

TRANSPORTATION VERSUS SNOW

* * * *

Presentation

by

PHILLIP B. LEE

Director

Department of Traffic and Services

NEW YORK STATE THRUWAY AUTHORITY

* * * *

23RD EASTERN SNOW CONFERENCE

Travelers Research Center
Hartford, Connecticut

February 11, 1966

On Friday, January 28, a low pressure system formed over the Texas Gulf Coast and pushed rapidly northeastward where it was augmented by a similar system which had formed over the Carolina Coast on Saturday, January 29. Before the resulting snow storm ended it had dumped a heavy blanket of snow over most of the eastern seaboard. By Sunday night, January 30, the State of Virginia was, for practical purposes, closed to highway traffic. The Pennsylvania Turnpike, 360 miles long, was closed for the first time in its 26-year history. About 348 miles of the New York State Thruway were closed. Syracuse, New York, lay crippled under four feet of snow. Eight and one-half feet of snow choked Oswego, New York. Like a sprawling machine, traffic in large portions of the northeast ground to a halt. The storm, unusual in the area it covered, dramatically pointed up the crippling effects of snow on transportation that become a problem each winter for operators of major expressways.

Generally, major highways can be broken into two groups,--the State-operated routes, such as the modern Federal Interstate System, and the Authority or Commission-operated highways such as the turnpike or toll-way systems. Because of the greater control of access and operation possible on turnpikes as opposed to the older old-fashioned highways, this dissertation will concentrate on methods used to facilitate the flow of traffic during storms on the modern expressways.

All major toll facilities have communications systems linking their administrative buildings, toll areas, and most official vehicles. These systems are invariably controlled from a centralized point which allows operating officials to be in continuous contact with all involved forces, including the police patrol. The efficiency of operation of this system determines to a large extent what will happen to traffic during a severe storm. Perhaps a description of a typical storm and how it is handled on the New York Thruway can best demonstrate this point. It should, incidentally, be typical on other turnpikes.

The Thruway's first indication of possible trouble comes from snow alerts received well in advance from two sources. Its Communications Center is linked to the United States Weather Bureau by teletype and also receives forecasts from a private weather forecasting firm by teletype. The private service is tailored to the Thruway's needs, giving depths, wind force, timing, etc. by individual maintenance section across the road. When combined with the Weather Bureau reports, we have found the forecasts to be accurate enough to allow us to schedule manpower and facilities on the basis of the snow alert and subsequent follow-up reports. All reports are broadcast over the radio network to all units.

The progress of the storm is watched carefully as it approaches the Thruway. Each hour all toll interchanges are canvassed for weather conditions and temperatures. Usually the first indications of the arrival of the storm come from such roll calls.

Prior to the arrival of the storm, maintenance forces load salt, chemicals or abrasives at the maintenance yards. The selection of the material is dependent on the information furnished by the forecasters. Equipment is checked and readied, manpower planned. In the case of a major storm, sleeping facilities, such as motels along the route, are reserved for maintenance personnel.

Back at the centralized control center a prearranged procedure goes into effect. All key departments in the Authority, - Maintenance, Traffic, State Police, and Public Information, operate under full time duty-officer status. The duty-officers are, of course, familiar with the forecast and hold themselves in readiness for the storm. Well in advance of emergency conditions on the road, the Executive Duty-Officer, usually the Authority's General Manager, announces a "Snow Emergency." Duty-officers report to a "war room" located at Administration Headquarters. In the field, duty-officers representing the same key departments report to local offices in areas likely to be affected by the storm. It will be the responsibility of the latter men to evaluate conditions in the field and report to Central Headquarters.

While the storm is still in a non-emergent state, a number of procedures is put into motion at Authority Headquarters.

Provision is made for staffing the Communications Center, answering telephones, arranging for tow trucks, and supplies for service areas, and for feeding and housing personnel. The status of available maintenance equipment is posted on a special board in the "war room" and the equipment is held in readiness for shuttling from unaffected areas to those hardest hit by the storm.

While these preparations are being made, the task of disseminating information on road conditions to the public has started. Automatic telephone answering devices located in major cities along the Thruway are updated. We believe that it is imperative that potential patrons be given a factual picture of conditions and not one seen through "rose-colored" glasses. If the storm is serious, the public is warned of conditions and advised not to travel unless it is absolutely necessary. Experience has shown us that among the thousands of telephone calls answered by the machines and personally by Communications personnel, many will be placed by truck and bus operators planning scheduled runs. It is most important that this group receive the most accurate description possible as the effect of cancellation of their trips may have far-reaching consequences. The Authority has Road Condition Report Boards mounted on entry toll booths across the State. The information given on the telephones is also posted and kept updated on these boards for entering traffic.

If conditions deteriorate, greater impact will be given to the entering patron by verbal warnings issued by the toll collectors to each driver. We have found that advising patrons to check their gas and carry tire chains also adds to the message impact.

Other important means of contacting the public are the use of the Weather Bureau teletype loop and the press wire services. Special equipment in our Communications Center allows us access to the weather loop, giving us instantaneous contact with all subscribers such as radio

stations, highway departments, and others. The wire services - United Press International and Associated Press - have been most cooperative in carrying Thruway storm advice to the press media, and local radio and television stations normally broadcast all warnings immediately.

