

Motorists Needs on Rural Freeways

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In this paper "Rural Freeways" define a controlled-access dual-lane divided highway where for all practical purposes the motorist is a captive between interchanges. When the term "Rural Freeway" is used it denotes a facility such as those recently constructed or under construction under the Interstate program. The authors do not attempt to recommend the solution of any problems resulting from the use of the rural freeways but hope to bring to your attention that which may be expected by the motorist and the degree to which services are used, when and where available.

The needs of a motorist on any trip, whether it be on a rural freeway or a secondary scenic route, depend in a large measure on the responsibility of the traveler and his evaluation of the services available. If a responsible motorist is assured of services along the route he has selected, he will incorporate those services in his trip planning. If he knows these services are not available, he will pre-plan his trip to take into consideration the nonavailability of services. On a trip to the west coast by automobile in 1923, three containers for oil, gasoline and water were carried on the running board of the car. Almost every car encountered on that trip was similarly equipped. Also carried was a tent for lodging, a gasoline stove for cooking and food. Flat tires were repaired, pumped up by hand, and minor mechanical repairs were made. There was a complete absence of roadside facilities between communities west of the Mississippi River. The motorist knew of this condition and planned accordingly.

On a trip from the west coast to Columbus several years ago none of these accessories were carried. Roadside services were relied on entirely and they were found adequate and in some cases, luxurious.

Present-day travelers have learned to expect services adequate for their needs along the routes selected for their trip. Absence of services along the routes of the rural freeway presents a problem different than those related in connection with the 1923 trip. No longer can the average motorist repair a tire or fix a mechanical failure. Many, especially the female and elderly drivers cannot change a tire. To add to the motorist's dilemma when in need of aid, there is a problem of orientation resulting from a paucity of the familiar landmarks usually encountered along a highway because most new rural freeways are on new locations avoiding areas of habitation.

There are two types of service used by the traveler and they can be defined as services of necessity and services of convenience. Services of necessity are those usually brought to the motorist needing service and include police protection and aid, disabled vehicle service, fire protection and ambulance service. Services of convenience would include those services usually obtained by the motorist by stopping at a location where the service can be obtained and include fuel, food, comfort, lodging, communications and information. Reliance on an assumed availability of services often results in problems for the motorist. If he fails to obtain fuel at locations where available, the need for fuel no longer is solved by a service of convenience but by a service of necessity because his vehicle becomes disabled for lack of fuel.

The major toll roads in this country deemed it advisable to provide services in both categories. Because of the authors' experience with the Ohio Turnpike and their belief that it presents an excellent example as a foundation for consideration of the problem of services to the motorist on a rural freeway, statistics have been used from its experience in the 4½ years of operation during which time over 50 million vehicles traveled almost 4 billion miles.

The Ohio Turnpike is a 241-mi link in a continuous toll road extending from Chicago to New York, a distance of 841 mi. Even so, the average trip on the Ohio Turnpike is only approximately 80 mi long.

In drawing mental comparisons between information relative to the Ohio Turnpike and the rural freeway, it is important to remember certain basic differences between the two. On the Ohio Turnpike there are toll plazas at 15 interchanges with state highways and two terminal plazas manned 24 hr per day, 7 days per week. There are 8 pairs of service plazas, 8 maintenance buildings and an administration building abutting the road, open 24 hr every day, and all being an integral part of the highway and each playing an important part in the plan for providing service to travelers.

Located in the administration building are two base radio stations on different frequencies. One serves the policing authority and the other serves the turnpike operations. These facilities, excepting the service plazas, and including most operational vehicles and all police vehicles, are equipped with two-way radio.

Policing on the Ohio Turnpike is by the Ohio State Highway Patrol under contract with the Ohio Turnpike Commission. The current contract provides for 74 officers including administrative personnel, 5 radio operators and 1 plain-clothesman. The primary duty of the patrol is the keeping of law and order on the turnpike and in that capacity patrolmen made 15,301 arrests and gave out 22,187 warning tickets in 1959.

While policing the turnpike they provided assistance to travelers in 12,421 instances during the same period.

