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A NATIONAL TRANSPORTATION RESEARCH ORGANIZATION ALTERNATIVES AND FACTORS

by

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1.0 General

The MacPherson Commission brought a new approach to the appraisal of Canada's transportation problems. Although it had been appointed to inquire into the problem of horizontal freight rate increases, it chose to deal with it in a novel way by addressing the underlying circumstances that led the railways to apply for those increases. To do this, it had to consider all the competitive aspects of transportation that had developed over 2 or 3 decades and that had to be taken into account in setting freight rates. This was probably the first Canadian application of a research or structured approach to policy analysis in transportation.

MacPherson found competition pervasive in Canadian transportation, that competition was, by itself, the best type of regulation against unfair rate setting, and that it led to the most efficient transportation system. It concluded that overall rate regulation should be abandoned. It found that some services, particularly grain and railway passenger, were probably non-compensatory, and that carriers should be reimbursed for providing services declared to be in the public interest. Rail line redundancy was identified as a problem, and it was recommended that appropriate disposition of uneconomic branch lines should be undertaken after careful study within a larger transport context. It was considered essential that Canada's regulatory apparatus be overhauled to encourage multimodality, integration and coordination of transport. Finally, it was found that the nation needed a coherent stated national transportation policy, and that this policy should be subjected to a continuous examination through an on-going long range program.

Although the MacPherson recommendations were supported by a great number of studies, much more so than those of previous Royal Commissions, no recommendation for the establishment of a transportation research unit in government was included. It may be that this was not in line

with its thinking as far as the government role in transport was concerned. As a matter of fact, recommendations did not even include the creation of a multimodal regulatory agency. Instead, the creation of a national consultative transportation council was proposed.

The government, in 1967, introduced the **National Transportation Act** creating the Canadian Transport Commission as a multimodal regulatory agency and assigning a research function to this Commission.

The attitude of government towards transportation research in government is very much dependent on the role that it sees for itself in transport. In a pure *laissez-faire* capitalism, government sees very little requirement for research. The research function will be left to the individual firm which, in turn, will likely limit itself to research that serves management needs. The government is satisfied that this approach leads to the best overall performance of the economy and of the transportation sector. In any event, data are unavailable. At the other extreme, in a pure socialist economy, governments see themselves as managers of the economy in total, with the transportation sector only one part of this economy. Research will be undertaken at the top, so to speak, but not much will be done at the individual sector level. In a mixed economy like Canada the problem is a great deal more complex. In such a system the government lets the market make the decisions but is prepared to intervene when and if the market does not function properly or tends toward a state that is inconsistent with the national interest. In our estimation, it is in this kind of system that transportation research is the most relevant and the most useful, and where it should be the most diversified, dealing with economic and social issues as well as with technological ones. It will also involve the interplay of various actors, that is, government, shippers, carriers, public interest groups and universities, and will not be directed only at serving management needs.

2.0 The NTA and Research in a Regulatory Agency

The first Canadian multimodal economic research unit for transportation policy was set up jointly by the Board of Transport Commissioners and the Air Transport Board in the early nineteen fifties.¹ In 1954 it was transferred to the Department of Transport where it remained the principal source of policy research until the advent of the CTC Research Branch. By the end of 1969 the Transportation Development Agency had been created in Montreal and policy research in transportation "declared" to be the preserve of the Department of Transport.²

A marriage of regulation and research has caused the industry and legislators concern. In 1966, before the Standing Committee when it was debating the NTA,³ Messrs. Gordon, MacMillan and Bandeen of CN and Crump and Sinclair of CP tempered their support for an ongoing research organization with concern lest its separation from the regulatory function not be maintained. For example, Mr. Bandeen testified "We fail to see the advantage of having these two combined but, ...if they are... let us hope that they keep their two arms separate...", and "...the research portion...should be separate from the regulatory section. If it is not separated, the functions should be kept very carefully separate..."

