L. Vlasak, and Stephen F. Maher, serving under the Studies and Information Services Division of the TRB.

OVERVIEW

The Transit Cooperative Research Program (TCRP) was established in 1992. The U.S. Department of Transportation proposed the TCRP, and it was authorized in the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. On May 13, 1992, a memorandum agreement outlining operating procedures for the TCRP was executed by three cooperating organizations: the Federal Transit Administration (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 the American Public Transit Association (APTA).

SYNTHESIS PROGRAM

A storehouse of information exists on nearly every subject of concern to the transit industry. Much of this information has resulted from both research and the successful application of solutions to the challenging issues faced by practitioners in their daily work. Because previously there has been no systematic means for compiling such useful information and making it available to the entire transit community, the TOPS Committee—an independent governing board organized by TDC and designated the

TCRP Oversight and Project Selection Committee-authorized TRB to undertake a series of studies to search out and synthesize useful knowledge from all available sources and to prepare documented reports on current practices in the subject areas of concern.

This synthesis series reports on various practices, making recommendations where appropriate. Each document is a compendium of the best knowledge available on measures found to be successful in resolving specific problems.

To develop these syntheses in a comprehensive manner and to ensure inclusion of significant knowledge, TRB analyzes available information assembled from numerous sources including a large number of transit agencies.

A topic panel of experts in the subject area is established to guide the researchers in organizing and evaluating the data collected on each topic and to review the synthesis report.

For each topic, the project objectives are (1) to locate and assemble documented information; (2) to learn what practice has been used for solving or alleviating the problems; (3) to identify all ongoing research; (4) to learn what problems remain largely unsolved; and (5) to organize, evaluate, and document the useful information that is acquired.

Each 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 which is now at hand.

Studies in Progress as of December 1995

Work is currently under way on the topics listed in Table 1. Questions on these topics should be addressed to the principal project investigators, Sally D. Liff, Donna L. Vlasak, or Stephen F. Maher, who can be reached at 202/3343242.

Selection of Topics

One part of the project procedures that is not widely understood is the process for submission and selection of topics. TCRP Project Committee J-7 meets to select topics for study using funds from the upcoming fiscal year. The membership of this committee is given in Table 2. Funding has allowed for initiation of about four to six syntheses per year.

The following factors are considered in the selection process for synthesis topics:

- The problem should be widespread enough to generate broad interest in the synthesis.
- The problem should be timely and critical with respect to economic impact, safety, or social impact.
- The problem is appropriate if current practice is nonuniform or inconsistent from agency to agency, or if the validity of some practices appears to be questionable.
- The quality and quantity of useful available information should indicate a need to organize and compress that which has already been learned and written on the topic.

- The topic should not be one where ongoing research or other activities in progress might be expected to render the synthesis obsolete shortly after completion.

The continued success of this project depends on a constant supply of worthy synthesis topics. The interest of those who have recommended topics is sincerely appreciated, and they are urged to continue. Candidate topics are suggested by members of the committee and by a variety of other sources, including transit professionals, state and local government officials, equipment and service suppliers, research organizations, FTA, APTA, and TRB committees.

Available Publications

The Syntheses of Transit Practice that have been completed under this project are listed in Table 3. Copies of these Syntheses can be obtained from the Publications Office, Transportation Research Board, 2101 Constitution Avenue N.W., Washington, DC 20418. Copies may also be ordered on the Internet from the following address:

<http://www.nas.edu/trb/bookstore/menu.html>

Index to Topic Subjects

Table 4 is an index of published syntheses and topics under study.

Conduct of the Studies

Throughout the year, following the project committee's selection of topics, studies are initiated in the order of priority assigned by the committee. A panel consisting of practitioners and researchers is formed for each topic. At its first meeting, this topic panel thoroughly

discusses the topic, refines the scope, suggests sources of information, and identifies and discusses potential topic consultants.

Following this meeting, an agreement is negotiated with a consultant to gather information on the topic, synthesize it, and draft a report. Typically, the agreement covers about 50 workdays over a period of about 1 year.

Information gathering and preparation of the first draft of the synthesis report usually take from 6 to 8 months. This draft is reviewed by the topic panel with the consultant at the second panel meeting. A revised draft is then prepared by the author and reviewed by the topic panel. Subsequent drafts and meetings are scheduled if needed, although this rarely occurs.

After the topic panel is substantially satisfied with the report, a final draft is sent to the members of TCRP Project Committee J-7 for their approval. At the same time, members of the topic panel have their last chance to review the report. Comments from these reviews are incorporated into the final report, which is published as a TCRP Synthesis of Transit Practice.

Suggestions for synthesis topics may be sent to the TCRP Manager or Synthesis Staff at any time (see address on back). Topics suggested must be accompanied by a brief scope statement or discussion of the problem (a paragraph or two).