Many of the patrons arrested will question the validity of including policing as a service to the traveling public but this policing has contributed substantially in making the Ohio Turnpike one of the safest highways in the nation and safety is certainly a service. When an accident does happen, patrolmen are dispatched to the scene of the accident to render all aid possible and they summon the disabled vehicle operator for his help. If an ambulance is needed, the information is relayed by radio to the appropriate interchange where the ambulance is called by public service telephone.

For purposes of providing disabled vehicle service, the turnpike is divided into 10 zones. The commission adopted standards for equipment requirements, services to be performed and prices that may be charged, and awarded contracts to qualified operators. The commission receives no remuneration from these contracts, permits free access to the turnpike and provides two-way radio for the service vehicles assigned to the turnpike. Radio base stations at operators' expense, are installed in all contract garages. This radio is on the turnpike operational frequency.

Timely detection of disabled vehicles has always been a most serious problem because a delay of short duration appears long to a person needing service especially on a cold winter night. Disabled vehicles are reported by the highway patrol, by cruising disabled vehicle service trucks, maintenance and operational personnel and often by other patrons to a service plaza, maintenance building or toll plaza. All detections are reported to one or the other of the radio base stations in the administration building depending on the radio frequency used in reporting. If not originating with the operator of the service truck, the message is relayed to him by radio advising the location of the disablement and type of disablement. He must then report an estimated time of arrival at the scene and report actual time of arrival and disposition of the disablement on completion of the call. More than 90 percent of calls are answered in less than 30 min following detection and the service is provided 24 hr every day. In 1959 these contractors handled 33,703 disablements. Leading the list of disablements were out-of-gas incidents with motor trouble a close second.

Fires on the turnpike are not a big problem in numbers of incidents but many fires are serious when they occur. More than 50 percent of the vehicular fires are a result of overheated tires caused from under inflation or improperly functioning wheel bearings.

Tire fires are hard to contain and difficult to put out. Unless equipment is available quickly on discovery, the fire spreads to the vehicle and often results in complete loss.

In Ohio a local fire protection authority has the same responsibility for a fire on the turnpike as it does on any other road within its jurisdiction. Initially the Ohio Turnpike Commission relied greatly on that source of aid. It soon became apparent that adequate service could not be provided by local authorities through no fault of their own. The Ohio Turnpike passes through jurisdictions of 56 different fire protection authorities.

In addition to access at the 15 interchanges, fire trucks are permitted to enter at the 8 maintenance buildings and at each of 8 pairs of service plazas for a total of 31 points of access. Because there are more fire protection authorities than points of access it is obvious that many authorities must travel through jurisdictions of others to reach a fire on the turnpike within their own jurisdiction. The net result is delay in reaching a fire because of excessive travel time.

Last year the commission placed in service a fire truck at each maintenance building. Commission-owned equipment responded to 189 calls in 1959 and called for assistance from local authorities in only 32 instances.

To assure prompt efficient ambulance service when needed in case of injuries or serious illness, the Ohio Turnpike Commission has made arrangements with 16 firms providing ambulance service along the route of the turnpike. An ambulance, like a fire truck, is permitted entry to the turnpike at the most convenient location. Ambulance service has been excellent and was required 218 times in 1959. The commission pays for most calls as a service to patrons and to insure the quality of service obtained.

These services just described are needed and must be provided on every highway leaving only the efficiency of the services a matter of concern.

The characteristics of a rural freeway enlarge by isolation and distance the problem of obtaining aid.

The next group of services are those previously described as services of convenience because they are usually obtained at the convenience of the traveler. There may be compelling reasons to make a hasty choice but even so the decision to obtain the service rests with the traveler.

A fuel gage registering near empty is a compelling reason to seek fuel. Fuel is available at all 16 service plazas on the Ohio Turnpike and in 1959 these stations pumped over 32½ million gallons. They are spaced on the average of 30 mi apart along the turnpike. Out-of-gas incidents required service from the disabled vehicle contractors in 1959 more often than any other type of disablement. For the months of June, July and August of 1959 every out-of-gas incident served by the disabled vehicle contractors was analyzed. There were 2,266 incidents. More than 28 percent of these incidents occurred within 15 mi after the driver had passed a service station on the turnpike. On the assumption that a gas tank has at least 1 gallon of gas when the gage shows empty and the average vehicle will travel 15 mpg, it is then reasonable to say that the gas gages of all of these 28 percent registered empty when passing a service station on the turnpike. This is a good example of the reliance a motorist places on the availability of help. If he was

certain help was not available, he would be more cautious and perhaps even carry an emergency supply as was done in 1923.

