

These Digests are issued in the interest of providing an early awareness of the research results emanating from projects in the NCHRP. By making these results known as they are developed and prior to publication of the project report in the regular NCHRP series, 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 obtain, on a loan basis, an uncorrected draft copy of the agency's report by request to the NCHRP Program Director, Highway Research Board, 2101 Constitution Ave., N.W., Washington, D.C. 20418

## Motorists' Needs and Services on Interstate Highways

*A digest of the essential findings from the final report on NCHRP Project 7-7, "Motorists' Needs and Services on Interstate Highways," prepared by A. Kuprijanow, S. Rosenzweig, and M. A. Warskow, Airborne Instruments Laboratory.*

### THE PROBLEM AND ITS SOLUTION

*Superseded by NCHRP Rept 64*

As the projected Interstate Highway System became operational, doubts increased as to whether the ever-increasing number of motorists using the system would find adequate services along the new routes. The availability of services - ranging from the presence of highway patrols for the prevention of crime through the ability to purchase the necessities of motor travel, such as gasoline, food, and lodging - directly, or indirectly, affects the motorist's safety. Further, the availability of these services also affects the utility of the Interstate System itself. A nationwide investigation was therefore carried out to determine the services available to the driver using the Interstate System and the services that he needs or wants in the categories of:

1. Emergency—services that the motorist needs because of accidents, breakdowns, or any other unexpected circumstances.
2. Normal—services such as gasoline, food, and lodging.
3. Supplemental—desirable services that may be nonessential and whose absence would not deter the motorist from continuing. These include: rest areas, adequate information, and a choice among service types, prices, brand names, etc.

In light of the findings referred to below, the research agency has recommended that, in conjunction with a national police agency, a detailed operational study be conducted of:

1. The possibility of using STOL-type aircraft for patrol of rural Interstate Highways.
2. Better use of existing ground vehicles and personnel.
3. Use of VTOL-type aircraft for emergency ambulance service.
4. Use of the "passing motorist" as a communications channel.

It is also recommended that steps be taken to make gasoline available for 24 hours a day wherever GAS is signed by requiring that the station remain open and attended, or by providing self-service, unattended, or semi-attended gasoline pumps.

To aid in solving the service information problem, it is recommended that service information be displayed in the safety of rest areas and, if the distance between successive rest areas is too long, at selected exits. It is also recommended that considerable extension be made in the distance limitations presently imposed for signing services. One specific method of presenting the service information to the motorist could utilize standard map boards installed in rest areas and at selected exits throughout the country which would summarize for the motorist the services available within any given range. Motorists would soon come to appreciate their value.

Finally, more uniform and higher standards of driver training, requirements, testing, and levels of proficiency would greatly contribute to the safety and efficiency of traffic flow, as well as have a beneficial effect on the service problem.

## FINDINGS

Each category of service was studied to determine:

1. What is actually available for each category.
2. The magnitude of the need for each category.
3. Whether the available services satisfy the need.

### *Emergency Services*

Emergency services are reasonably adequate on Interstate Highways in densely populated or high-ADT areas, but pose somewhat of a problem in the rural areas where the ADT is low. Inasmuch as nearly 80 percent of the proposed Interstate System will be rural, this is considered a problem area.

### *Normal Services*

The Interstate motorist appears also to be reasonably well supplied with normal services based on the fact that "supply meets the demand" -- that is, commercial enterprises compete for the motorist's patronage. Based on his travel habits and preferences, he will generally find plentiful services near urban centers, but considerably less in rural areas. The only potential problem area is in rural areas where the demand for gasoline during the night is not high enough to warrant gasoline stations being open, and distances between successive stations are great.

### *Supplemental Services*

Although the present quantity and quality of rest areas along the Interstate Highways are inadequate in some areas, steps are being implemented by most states to upgrade their existing rest facilities and build new well-equipped ones along the lines of the AASHO policy. The only deficiency appears to be that there are too few accommodations for travel trailers, both in the existing and planned rest areas. Informational needs of the motorist presents a problem; it is found that the motorist considers official signing his chief annoyance when traveling. Also, signs for services, according to the motorist's indicated preferences, are not nearly sufficient. The motorist uses outdoor advertising for roadside services as an information medium. In view of the provisions of the Highway Beautification Act of 1965, it is not believed that the proposed services signing will satisfy the motorist's needs. Therefore, presentation of service information to the motorist is considered a problem area.

### APPLICATIONS

The information emanating from this study can be used by highway administrators as guidelines for up-grading services on Interstate Highways. The results are expressed in terms of principles that could be put into practice immediately and in terms of recommendations of principles, the successful implementation of which can only follow a detailed operational study. The administrator will find it relatively easy to assimilate the reported information, for the research stands alone; that is, it does not have to be combined with the results from other research in order to be applied in practice, and the results are defined explicitly enough to permit their use in practice without first having to be translated into the working tools of the practitioner. The research did not, however, contain any experimental evaluation of the findings and conclusions that would permit some assessment of the probable degree of success if applied to practice.

