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PROCEEDINGS —

Seventeenth Annual Meeting

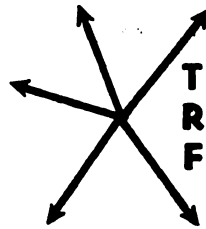
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TRANSPORTATION RESEARCH FORUM

Capital Requirements in the Railroads — The Next Twenty Years

by J. H. Spicer*

THE CANADIAN Transportation Research Forum is to be congratulated on the choice of the topic for this conference here today—all aspects of the capital required for our transportation operations over the next twenty years.

Often in the past we have seen gatherings of this kind devoted to dreaming up real and imaginary transportation needs in the future, and developing sophisticated and expensive new techniques and technology to meet them without any serious consideration being given as to how these grand projects were to be financed.

We have also seen over the past few decades vast investments in transportation systems without any apparent concern for co-ordination of modes, the setting of priorities or assessing the long-range impact of developments on the environment and supply of fuel.

In fairness to those responsible for those past decisions, it must be pointed out that they were caught up in the evolving technology of the various modes. They could not foresee all the events which would demand greater co-ordination and intermodality in the future.

Today, we are faced with the results of this lack of co-ordination in policy-making in the investment of capital in transportation services in the past. We see expensive duplication of facilities in some places and a serious deficiency of them in others. We have large public investment in infrastructure which encourage the least efficient modes of transportation in terms of fuel efficiency and the most damaging to the environment, to the detriment of other which are more effective in terms of fuel and environmental conservation.

Perhaps a conference like this twenty or more years ago would have helped us avoid some of the problems we are facing now as we realize the limitations on our fuel supplies and the need to conserve and protect our environment. Perhaps it would have helped us invest our transportation capital more wisely.

Today there is a particular urgency to the problems of finding and allocating capital for transportation systems.

We are beginning to learn the hard

way there just isn't enough money available to provide all the options for everybody. Private capital demands a fair return and reasonable security. The limits of public capital are also becoming apparent. Taxpayers are no longer prepared to share an ever-increasing burden on their incomes to support a growing number of services identified as "socially desirable."

As a result, there is a growing awareness throughout the world today that one of the major problems we face is finding the capital required to finance the rate of industrial growth and the steadily-increasing standard of living we have become accustomed to. This demand is increasing at the same time as inflation and other factors are making the accumulation of capital ever more difficult.

In other words, capital has become another one of our endangered species.

We are faced with the need, therefore, to establish priorities and make farsighted decisions in which all elements are taken into account. I feel that this conference will make a contribution towards this objective in one major field—that of transportation.

My role here today is to speak on capital over the next twenty years in the rail industry. Since there are a number of other distinguished speakers on this subject, I think it is best if we each limit ourselves to a particular aspect, and I have chosen to outline the need for capital in the rail industry over the next two decades. I will leave others to speak on aspects such as how to raise the capital, effects on balance of payments, reactions of shippers and so on, although I realize that they may wish to address themselves also to some of the points I am going to touch on.

In these days when the limits to the availability of capital are being more fully realized, I feel the first question we must ask ourselves is: Do we really need to invest any more money in rail facilities in Canada?

Would the money be better spent in terms of meeting transportation needs, conserving fuel and protecting the environment if it were devoted instead to building more highways, larger airports or extended inland waterways? Is there some new technology or technique—such as pipelines—likely to be developed over the next twenty years which will move

**Corporate Vice-President, Canadian National.*

more effectively the main commodities by rail, and thus render rail facilities largely obsolete?

Will there be, in this period, an expansion or contraction of the traffic to be handled by rail? Will new natural resources be developed in new areas or will existing ones be exhausted or have their degree of exploitation reduced?

What are the concerns for environment or fuel conservation that are likely to affect government transportation policies and the utilization of rail services?

These are questions which must be examined impartially before any major capital expenditures are made in transportation facilities in the next twenty years. They rank in importance with that basic question which must be answered before any capital dollar is ever spent—will there be a sufficient return to justify the investment?

To answer all the questions effectively we must examine the transportation challenge facing Canada over the next two decades.

We will still be faced with the problem of moving Canadians and their products across the second-largest country in the world.

It is likely that a major part of our traffic and our exports will continue to be based on natural resources which create the low-value bulk commodities which need the low-cost overland transportation that rail is best at providing. It is hoped in the future more of these natural resources will be exported in a processed form, but even if we reach the position of exporting steel or automobiles rather than iron ore we will still need rail transportation for overland movement.