Assuming that the storm has now reached emergent proportions, the control center now moves into a new set of procedures. Having experienced eleven storms which necessitated closing portions of the Thruway, we have learned to be particularly watchful of poor visibility. Near-zero visibility has been the major factor in all of these closures. The very geometric design which makes our superhighways superior to others under normal conditions lends itself perversely to heavy blowing snow. This condition is likely to appear suddenly and catch drivers unawares. When this happens the common manifestations are multi-vehicle accidents and tie-ups. When they occur, a most critical point has been reached. The blocks must be removed immediately or, under heavy traffic loads, the road will plug completely and, in effect, close itself. Drivers caught in such circumstances abandon their vehicles and make normal snow removal impossible.

We have found that a successful method for removing such blocks is to pour tow trucks into the affected areas with instructions to move the vehicles to a safe, out-of-the-way position, or restore them to the pavement to allow them to proceed. We have prearranged agreements with our tow truck operators to perform this work at Authority expense. At the Authority's discretion, they are placed on an hourly-rental basis and no charge is made to patrons for these services. Although there is a collateral benefit in public relations as a result of this free service, it should be emphasized that this arrangement is primarily a selfish one in order that quick clearance of the roadway may be achieved.

We have now reached the point in our hypothetical storm where the most critical of decisions must be made. Shall we at this time close a portion of the road to all traffic. On the surface, such a move may well appear to be the greatest disservice one can make to travelers. It is not. If an attempt is made to keep the road open at all

costs it will, under severe conditions, close itself. If this is allowed to happen the ensuing jams caused by abandoned and disabled vehicles, and those involved in accidents, will seriously inhibit early re-opening. It follows, then, that under these circumstances it is highly desirable to effect an early closing in the expectancy of an early re-opening when storm conditions abate.

One does not simply announce that a superhighway is closed and achieve that end in the same breath. There are a number of steps which must be taken if an orderly and effective closure is to be accomplished. If we are fortunate, the closed area will be adjacent to an across-the-road barrier on one end, therein lending itself to easy blocking of entry traffic. Often, however, it is necessary to close areas far from barrier stations. The most effective method we have found, thus far, is to establish a road block at service areas adjacent to, but not directly in, the storm section. Traffic may then be shunted into the areas, which are lighted, and drivers informed of the imminent closure. Many, under these circumstances, elect to stay at the service area for the duration of the storm and special arrangements must be made for them.

Through the cooperation of the American Red Cross and Civil Defense officials, we have stockpiled blankets and cots at our service areas for this purpose. Food, unless the storm is of long duration, is generally not a problem at the restaurants. It has been our experience that stranded patrons accept such adversity in good spirit, often pitching in with helping to sweep the areas, volunteering to help serve food, and baby-sit. In a recent storm one unsung truck-driver-hero slept on a restaurant floor in order to make his sleeper cab available to a young couple who had been married that morning.

Although we feel more secure with many patrons in the warm dry areas, - incidentally, we have had up to fifteen hundred in a single unit, we are also faced with some added responsibilities. Children need diapers, diabetics insulin, and worried relatives must be reassured as to the safety and location of stranded persons. We have on occasion, used helicopters to evacuate sick patrons and rushed medicine over side routes by jeeps and other four-wheel-driven vehicles to stranded patrons.

Eventually, it may become necessary to remove patrons from the areas, especially, if the storm forces overnight stays of more than one night. With great care, they may be removed under controlled conditions to a nearby community. In this respect we have found the use of convoys to be effective. Typically, the vehicles are placed in a staggered line (to reduce rear-end collision possibility) and each driver instructed in the operation of his vehicle during the movement. Headlights are turned on, gas supplies checked, windows cleared of snow.

Led by one or more snow plows and police vehicles, the convoy proceeds with passenger cars up front and trucks bringing up the rear. Heavy tow trucks are interspersed in the convoy and at its rear for picking up stragglers. The convoy is paced by the official vehicles which prevent passing. In this fashion, we have successfully, but always with our breath held, moved five and six hundred vehicles at a time safely through serious storm conditions. It is not a step to be taken lightly - the responsibility is awesome - but it can be an effective tool under certain conditions.

Perhaps the greatest temptation in closing or re-opening sections of a limited-access superhighway - and one which can create chaos - is to consider only the conditions on the road, ignoring conditions on adjacent highways, in nearby cities, and lack of facilities in small reachable communities.

Although it may appear to be damaging to the highway's image to delay re-opening as the pavement and visibility improve, it is certainly in the public interest to plan areas of closure and re-opening on the basis of exterior conditions. We have received splendid cooperation in this respect by consulting with Civil Defense officials, city and town administrations, and police and sheriffs' departments. These groups have also proven to be invaluable in setting up emergency reception centers to house and feed stranded patrons when closures have fed them into local communities which were isolated by closed local highways.

Assuming that all has gone well, the storm has abated, the road cleared, and disabled vehicles removed, the operating officials still face one more difficult task.

If the road closure has been of some duration, literally thousands of vehicles will have gathered at the ends of the closed section awaiting the opportunity to move. This is particularly true of commercial vehicles. The drivers of these vehicles, as a matter of routine and economics, will elect to wait out the storm on a premium pay basis. The surge of traffic following opening must be carefully planned inasmuch as the highway is seldom opened under perfect weather and road conditions. Again, providing potential traffic with accurate, frank assessments of conditions is imperative. The media used to announce the closure is, of course, equally effective in alerting traffic to the re-opening.

To sum up - - I am convinced that careful preplanning and coordinated effort is vital in the operation of a superhighway under storm conditions. The responsible highway official can never allow himself the luxury of thinking of the public and his commercial accounts as an impersonal mass. He must always bear in mind that they are individuals, with personal fears, economic pressures, and individual need for safety and comfort. In this light, any reasonable expenditure of money or personal sacrifice on the part of his operating forces is justifiable.