### *Emergency and Normal Services*

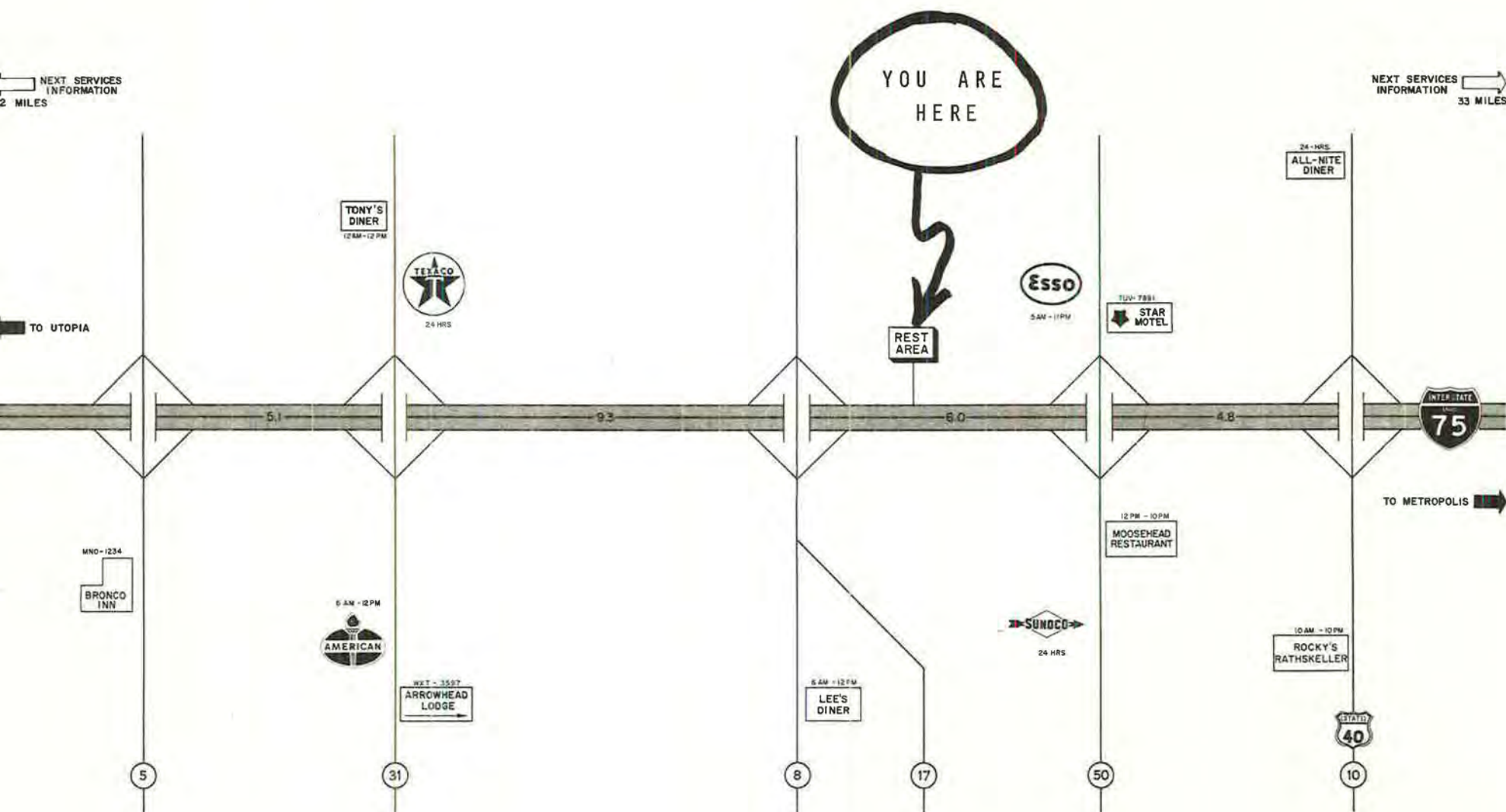
This research project was not of such extent as to permit the findings pertaining to these categories of service to be proof tested to the extent necessary to make firm recommendations for application to operating practice. Application is therefore limited to an operational experiment employing the principles detailed under "The Problem and Its Solution." An appendix of the report presents figures which may be used by highway patrol administrators for designing patrol detection systems to aid troubled motorists.

### *Supplemental Services*

Perhaps the most significant outgrowth from this project consists of the proposed use of map boards in rest areas and at selected exits throughout the country. One possible configuration is illustrated by Figure 16. It should be emphasized in particular that this concept, as distinct from those previously mentioned, is one which can be implemented generally at the discretion of the highway department as either a matter of standard operating practice or as another factor for study in an operational experiment. With the possible advent of complete removal of roadside advertising on Interstate Highways, consideration needs to be given now to an alternate means for advising the motorist of available services along his route.

NEXT SERVICES  
INFORMATION  
2 MILES

NEXT SERVICES  
INFORMATION  
33 MILES



ALL SERVICE STATIONS SHOWN ARE WITHIN 1.5 MILES OF I 75  
ALL RESTAURANTS SHOWN ARE WITHIN 1.5 MILES OF I 75  
ALL LODGINGS SHOWN ARE WITHIN 3 MILES OF I 75

FIGURE 16. SERVICES INFORMATION MAP--A SAMPLE