As Canada becomes a net importer of oil on an ever-increasing scale, the pressures to use the most fuel-efficient modes of transportation will become ever more acute. The low resistance provided by a steel wheel moving on a steel rail is likely to become of increasing importance in saving energy in the movement of both people and freight.

The restrictions on fuel use are likely to make even more remote the possibility of developing systems which will make inland waterways usable on a year-round basis in our severe climate.

Pipelines have been developed to carry certain specific commodities such as oil and gas, but we are unlikely to see them used extensively for other commodities. Even if the technical and ecological problems of such things as slurry pipelines were solved for their use in Canada, would their benefits be so great as to justify the building of another route network to parallel that of the existing highways, rail lines and air routes?

Could we really afford this investment merely to provide another option to commodities which are already handled efficiently by existing modes?

Highway use is likely to be affected by the expected continuing increases in fuel prices and concern over air pollution.

In the line of new modes there is no indication of any new technological breakthroughs that are likely to have a major impact on the transportation scene over the next two decades. We seem to have reached a plateau in the development of new technology, and our efforts over the next few years are more likely to be devoted to refining and exploiting more effectively the modes we already have.

All of these points could be developed more fully, and may be in the discussion which follows. But I feel that on the basis of geography, climate, bulk commodities, ecological concerns and fuel and cost efficiency there will be an increasing need for investment in rail facilities and equipment in Canada over the next 20 years.

Having established the need, the next point is to make some attempt to define how much capital will be required.

If we look to the past for a moment we discover that over the 13 years from 1961 to 1974 the additions to capital investment by Canada's two major railways were in the neighborhood of three and a half billion dollars. In 1975 the capital investments by both railroads were just under \$600,000,000. These figures include investments in road property, rolling stock and machinery and equipment.

To put that in perspective we must remember that the various levels of government spend approximately two billion dollars a year on highways, a modern airport such as Mirabel costs the government close to \$1 billion, and the annual capital expenditure on major ports, the St. Lawrence Seaway and other marine facilities is more than \$60,000,000.

It is important to remember that the railway capital expenditure represents the investment not only in the rights-of-way, but also in the vehicles using them, and the terminal buildings and repair facilities required. In other words, the railway investment results in a total transportation system—not just some elements of one.

In the case of highways, airports or marine facilities further large investments are required in trucks and automobiles, in aircraft and air traffic control facilities, and in ships, pilotage services and icebreakers before the service is actually provided.

A recent study by Statistics Canada

shows that Canada's railways are responsible for more freight ton miles than any other mode—32 per cent of the total. This means that Canadians got a tremendous amount in the way of transportation services for that relatively modest investment—even if the railways themselves didn't get much of a return. And when it comes to fuel efficiency the same report which shows railways as the largest generator of freight ton miles indicates that they use only 13 per cent of the total amount of fuel required for transportation in Canada.

In planning our own capital needs at CN we find it difficult to look much more than five years ahead with any degree of accuracy. We have a detailed breakdown of our capital needs to 1980. But the fact that these are stated in constant 1976 dollars for the sake of consistency may make them seem rather conservative when the time arrives to actually spend the money.

For the period 1976-1980 we, in CN, are planning capital expenditures of \$2.4 billion dollars. Since I am in Vancouver I should point out that the major portion of this will be spent in Western Canada because that is where the largest traffic increases are expected. We are planning for continued large scale growth in movements of coal, sulphur, and potash and to a lesser degree in grain and lumber.

Before I go on to explain this figure in detail I should perhaps refer to a figure of \$5 billion which we used some two years ago when talking about our capital needs. That projection which had made some attempt to take future inflation into account was based on the higher average rate of increase in the GNP we were experiencing then, and before the full impact of the recession was assessed. We were looking towards double-tracking large portions of our main lines at that time.

Since then we have had to face the effects of the recession, and the reduced increase in the annual GNP growth that has affected most of our customers. We have had to adapt our plans to maximize the efficiency of a single-track railway with double tracking only at the points where to fail to do so would create serious bottlenecks. Full double tracking, which would result in a substantial increase in capacity, will have to be spread over a much longer period, and indeed may never be required in the 20-year time frame we are examining.

The basic thrusts of our capital planning for the next five years are, therefore, to maintain the essential plant to retain viable business and satisfy the re-

quirements of national policy when compensation is provided;

- to make improvements to increase productivity
- to provide for commercial growth potential
- and to provide for national expansion projects, such as development railways, when separately financed.

Of the \$2.4 billion we plan to spend, more than half will go towards plant renewal, with the rest being spent on improving productivity, providing for growth, eliminating bottle-necks related to growth and improvements required to increase the efficiency of a single-track railway.