Food is definitely a service of convenience and no one will starve to death because he happens to be traveling a freeway. Approximately 12 million people are served annually in the restaurants on the Ohio Turnpike and spend about \$7 million.

In a survey made of the use of service plaza facilities on the Ohio Turnpike several years ago, it was learned there is a definite relationship between length of trip and use of plazas. On trips of 240 mi practically all cars stopped at a service plaza. On the average trip of about 80 mi more than 50 percent of the vehicles stopped. Of those stopping, approximately 75 percent bought food.

The restrooms in the service plazas are well patronized and on peak hours of peak volume days the restrooms at several plazas are inadequate to provide speedy service. The problem is currently being studied, and pedestrian counters are used to determine the use of the restrooms. There is not sufficient information at the moment to draw any definite conclusions.

The counters summarize hourly and the commission, in turn, summarizes on an 8-hr basis. The greatest demand that has been registered since the start of the survey last Thanksgiving, occurred between the hours of 3 p. m. and 11 p. m. on the Sunday following Christmas when 2,483 persons used the restrooms at one plaza. This is an average of more than 5 per minute over an 8-hr period. The survey will continue on through next summer when it may be expected that volumes on a summer Sunday will exceed those on any day influenced by a wintertime holiday.

There are no facilities for overnight lodging on the Ohio Turnpike but the use of facilities adjacent to the turnpike demonstrates the demand. As a service to the patron the commission publishes a listing of accommodations within $5\frac{1}{2}$ mi of each toll plaza and has erected signs in advance of each interchange to advise motorists of the potentialities of obtaining accommodations by listing the number of rooms within $5\frac{1}{2}$ mi of the toll plaza. To be eligible for listing, an establishment must agree not to discriminate because of race or religion, not to charge rates greater than those filed with the State Fire Marshal, to erect no advertising designed to attract attention from the turnpike and to maintain highest standards of cleanliness and sanitation. The initial edition of the listing published early in 1956 included 45 motels and hotels having a total of 937 rooms. The 1959 edition published last June listed 112 establishments offering 3,061 rooms. Additional facilities have been constructed since then and the 1960 edition will reflect the increases. Approximately 600,000 copies of the listing were distributed in 1959, most being requested from the toll collectors by entering patrons.

Telephone service is in great demand and the demand has steadily increased. Each year brings further expansion in the number of phones at the service plazas and the toll plazas. There is no way of determining, without making an actual count, the number of calls made. Many calls are charged to credit cards and some reverse the charges and that use is not reflected in the revenue from phones. On occasions coin boxes have been jammed beyond capacity putting the phone out of service. Need for additional phones has been determined by observation of the number of people awaiting the opportunity to use a phone.

Because patrons using the turnpike come in contact with a toll collector on entering and again on exiting they take the opportunity to ask any question on any subject of concern. Most frequently they are concerned with routing on leaving. To facilitate a response the commission has published routing slips to the most popular of destinations. In addition, the collectors furnish a publication, "Travel Tips," as a safety and informational service. The toll collectors are an invaluable source of information, especially to strangers in the area, and furnish weather and road condition reports not only for the Ohio Turnpike but for the Pennsylvania Turnpike and the Indiana Toll Road as well.

Services of convenience can be obtained by a traveler in most areas adjacent to the interchanges on the rural freeways, but the inconvenience and time lost in finding the service can nullify in part the advantages of time saving afforded by the rural freeways.

In summation, approximately 12 million patrons are served each year in the restaurants on the Ohio Turnpike and over $32\frac{1}{2}$ million gallons of fuel are sold annually. If these two services were not provided on the turnpike, the traffic seeking the services would be channeled to the interconnecting highways, creating in many instances local problems of congestions. Experience on the Ohio Turnpike has shown that its patrons deem services described as services of convenience to be services of necessity on a toll road and are quite critical of anything less than prime service.

Most services of convenience provide an important source of revenue to the commission and high standards of service must be maintained to insure public acceptance.