Similarly, the CP brief stated "There is a need in Canada for a body to make continuing studies and conduct research into matters relating to all forms of transportation. With developments in transportation thus under constant study and review, it is our hope that this country can have an economic and efficient transportation system without resort to periodic Royal Commissions. It is important that care be taken that the study and research function of the Commission does not become confused with its regulatory function, nor that it results in the Commission assuming some of the functions of management." and Mr. Crump testified "I have believed that transportation as a whole - not railways but transportation as a whole - is going to require a great deal more research than has been given to it in this country. Some other countries are doing far, far more than we are. Now, this function is being given to the new commission and at the same time they have a regulatory function. The research will, of course, be of aid to them but I do not think the two mix. Research is a separate science that...would be dealt with by a separate section of the new commission and will not impinge on the regulatory section" and "(results of the research would be used)...not only by the regulatory section of the commission but I would hope by the transportation industry as a whole in Canada."

The Standing Committee members showed considerable sympathy for this perspective, to the extent that amendment of the bill to provide for an independent transportation economic research council was suggested. Mr. Pickersgill, however, seems to have carried the day with his interpretation of the "two vice presidents" structure when he stated "One of the vice presidents will deal broadly with research and will have nothing whatever to do with the regulatory function."

2.1 Research in the CTC, Advantages and Disadvantages

As was said above, Canada has a mixed economy. The role of research at the public level in such an economy

is to try to identify problem areas and to find ways to deal with these problems. Transportation policy in Canada is made up of a mixture of legislation, regulations, direct government responsibilities and interventions of a financial nature. The MacPherson Commission made a clear distinction between national policy and national transportation policy. Its philosophy, on the whole, was that there was to be as little intervention of government in the transportation system; whatever intervention there was to be would have to be justified by the national interest. This in itself would limit to a significant extent those interventions that it had been the practice to make in the name of national transportation policy, and would also limit the role of public research.

The rationale for giving the CTC the research role has been much debated since the passage of the **National Transportation Act**. Without pretending to read the minds of the people who made the decision, it seems that it was a compromise and that this compromise was a reasonable one given the conditions existing then. There were perceived advantages. One was that a research unit housed in a regulatory body would participate in the independence of that body from political interference. This, in turn, would allow the research reports to be published irrespective of so-called bad political consequences. Another was that contact with the day-to-day transportation problems faced by the Commission would help to make the research more relevant. Finally, the availability of expertise of various kinds and particularly of data, sometimes of a confidential nature, within the regulatory body would enable better documented research and higher quality results.

As a disadvantage independence can reduce sensitivity to the overall political scene and the research concerns of government as a whole. Being part of a regulatory body also imposes constraints of an operational and financial nature. It is difficult to resist pressure for providing expertise on certain regulatory matters, especially when the expertise available is limited. Efforts to maintain the separation that Mr. Pickersgill intended between the research and the regulatory functions of the Commission yielded to compromise in the short run. This has led to some confusion between research and de facto policy formulation through regulatory decision.

2.2 A Recent Review

The situation after nineteen years is reflected in the "Nielsen" report⁴ which states "Much of the CTC's research is in support of the regulatory activities of the Commission....," "Despite the original support and

enthusiasm...there has been a continual erosion of the real importance..." and "...the CTC research budget has been reduced to the point...". The fears expressed in 1966 were valid; research may be important, but regulatory decisions are invariably more urgent, and thus command first call on limited financial and personnel resources. The research process builds expertise; it was reasonable to expect commissioners to make the maximum use of the resources available.

3.0 Research in the Department

Concerns regarding the housing of a research organization in a government department have been focussed on a perception of loss of independence due to bureaucratic and political interference. In that respect, the "Nielsen" Task Force reports "There is a large body of opinion which supports the view that research carried out within the strict confines of a bureaucratic structure is of limited value..." and "Experience shows that research organizations within TC eventually become part of the bureaucratic structure and cannot retain long-term independence and objectivity." The words are rather strong, "most particularly" the reference to "objectivity", and do not recognize that the principal client of such organizations is internal, and independence is not intended.

Many of the flaws inherent in a regulatory commission domicile also apply to an operating department. The scale of the research element within the department would, however, be quite different. Even at less than 10% of the CTC, the Research Branch is represented at the senior management decision level; within Transport Canada it would be of less consequence. There are advantages and disadvantages to this. On one hand, it could never speak for itself; on the other, a powerful champion could more easily protect its resources.

4.0 A National Research Organization -- Other Options

If neither the regulatory agency nor the department constitute appropriate venues for research, what are the alternatives? There have been a variety of suggestions, most of which presumed co-existence with the CTC Research Branch. Some, from the perspective of the authors, were impossible inasmuch as they presumed government funding without the requisite financial accountability. (There have been occasions when the TUP have teetered on the edge of this abyss.) The organizational objective is, in our opinion, to protect researcher independence and objectivity while ensuring performance and financial accountability. Feasible structures (under the above

criteria) can be categorized under the National Transportation Institute, the Transportation Research Council, or the Bureau of Transport Economics models.

