

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.

DIGEST 3—April 1985

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## PREDICTING AND DEALING WITH TRANSIT BUS OPERATOR STRESS

*An NCTRP staff digest of the essential findings from NCTRP Project 33-1, "Transit Bus Operator Selection and Training for Dealing with Stress," conducted by Group Associated Management Services, Inc., Detroit, Michigan, in association with Performance Technologies Corporation, Kansas City, Kansas.*

### INTRODUCTION

NCTRP Project 33-1 was initiated in response to a need to develop techniques for dealing with bus-operator stress that is likely to affect job performance. The bus operator's job includes constant contact with the public, strict schedule adherence requirements, and the physical and emotional demands of operating a large vehicle in congested traffic. Therefore, transit properties are faced with the need to select individuals, for the job, who possess the basic ability to cope in this environment. Further, many transit properties are, or are interested in, providing stress management training to both new hires and experienced operators.

### RESEARCH OBJECTIVES AND PRODUCTS

The first objective of NCTRP Project 33-1 was to develop a preliminary device (questionnaire) for predicting stress susceptibility of bus operator job applicants. Because of limited funding, validation of the stress-measurement instrument was not included in the scope of work. Such an instrument, following validation in follow-up research, could be considered for inclusion as part of typical comprehensive sets of tests given to job applicants.



Any one component of such test sets or the entire set would not be used as the sole basis for a hire/no hire decision, but would provide background information to be considered along with other aspects of the applicant's qualifications for the job. Validation is needed to confirm the basic predictive capability of the instrument and identify any population group biases. Transit properties are cautioned that legal liabilities may result from the use of an instrument to screen job applicants when the instrument has not been validated in relation to actual job performance. Therefore, in the absence of validation, transit properties should not use this instrument.

Although the project's original objective was primarily directed to the development of a device to identify stress proneness in job applicants, the researchers believe that the primary usefulness of the prediction device (following validation) should be for selecting individuals for stress management training. If a transit property has decided to conduct such training and cannot provide training to all operators, the validated device could be used to identify the more stress-prone people for early placement in the training program.

The preliminary device prepared in this research is based on components of existing and project-developed instruments. The device is a self-administered, pencil and paper device entitled "Bus Operator Inventory." The instrument consists of nine scales as follows:

1. Personal Health Scale - A checklist of ten health conditions.
2. Smoking Scale - Two questions regarding the daily frequency of smoking cigarettes, pipes, and cigars.
3. Use of Alcohol - Three questions regarding frequency of consumption of alcoholic beverages.
4. Use of Nonalcoholic Stimulants - Three questions regarding the daily frequency of drinking coffee, tea, cola drinks.
5. Personal Life Attitudes Scale - Fifteen items covering spousal and family relationships, relationships with friends, attitudes toward home, neighborhood, money.
6. Anxiety Vulnerability Scale - Twenty-five items covering feelings of nervousness, depression, worry, tenseness, relaxation, happiness.
7. Type A Scale - Fourteen items covering one's inclination to hurry, feel rushed, become annoyed and irritable, be competitive.
8. Job Attitudes Scale - Seventeen items covering satisfaction with job and pay, feelings of competence and liking for the work, attitudes toward management, coworkers, customers, equipment.
9. Union Attitudes Scale - Nine items covering satisfaction with the union, the way the union is run and its priorities, influence in the union.



In developing this preliminary device, the needs and capabilities of different size agencies, regional differences, and the make-up of the bus operator population (i.e., male/female and minorities/nonminorities) were considered. Pilot testing of the stress measurement device was conducted at six transit agencies representing small, medium, and large properties.

The second research objective was to develop training materials that would be directly useful to transit properties in modifying existing programs or in designing new programs. The Stress Management Training Program contains six modules. The first two modules are identical for both bus operators and for their supervisors and are designed to increase participants' awareness of the general nature of stress regardless of source. The purpose also is to help participants learn management strategies to prevent or reduce stress. The first module is titled "Understanding Stress," while the second module is titled "Dealing With Stress."

Of the remaining four modules, two are intended for new bus operators, and two are intended for their supervisors. In each set, the first module is titled "Understanding Bus Operator Stress," while the second is titled "Managing Bus Operator Stress." As indicated by the titles, the supervisors' and the new bus operators' training focuses on operator stress and how it can be managed within the transit work environment.

All materials needed to conduct each module are contained in the package. An introductory section is included that consists of a Program Overview, Program Management Guide, Opening Session Guide, Process Guide, Opening Exercise, and Background of the Training Program.

Although this training package was not field tested as part of this research, it is considered to have applicability in its present form. It was, however, assumed in developing the modules that the trainers who will conduct the programs will have well-developed training skills. They also should either have a basic knowledge of stress and stress management techniques, or devote the necessary effort to obtaining this knowledge.

The content and methods included in the training modules were selected based on a survey of transit industry stress management training practices and needs, on an extensive review of the stress management literature, and on contemporary principles and practices in stress management training. The purpose of this training is to help newly hired operators learn to anticipate and deal with typical stressful situations, and to help supervisors learn to recognize stress symptoms displayed by operators, and to learn how to provide guidance on appropriate courses of action.

A third objective was to compile a Stress Management Resource Guide to facilitate the identification of related references and materials. The Resource Guide is a management tool intended to help administrators design and implement a stress management program. It lists various resources that might be useful to administrators who feel that a stress management program would be helpful at their agencies. Additionally, the Guide will be useful to those conducting training in identifying available sources for obtaining the necessary background information and any supplemental materials that might be required.



The Resource Guide contains over 100 entries, divided into five major categories:

1. Training programs
2. Publications
3. Instruments
4. Media
5. Research

#### RESEARCH REPORT

A 3-volume report prepared by Group Associated Management Services, Inc., is available from the NCTRP. The first volume, "Predicting and Dealing with Transit Bus Operator Stress," includes the research report and the preliminary stress prediction device. Because the device has not been validated and is, therefore, not appropriate for use by operating agencies, this volume is not being widely distributed. However, copies are available on a loan basis from NCTRP, 2101 Constitution Avenue, N.W., Washington, D.C. 20418, to afford interested researchers access to the findings as background for future developmental work.

The second volume, "The Stress Connection - A Stress Management Program for New Bus Operators and Supervisors," contains the training modules, and the resource guide is contained in the third volume entitled, "Transit Bus Operator Stress - Resource Guide." Both Volumes II and III can be ordered from the Publications Office, Transportation Research Board, 2101 Constitution Avenue, N.W., Washington, D.C. 20418, at a cost of \$10.00 and \$5.00, respectively. Because the audience for these two volumes was considered to be relatively small, a decision was made not to publish them in the regular NCTRP series for wide distribution.

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