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RAIL COST ORDER R-6313: PARAGON OR PASSÉ?

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1.0 Introduction

Finding out what it costs to operate a particular rail service is a subject of perennial interest in Canada. Obviously our railways have a need to know, and for at least some shippers, rail costs - and their impact on rates - are an area of considerable concern.

Increased governmental involvement in railways since the 1970's has also focused increased attention on rail costs. The creation of VIA Rail, the Prairie Branch Line Rehabilitation Program, the Terra Transport "experiment", and implementation of the Western Grain Transportation Act (WGTA) are examples of Federal government involvement. Provincial governments in Ontario and Quebec are also now deeply involved through their publically funded commuter services. These public sector initiatives involve hundreds of millions of taxpayers' dollars and generate much interest in rail costs.

With the impending regulatory changes Canadian railways will probably be giving even greater attention to service costs. If intramodal rail competition increases substantially, as sought by the government's regulatory reforms, the carriers will need to monitor closely the profitability of their various traffics.

2.0 History

Railways have conducted service cost analyses for many decades, in earlier times unfettered by regulatory methodological prescriptions. For example, records show that regression analysis was being used in costing in the 1930's and possibly earlier.

Public interest and involvement in rail costs came to the fore in the proceedings of the MacPherson Commission (circa 1960), notably in the work of Hay on grain costing. The Commission's findings led eventually to our present National Transportation Act (1967) which, together with associated changes to the Railway Act, created the Canadian Transport Commission (CTC) and empowered it to regulate railway costing. This legislation also specified where and how rail costs were to be used in rate-making and in the determination of subsidies for operation of uneconomic services.

In giving effect to their regulatory costing powers, the CTC took pains to ensure that their costing prescriptions were well thought out. A Cost enquiry was held (1967 - 1969) involving extensive preparatory work on the part of a technical committee, together with a full public hearing. Participants included four railways, the ten provinces, the Canadian Industrial Traffic League, the Canadian Trucking Association, two grain groups, and several other interested parties. The eventual result was CTC Order No. R-6313, together with the important companion document "Reasons for Order No. R-6313 Concerning Costs Regulations", both dated August, 1969.

Since its original formulation, the Cost Order has evolved somewhat, partially in response to a number of major investigations, as outlined below.

2.1 Commission on Cost of Transporting Grain by Rail

In 1975 the Federal government launched a special enquiry on the above subject headed by Commissioner Carl Snavely. This proceeding arose from railway claims that the historic Crow Rates under which they were obliged to transport grain were contributing to massive financial losses. The Snavely Commission examined the relevant rail costs in a comprehensive fashion, and generally exercised a full degree of freedom in determining whether individual methodologies were appropriate for costing grain.

Commissioner Snavely concluded that the railways were, indeed sustaining substantial losses in the transport of grain. Moreover, he made a number of specific recommendations for the modification to costing methods practiced under the CTC's Cost Order, some of which were subsequently implemented.

2.2 Allowance for Income Tax in Cost of Capital

In 1977 Canadian Pacific, supported by Canadian National, applied to the CTC for amendment of the Cost Order to permit an allowance for income tax to be included in the cost of capital for all purposes of the Railway Act. At that time an allowance for income tax was permitted in the rate provisions of the Act, but not for the determination of railway subsidies pursuant to Sections 256, 258 and 261.

In 1979 the CTC held a broad ranging hearing into this matter which concluded in favor of the railways' application. The CTC decision also provided that CN should have its own cost of capital rate for certain costing purposes, rather than using CP's, as was previously required. The Cost Order was amended accordingly in 1981. In fact, a new CTC document was produced entitled "CTC Railway Costing Regulations" which replaced Cost Order R-6313. Thus R-6313 has, strictly speaking, been superceded, although in common parlance R-6313 continues to designate the CTC regulations.

2.3 Revision to Uniform Classification of Accounts (UCA)

The UCA is the primary source of financial data for costing. The original UCA was adopted in the mid-1950's and closely paralleled the system used by the ICC at that time. Among other shortcomings, it was not designed with cost finding in mind. In particular, it did not support the requirements for specificity in costing which had emerged by the 1970's. This was recognized in Commissioner Snavely's 1976 report, which recommended that the UCA be revised.

Commencing in 1977 the CTC undertook a major revision to the UCA in which Peat Marwick and the authors of this paper were extensively involved. The CTC adopted a process similar to that of the 1967 Cost Inquiry (i.e., technical committee followed by hearing). The railways (Classes I and II), provinces and grain interests were all extensively involved.

Following a relatively short hearing, the RTC adopted in 1980 a completely overhauled UCA, with implementation phased over several years. The specification of appropriate costing-related geographic cost centres for certain accounts was a matter the CTC left to the subsequent implementation activity, and which was also accomplished through a technical committee process.

2.4 Cost of Capital Investigation

The determination of the appropriate return on funds invested to provide railway service is one of the most problematic areas of rail costing. Much of the Snavely work was devoted to this subject, as were the proceedings of the Income Tax Case and even the UCA case.