4.1 Transportation Institute

The National Institute is essentially a European model, particularly suited to the centrally focussed nations of Europe, South America and Africa. The national role is entrusted to a university or parapublic institution and funding may be provided by a number of interested parties (but directly and indirectly mostly by the central government). An example Canadian proposal for such a structure is that prepared by Tillo Kuhn of York University in 1968.⁵ Of this concept N.R. Crump of Canadian Pacific commented⁶ "Perhaps the Research Institute concept, used so widely in Europe, may have practical value in Canada. The institute is the forum where industry and government can co-operate with universities in interdisciplinary research programs. In this area, I understand York University is doing valuable work in arousing widespread interest in a university-based national transport institute."

In general, the National Institute model is based on research by a substantial permanent professional (non-public servant) staff.

4.2 Transportation Research Council

A National Transportation Research Council was proposed by E.W. Tyrchniewicz in 1968,⁷ and such a structure was approached by the TUP in its latter years. More importantly, the establishment of a federally funded National Transportation Research Advisory Council with a \$10 million annual budget was recommended by the "Nielsen" Task Force. "The council would be comprised of private sector (including labour), provincial and research community representatives appointed by the Minister with a small permanent staff (about 15) of highly qualified individuals to provide professional support in the form of a secretariat to the council.

"The council would rely on the established research community, including consultants and universities for input to guide its endeavours.

"Research priorities would be established by the council in accordance with broad national interests and requests by the Minister, independently of departmental influence or control...".

Such a Council structure would differ significantly from an Institute in that it represents dispersed employ-

ment of funds from a single central source while the Institute constitutes central concentration of effort utilizing funding from dispersed sources.

4.3 Bureau of Transport Economics

Among examples of Bureaux of Transport Economics (BTE), the Australian model⁸ is perhaps the most appropriate to Canada. A Bureau is an element of the government; the staff are public servants. However, the reporting relationship is such as to ensure a considerable degree of professional and administrative autonomy. In Australia the Bureau reports directly to the Minister of Transport. There may well be a guiding council with representation from industry and other levels of government, but its role is advisory. In the Australian case work undertaken by the BTE falls into four categories: projects referred by the Minister of Transport, projects developed in consultation with the Department of Transport, Federal-State councils and industry advisory bodies, ongoing information collection and dissemination, and internally generated background studies. A BTE would devote about half its budget to work by its full time staff; the other half would support university research, provide research fellowships, fund consultant studies and joint ventures, etc.

5.0 Factors Governing Success

Hybrids between the above three models are, of course, possible, and confusion of terminology is widespread (in particular, BTE type organizations are often called institutes). This leads to an appearance of consensus when none exists. G.H. Cooper interviewed 51 persons, the majority senior government and industry transportation executives,⁹ with 85% of those responding to the question favouring "an independent transportation systems research institute" with a professional staff of at least 35 carrying out "long range more speculative transportation system or policy research." Why then, with such support in influential circles, has such an organization never materialized? The reaction to specific proposals suggests that supporters of the concept may envisage quite different organizations. In particular, there are differences as to the form of organization that is most likely to succeed.

It is suggested that certain factors would govern the long term success of a Canadian transportation research organization:

- 5.1 **A Godfather** - No matter how hard management and individual researchers may try, research integrity and the commitment to publish will sometimes offend certain interests. The shelter of a strongly research-minded protector is essential.