Interested in writing a synthesis? For details, contact Sally D. Liff, Donna L. Vlasak, or Stephen F. Maher at 202/334-3242.

These **Digests** are issued in the interest of providing an early awareness of the research results emanating from projects in the TCRP. By making these results known as they are developed, it is hoped that the potential users of the research findings will be encouraged toward their early implementation. Persons wanting to pursue the project subject matter in greater depth may do so through contact with the Cooperative Research Programs Staff, Transportation Research Board, 2101 Constitution Ave, N.W., Washington, DC 20418.

TABLE 1 SYNTHESIS STUDIES--In Progress as of December 1995

No.	Title
SA-4	AVL Systems for Bus Transit
SA-5	Customer Information at Bus Stops
SA-6	Passenger Transfer System Review
SA-7	Changing Roles and Practices of Bus Field Supervisors
SA-8	Bus Transit Fare Collection Practices
SC-5	Light Rail Vehicle Compression Requirements
SD-2	Rail Transit Tunnel and Underground Structures Inspection Policy and Procedures
SF-1	Bus Occupant Safety
SF-3	Methods for Reducing Violence and Improving Transit Security
SF-4	Monitoring Maintenance Performance
SG-2	Reducing Fraudulent Third-Party Claims Against Public Transit Agencies
SG-5	Managing Transit Construction Contract Claims
SH-1	Transit-Focused Development

TABLE 2 TCRP PROJECT COMMITTEE J-7

	Name	Affiliation
Chair	Jack M. Reilly	Capital District Transit Authority
Member	Gerald Blair	Indiana County (PA) Transit Authority
Member	Kenneth J. Dueker	Portland State University
Member	Alan Gibbs	National Transit Institute
Member	Henry Hide	Cole Sherman & Associates, LTD
Member	Maxine Marshall	ATE/Ryder Management
Member	Frank Martin	Metro-Dade (FL) Transit Agency
Member	Patricia McLaughlin	Los Angeles County Metropolitan Transit Authority
Member	Beverly G. Ward	University of South Florida
Member	Peter L. Shaw (Liaison)	Transportation Research Board

TABLE 3 PUBLISHED TCRP SYNTHESSES

No.	Title, Pages, Price
1.	Safe Operating Procedures for Alternative Fuel Buses (1994) 48 pp., \$16.00
2.	Low-Floor Transit Buses (1994) 44 pp., \$12.00
3.	Employee Incentive Programs to Improve Transit Performance (1994) 45 pp., \$16.00
4.	Integration of Bicycles and Transit (1994) 53 pp., \$12.00
5.	Management Information Systems (1994) 77 pp., \$19.00
6.	The Role of Performance-Based Measures in Allocating Funding for Transit Operations (1994) 52 pp., \$11.00
7.	Regulatory Impacts on Design and Retrofit of Bus Maintenance Facilities (1994) 50 pp., \$12.00
8.	Retrofit of Buses to Meet Clean Air Regulations (1994) 48 pp., \$12.00
9.	Waste Control Practices at Bus Maintenance Facilities (1995) 26 pp., \$10.00
10.	Bus Route Evaluation Standards (1995) 54 pp., \$12.00
11.	System-Specific Spare Bus Ratios (1995) 46 pp., \$12.00
12.	Transit Bus Service Line and Cleaning Functions (1995) 48 pp., \$14.00
13.	Risk Management for Small and Medium Transit Agencies (1995) 31 pp., \$13.00
14.	Innovative Suburb-to-Suburb Transit Practices (1995) 50 pp., \$14.00
15.	System-specific Spare Rail Vehicle Ratios (1995) (In press)

TABLE 4 INDEX TO SYNTHESSES AND STUDIES*

Alternative Fuel Buses	Employee Incentive Programs 3	- System-Specific Spare Ratios 15
- Safe Operating Procedures 1	Evaluation Standards	- Suburb-to-Suburb Service 14
Automated Vehicle Location (AVL) Systems SA-4	- Bus Route 10	- Tunnel and Underground Structures SD-2
Bicycles	Fare Collection, Bus SA-8	Regulations
- Integration with Buses 4	Ferries	- Air Quality 8
- Integration with Rail 4	- Bicycle Integration with 4	- Alternative Fuel Buses 1
- Integration with Ferries 4	Fraudulent Claims SG-2	- Retrofit 7, 8
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- Field Supervisors SA-7	- AVL Systems SA-4	Risk Management
- Low-Floor 2	Liability	- Small Agencies 13
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Bus Stops	- Safe Operation for Alternative Fuel Buses 1	
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- Signs SA-5	- Bicycle Integration with 4	
Claims	- LRV Compression Requirements SC-5	
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- at Bus Stops SA-5		
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- Bus 8		
- Bus Maintenance Facilities 7		
- Engines 7, 8		
- Regulatory Impacts on 7, 8		

*Simple numbers represent published syntheses; alphanumeric designations represent studies in progress.