In passing, I would like to remark that one of the problems of raising this capital is that the value of depreciation, a major source of capital, is being eroded by current high rates of inflation. In other words, the unit which was depreciated on the basis of a value of \$50,000 may take from three to ten times that amount to be replaced.

I should make clear that the figures I have given for capital expenditures relate only to the freight aspects of our CN Rail operation. We have not included anything for passenger services under these headings.

We have established that passenger train services cannot be operated on anything approaching a profit-making basis. Therefore, if they are required as part of national transportation policy they have to be provided on a separately-financed basis, with no part of the losses or capital needs being borne by the freight operations. The cross-subsidization of passenger operations by freight services only places an unfair load on the latter's rates when viewed in comparison with competitive modes which do not have to carry a similar burden.

I must also make it clear that the capital investment figures I have given do not include any expenditures required to improve the handling of export grain. The rates we receive on this commodity are fixed by law at a level which does not even cover the operating costs, let alone provide any return on investment. Therefore, capital must be provided in some way other than normal commercial yardsticks. We hope that the Snavely Commission on grain transportation costs may be able to bring some enlightenment and new approaches on this vital subject.

Looking beyond the five years I have detailed for the rest of the 20-year span, I can see no major changes in the thrusts of our capital investment. Unless there is some major decline in our traffic volumes, we would be spending approximately \$250 million dollars a year

in 1976 dollars merely for renewal of equipment, roadway, yards and other facilities:

It is very difficult to come up with meaningful figures which relate to growth.

The root of the problem is that certain major decisions on policies and priorities have to be made quickly and unequivocally by various levels of government before railroads and their customers can get on with the job of planning for future expansion.

In earlier days the providing of railway services was simpler. A natural resource was discovered. An entrepreneur moved in to develop it. Markets were established. A railway line was built to move the traffic, or an existing one was upgraded if necessary. The volume of traffic was usually not as great as we get from today's vast developments. Everyone was pretty well assured of recovering their capital costs before the resource ran out.

Now, we have much greater concern over the ownership and depletion of natural resources, and the effects of their exploitation on the environment.

Governments have taken over a great deal of the decision-making that was previously in the hands of those who owned the capital.

When a natural resource is discovered now there is no guarantee that it will be allowed to be developed even if there are markets available and entrepreneurs ready to invest their capital. The policy-makers may decide it should be kept for future generations, or that the natural beauty of the area is more important than the economic growth that would stem from its exploitation.

Even when a natural resource is being developed, we may see intervention in the development by policy-makers who object to the nationality of the entrepreneurs.

It is not my role here today to debate the pros and cons of these major issues of policy. These involve all Canadians and are properly decided by those elected to represent the will of the people.

As operators of an essential transportation service, however, we are concerned that those responsible for making the decisions must make them promptly and clearly. It is not enough for one or the other group to claim the right to make decisions. They must also discharge the responsibility of exercising that right.

It is essential that those with the responsibility for the over-all planning of resource development be fully aware that transportation services cannot be

provided overnight. Too often in the past the provision of the transportation services has not been given the full consideration it warrants. The transportation companies are expected to be ready to roll when the new plant or mine comes into production even though they may have been brought in only at a late stage of the development.

Up until now the railways have usually been able to meet the need.

One of the reasons for this is that in Canada for many years there has been a great excess of capacity on railway lines, and both major railways have been making heavy investments to increase their productivity. This has meant that the rail system has been able to meet sudden and unexpected demands without too much difficulty.

For instance the volume of export coal handled each year by both railways to the West coast has grown from almost zero to 15 million tons in the space of five years.

But the fact that this has been done once does not mean that a similar increase in this or any other commodity can be handled easily.

Railways will need from three to five years lead time to meet any new and unexpected demands of this magnitude. We will have to face the problem that we and the people developing the natural resource will be competing for part of the same limited pool of capital, the same pool of labour and the same supplies.

This is where there will have to be policy making and the setting of priorities on a co-ordinated basis. There has to be an awareness that decisions deferred can mean opportunities lost. At the present rate of inflation the postponing of the start of a project from one year to the next can mean an increase of ten per cent in the capital required.

One of the most encouraging developments in meeting these problems is the increased willingness of various levels of government to seek out and listen to the views of people actively engaged in transportation—as carriers, shippers, operators of terminal facilities or representatives of labour—in the formulation of policies. We in CN are always happy to participate in such efforts.

We feel that the exchange of views and the discussions take place at gatherings such as this one here today will enable us to understand each other's problems, and come up with solutions which will enable us to find the capital required to give Canada the transportation services it needs over the next twenty years and beyond.