- 5.2 **Access to Data** - Logical speculation is interesting; it may even reveal important concepts. However, one cannot justify spending public money on research where less than the best data available are used. Frequently, such data are confidential.
- 5.3 **Broad User Base** - Effective research requires stability. A good research organization is still developing after ten years; one can't hope for excellence in less than five. The focus of an individual user of research output frequently changes more rapidly than the research organization can afford to. Only a broad user base can give the stability necessary.
- 5.4 **Funding** - Access to sufficient funding is obvious. There is a "critical mass" below which one cannot maintain both the range of expertise and a reasonable mix of experienced and developing staff. Also quite obvious is the need for funding stability. Less obvious is the damage excess funding, particularly short term, can do; research organizations can rarely efficiently absorb large funding increments. Very large projects, involving large sums, should remain separate from the ongoing research program.
- 5.5 **Staff Situation** - In research, a single excellent performer can out-produce several good ones. Top research personnel are attracted by salary, security and especially the quality of the work environment and the notice paid to their work. There is also the acute problem of providing career promise while maintaining satisfactory research staff turnover. Researchers usually start as such on graduation; there must be attractive midcareer opportunities for them if they and research tire of each other.
- 5.6 **Collaborators and Variety** - Effective transportation researchers must work with and consult a wide range of practitioners and other researchers. They must also gain experience both nationally and overseas, and have access to what is done elsewhere, so that they can bring new approaches and analytical tools into play on behalf of their primary clientele.
- 5.7 **Independence** - Quality researchers will accept considerable, but not total, direction as to what they should study. Suggestions as to methodology and approach are welcome. Queries with respect to substantiation of findings are addressed seriously. However, the professional researcher considers the formulation and presentation of his/her conclusions as personal prerogative. The degree of research independence that an institution provides affects both its ability to attract the best personnel and the credibility of its output.

6.0 Alternatives Evaluation

The table below shows a subjective ranking of the five organizational alternatives discussed in this paper for each of the seven "factors for success". Others are encouraged to rank according to their perception. No conclusion is drawn; it is not the authors' intention to promote any of the alternatives, and the ranking gives no indication of clear superiority. In fact, each of the five alternatives ranks first in at least one factor.

Tentative Ranking of Research Institutional Alternatives

	Godfather	Data Access	Broad Base	Funding	Staff Situation	Collaborators & Variety	Independence
Regulatory Agency	5*	1	4	5	2	4	2
Operating Dept.	4	3	5	3	1	5	5
Council	2	5	1	2	5	1	3
Institute	3	4	2	4	4	2	1
Bureau	1	2	3	1	3	3	4

*As of 1985 this factor is low. Of course, in 1967 it was high.

7.0 Concluding Perspective

This paper discussed alternatives for a national transportation research organization that would succeed CTC Research as the principal such organization. Yet,

it should not be interpreted as implying that any single organization would be sufficient. There must be a blend of research -- industry from its perspective, different levels of government and different arms of the federal government from their perspectives, and a healthy and dispersed level of academic activity. There must also be communication between researchers with different perspectives, a role CTRF strives to satisfy. But the above cannot replace a national organization that would both perform and coordinate research.

The consensus alluded to earlier - that Canada requires a national transportation research organization - is paramount. The organizational form of such an entity is secondary. If the CTC is eliminated, CTC Research will go too, or become an orphan. Yet, its function should be continued, hopefully with substantial improvement. The choice between an appendage of Transport Canada, a council, an institute or a bureau, should be the result of careful analysis.

Endnote

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FOOTNOTES

1. Baldwin, J.R., "The Evolution of Transportation Policy in Canada", Research Seminar Paper, Canadian Transport Commission, January 1977.
2. Cooper, G.H., "The Early Days of an Experiment: Transportation Policy Research in a Regulatory Agency under the National Transportation Act of 1967", unpublished draft, September 1985.
3. Minutes of the Standing Committee on Transport and Communications, No. 24, October 13 and No. 28, October 20, 1966.
4. The Task Force on Program Review, "Economic Growth: Transportation", Minister of Supply and Services Canada, 1986, pp. 315-324.
5. Kuhn, T.E., "Proposals for Canadian Transport Institute", Vice-Presidents Committee on Canadian Transportation Studies: Third Progress Report, York University, Appendix C-2, October 1968.
6. Crump, N.R., address to Transportation Day Luncheon, Canadian National Exhibition Association, August 29, 1968, from Vice-Presidents Committee on Canadian Transportation Studies: Third Progress Report, York University, October 1968.
7. Tyrchniewicz, E.W., "Proposal for Establishing a National Transportation Research Council", Vice-Presidents Committee on Canadian Transportation Studies: Third Progress Report, York University, Appendix C-1, October 1968.
8. With an establishment of 100 persons the BTE is slightly larger but similar to the CTC Research Branch with less involvement in regulatory support, a more highly developed relationship with the states, and a different reporting relationship.
9. Cooper op.cit. Appendix E.