With the present phenomenal development of our highways, coincident with the great expansion of the automobile and motor-truck business, we have an opportunity to retrieve past mistakes and to avoid new ones. We may state the general transportation situation as follows:—

1. Water transportation, not only along the coast and great lakes, but on such rivers as the Mississippi, Missouri, Ohio and many of the southern rivers has, undoubtedly, a great future and should be developed far more than has been done in the past.

2. Railway transportation for long distance business and for all carload business where there is direct track connection to the factory or warehouse of the shipper, is and always will be more economical than any form of highway traffic.

3. Highway transportation should be built up and encouraged as supplementary to railway and water transportation.

Solves Railway Terminal Problem

The motor truck is the inevitable solution of the railways terminal problem. The most serious expense connected with rail transportation is the terminal expense. From warehouse or factory to cars, and from cars to consumer, involving in the case of a large volume of the business two extra handlings of all goods and two short hauls, forms an expense item equal to the cost of hauling hundreds of miles by rail. We have no definite statistics on this subject. The railroad keeps no record of it. Too often shipper and consumer kept none. The latter make no report.

The motor truck and the automobile extend the zone of territory tributary to the railroads. With the improvement of roads radiating out from railway stations, the use of motors, either on regular routes or privately owned by farmers and shippers, will place the man who is twenty miles away in as good position as was the man who under old conditions lived four or five miles away.

In metropolitan districts the motor truck has a great advantage over the railroad in quickness of delivery and probable economy on hauls of packages and less than carload freight for distances of twenty to seventy or eighty miles. Here the cost of motor transport has to compete with the cost of transfer at each end of the line, the extra handling and the cheaper per ton mile cost of the railroad.

The question of the establishment of lines of motor trucks in competition with railways is one calling for study. Just what weight should be given to certain conditions? It must be clear that local business on a great through railroad from such cities as New York, Chicago, Philadelphia, Detroit or Cleveland to towns twenty to forty miles away may get through occasionally in one to two days, but is more likely to be from four to six days between shipper and buyer, while with motor trucks it can be delivered the day it is shipped.

The problems here are what density of traffic will justify the service, and what is a fair rate. It is equally clear that between two small cities on one direct line of railroad, where the delivery depends wholly on the schedules of the local freight trains, delay in the railroad is reduced to a minimum, and costs are smaller, so unless there is an absolute guarantee of sufficient tonnage, competition should be avoided.

Matters Requiring Further Investigation

Further investigation should be made in regard to:—

1. The cost per ton mile of railway traffic.
2. The cost per ton of transfer and handling from shipper to railroad.
3. The cost per ton of loading and transfer from railroad to consumer.
4. The cost per ton mile of motor truck hauls.
5. The difference in character and cost of packing for shipment by rail and by motor truck.
6. The effect of different grades upon cost of motor transportation.
7. The effect upon cost of motor transportation and loss of time due to differences in character of roads.
8. The effect of the introduction of the motor truck upon railroad shipments in country districts.
9. In so far as possible to secure it, the effect of the increasing use of the motor truck upon the cost of maintenance of highways.

That the mileage of improved highways is to be vastly increased within the next five years is very certain. It is equally certain that motor trucks are not only here to stay but that their use will increase many fold, and we must, therefore, build all of our trunk highways to handle this traffic. We engineers have argued to the farmer that good roads are an asset to him as they reduce the cost of hauling his crops to market. We cannot now fail to recognize that the motor truck as well as the road makes for the same result. Nor, must the maker of the truck, nor its owner, lose sight of the fact that the cost of building and maintaining the road is a part of the cost of transportation, and that the motor truck should bear its share of the burden.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

FOR the first time in the history of the American Institute of Chemical Engineers, its annual summer meeting will be held in Canada during the week of June 28th to July 4th. The formal and business sessions of the institute will be held in Montreal, after which the members will proceed to Ottawa by special train, where they will be shown several of the large chemical works located there and the various government bureaus.

Wednesday, June 30th, the party will travel by special train to Belleville, Ont., and on the following day will be entertained by the city of Belleville. There will be a motor trip to several of the chemical works situated in Hastings county. A complimentary luncheon will be tendered the institute by the Deloro Smelting and Refining Co., Ltd. The large plant of the Industrial Alcohol Co., Ltd., at Corbyville, will also be visited. In the evening a dinner will be tendered by the city and county, at which several of the leading men in the chemical industries in the United States and Canada will be present. From Belleville the party will go to Shawinigan Falls, Que., where the large electrolytic industries will be inspected. Saturday, July 3rd, will be spent in La Tuque, inspecting the large sulphate pulp mill of the Brown Co. The party will return to New York by special train.

As Canada has abundant resources for the development on a large scale of some of the most important chemical products required in commerce, it is hoped by the Canadian members of the institute that the meeting will result in renewed activity along chemical industrial lines in this country. The Canadian members are putting forth every effort to make this meeting an outstanding event in the chemical history of Canada.

QUEBEC BOARD OF HEALTH vs. HULL

IN the case of the Quebec Board of Health vs. the City of Hull, argued last week before Judge Chauvin in the Superior Court at Hull, Que., the counsel for the defence claimed that, while the Board of Health has the right to say whether a certain system of water purification is satisfactory, it has no right to dictate what particular system should be introduced. He dwelt upon the fact that samples of water taken by the board for analysis had not been taken from the source of supply, but from taps throughout the city, which he declared to be an improper practice. He stated that the city of Ottawa is using practically the same water; that there chlorination had been found satisfactory in every respect, so far as the Ontario Board of Health is concerned, but that the Quebec board insists upon filtration before chlorination. The Board of Health has the right of insisting upon a pure supply, he admitted, but he argued that it has no right to dictate the means to be employed in securing the desired degree of purification. The judge reserved his decision.