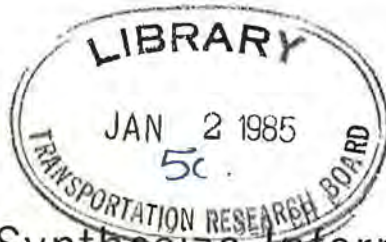


These Digests are issued in the interest of providing an early awareness of the research results emanating from projects in the NCTRP. By making these results known as they are developed, it is hoped that the potential users of the research findings will be encouraged toward their early implementation in operating practices. 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, D.C. 20418.

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Responsible Staff Engineer: Dr. Robert J. Reilly



## Project to Synthesize Information on Transit Problems

*A staff digest of the progress and status of NCTRP Project 60-1, "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 Thomas L. Copas and Herbert A. Pennock, serving under the Special Projects Division of the Board.*

### INTRODUCTION

Transit administrators, practicing engineers, and researchers are continually faced with problems on which much information already exists, either in the form of reports or in terms of undocumented experience and practice. Unfortunately, this information is often fragmented, scattered, and undervalued, and, as a consequence, full knowledge of what has been learned about a problem is frequently not brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

A vast storehouse of information exists on nearly every subject of concern to the transit industry. Much of this information resulted from research and much from successful application of the ideas of practitioners faced with problems in their day-to-day work. Because there is a need to bring such useful information together and make it available to the entire transit community, the Urban Mass Transportation Administration of the U.S. Department of Transportation has, through the mechanism of the National Cooperative Transit Research & Development Program (NCTRP), authorized

the Transportation Research Board to undertake a series of studies under NCTRP Project 60-1, "Synthesis of Information Related to Transit Problems." The purpose of the Project is to search out and synthesize useful knowledge from all possible sources and to prepare documented reports on current practices in specific areas of concern. Reports from this endeavor constitute an NCTRP report series, *Synthesis of Transit Practice*, which collects and assembles the various forms of information into single, concise documents pertaining to particular transit problems or sets of closely related problems.

### THE SYNTHESIS PROGRAM

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 measures found to be successful in resolving specific problems. The extent to which these reports are useful will be tempered by the breadth of the user's knowledge and experience in the particular problem area.

To develop these syntheses in a comprehensive manner and to ensure inclusion of significant knowledge, the Transportation Research Board analyzes available information assembled from numerous sources, including transit agencies. For each topic, a panel of experts in the subject area is established to guide the researchers in organizing and evaluating the data collected 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.

#### Available Publications and Studies in Progress

The four published Syntheses of Transit Practice that have been prepared under NCTRP Project 60-1 to date are listed in Table 1. Copies of these Syntheses can be obtained from the Publications Office, Transportation Research Board, 2101 Constitution Avenue N.W., Washington, D.C. 20418. A check or money order must accompany orders totaling \$20.00 or less.

Work is currently under way on the 9 topics listed in Table 2. Questions on these topics should be addressed to the project investigators, Thomas L. Copas and Herbert A. Pennock, who can be reached at (202) 334-3242.

NCTRP Project 60-1 is similar to a project that has operated for 17 years under the National Cooperative Highway Research Program (NCHRP). NCHRP Project 20-5 has produced a number of synthesis reports that are of interest to readers in the transit industry. These reports are listed in Table 3.

#### Submission and Selection of Topics

The American Public Transit Association (APTA) is responsible for operation of an NCTRP Technical Steering Group (TSG) comprising representatives of transit operators, local government officials, state DOT officials, and representatives from UMTA's Office of Technical Assistance.

NCTRP research programs are developed annually by the TSG, which identifies key problems, ranks them in order of priority, and establishes programs of projects for UMTA approval. Once approved, the program is referred for administration through the Transportation Research Board.

Through NCTRP's first four years, 13 synthesis topics have been referred to Project 60-1; four have been completed and nine are currently in progress.

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, 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.

Each year many more topics are considered by TSG than can be programmed for study in Project 60-1. Nevertheless, the continued success of this project depends on a constant supply of worthy synthesis topics. The interest of those who have recommended topics is appreciated, and they are urged to continue. Transit properties may submit suggestions for synthesis topics to the TSG through Mr. Deane Aboudara, Program Manager, APTA, 1225 Connecticut Avenue N.W., Washington, D.C. 20036. Topics suggested for Project 60-1 must be submitted by June 1 and be accompanied by a brief scope statement or discussion of the problem.

#### Conduct of the Studies

Throughout the year, following the selection of topics, studies are initiated in the order of priority assigned by the TSG. 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 30 to 40 work-days over a period of about one year. Information gathering and preparation of the first draft of the synthesis report usually take from 6 to 9 months. This draft is reviewed by the topic panel with the consultant at the second panel meeting. Subsequently, a revised draft is 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 NCTRP Project Committee for approval. At the same time, members of the topic panel have their last chance to review the report. Comments from this review are incorporated into the final report, which is usually published as an NCHRP Synthesis of Transit Practice.

Table 1  
COMPLETED NCTRP SYNTHESSES

No.	Title, Pages, Price
1.	Cleaning Transit Buses: Equipment and Procedures (1982) 39 pp., \$6.80
2.	Enforcement of Priority Treatment for Buses on Urban Streets (1982) 30 pp., \$6.40
3.	Diesel Fuel Quality and Effects of Fuel Additives (1984) 62 pp., \$7.60
4.	Allocation of Time for Transit Bus Maintenance Functions (1984) 25 pp., 640

Table 2  
TOPICS BEING STUDIED

No.	Title	Estimated Publication Date
TS-5	Extraboard Management: Procedures and Tools	mid '85
TS-6	Traffic Control and Regulation at Transit Stops	late '85
TS-7	Bus Communication Systems	late '85
TS-8	Passenger Information Systems for Transit Transfer Facilities	mid '85
TS-9	Transit Fare Collection - Problems with and Alternatives to Paper Currency	mid 85
TS-10	Use of Part-Time Operators	early '86
TS-11	Transit Marketing: Successes and Failures	early '86
TS-12	Use of Incentives to Attain Specified Performance Standards in Collective Bargaining for Mass Transit	mid '86
TS-13	Bus Inspection Guidelines	early '86

Table 3  
COMPLETED NCHRP SYNTHESSES  
OF INTEREST TO TRANSIT AGENCIES

No.	Title, Pages, Price
10.	Recruiting, Training, and Retaining Maintenance and Equipment Personnel (1972) 35 pp., \$2.80
11.	Development of Management Capability (1972) 50 pp., \$3.20
39.	Transportation Requirements for the Handicapped, Elderly, and Economically Disadvantaged (1976) 54 pp., \$4.40
43.	Energy Effects, Efficiencies, and Prospects for Various Modes of Transportation (1977) 57 pp., \$4.80
69.	Bus Route and Schedule Planning Guidelines (1980) 99 pp., \$8.00
72.	Transportation Needs Studies and Financial Constraints (1980) 54 pp., \$6.40
73.	Alternative Work Schedules: Impacts on Transportation (1980) 54 pp., \$6.80
74.	State Transit-Management Assistance to Local Communities (1980) 34 pp., \$6.00
75.	Transit Boards—Composition, Roles, and Procedures (1981) 24 pp., \$6.20
81.	Experiences in Transportation System Management (1981) 88 pp., \$8.40
83.	Bus Transit Accessibility for the Handicapped in Urban Areas (1981) 73 pp., \$7.60
90.	New-Product Evaluation Procedures (1982) 34 pp., \$6.80
97.	Transit Ownership/Operation Options for Small Urban and Rural Areas (1982) 28 pp., \$6.40