In the course of the UCA Hearing the panel Chairman - Mr. E. Benson (then President of the CTC) announced that a full investigation and hearing into Railway Cost of Capital would be conducted. Again, the technical committee/hearing process was adopted, and it involved essentially the same major participants as in the UCA case.

The technical committee began work in 1981, followed by a landmark hearing of some forty-four days over a nine-month period. The CTC's decision was rendered in July, 1985 and dealt extensively with the subject issues. The CTC concluded, among other major decisions, that there should be different cost of capital rates for major service groupings where the risks of such services differed significantly.

3.0 Character

R-6313 has a character all its own.

To begin with, the Costing Regulations are concise - only five pages in length. Several key principles are enunciated, the basis of application for various sections of the Railway Act is outlined, and several procedural matters are dealt with in this short text. To a first time reader the Costing Regulations appear spare and puzzling. The puzzle requires a surprising amount of information to unravel.

The first clue to the puzzle is the "Reasons" document previously cited. This provides the necessary background to understanding at least some of the methodological maze. The next major set of clues are the railways' costing manuals. These voluminous documents describe in some detail the methods actually applied by each railway in its costing work. The costing manuals are nominally in the public domain. However, obtaining copies of them can be difficult. Another helpful reference is the UCA manual; this is readily available from the CTC at a modest price. Beyond all of this, the documentation associated with the relevant CTC investigations and decisions plays a part in the constitution of R-6313 costing.

In reality, therefore, the CTC's costing prescriptions are not to be found in a single document. Rather, one must rely upon a great deal of documentation, and in some case on precedent and interpretation to understand how the rail costing system works.

Viewed from another perspective, R-6313 might be characterized as an economist's costing system. This is exemplified in Dr. Borts' definition of variable cost, enshrined in the "Reasons", as one of R-6313's cardinal principles:

> **"Variable cost may be defined as the long-run marginal cost of output, being the cost of producing a permanent and quantitatively small change in the traffic flow of output, when all resource cost inputs are optimally adjusted to change."**

That the Cost Order should have an economics flavor is hardly an accident; some of its main architects were economists, as are many present day costing practitioners.

4.0 In Praise of R-6313

Our Canadian rail costing system is, without a doubt, ingenious. It has gained considerable stature and has earned notable plaudits in its time. Generally regarded as conceptually and methodologically superior to its U.S. counterpart, it has occasionally been touted as the world's premier costing system.

R-6313 has survived a number of searching appraisals, in which the following verdicts were rendered:

Commission on Costs of Transporting Grain by Rail

"The Commission's review and analysis of the procedures utilized by the railways to develop variable unit costs and to assign costs directly to specific services, led to the conclusion that overall these methodologies were valid for costing in general and grain costing in particular. The Commission fully agreed with the opinions expressed by representatives of the railways and the provinces that overall the methodologies employed represent a degree of sophistication and precision that puts Canadian National and CP Rail at the forefront of railway cost ascertainment."(1)

Transport Canada Review of Passenger Service Costing

"The R-6313 principles with slight modification are found to be appropriate for costing any passenger service which employs existing equipment and operates at approximately current speeds."(2)

In our opinion, R-6313 has a number of fortes which have contributed to its success, notably:

1. R-6313 provides the flexibility for each railway to adopt costing techniques attuned to its particular operations and systems. Generally, this results in methods which are realistic in relation to the availability and quality of data. This feature contrasts with the ICC system which aggregates data from a number of railways, producing average costs not necessarily representative of an individual carrier.

2. R-6313 provides a logical separation between accounting operations and costing operations. That is, the Canadian system starts with the recording of source data in a detailed, but not unduly complex system of accounts. It avoids - in the accounting process - the arbitrary splitting of accounts, for example as between fixed versus variable; freight versus passenger. Rather, such separations are performed through costing analyses, the results of which can be reviewed annually through imperical testing.

3. R-6313's methods are based in large part on actual railway records and data. The CTC has avoided the temptation to adopt costs based on synthesized measures such as current value cost of capital. While arguments can be made in favor of such measures, the existing approach makes for objectivity and auditability.

Finally, R-6313 has, to date, largely stood the test of time. The costing system has been used since 1969 as the basis for some billions of dollars of subsidy payments and many rate-related proceedings. It seems to have gained more universal acceptance than the U.S. counterpart "Rail Form A". While some would argue that the results have fallen well short of ideal, R-6313 has, at least dealt in a workable fashion with a highly complex and demanding costing environment.

5.0 Contrary Minded

In spite of its manifold virtues, R-6313 is not universally worshipped. In fact, it has been the target of some deprecation, particularly in recent years. Some salient complaints are outlined below.

5.1 Complexity

R-6313 methodology is sufficiently involved and complex that only a handful of practitioners really understand it. This condition is aggravated by the nature of the Cost Order's supporting documentation which, as previously explained, is difficult to assimilate.

Some features of R-6313 which contribute to the complexity include:

- Large number of account groups and cost complexes;
- Extensive use of regression analysis;
- Cost pyramiding (i.e., multiple layers of costs in which indirect costs and overheads are successively tied to direct costs);
- Technical jargon.

As a result, many seeking to understand rail costing simply give up, lost the despair of seemingly myriad intricacies.

5.2 Foreign Concepts

Some of R-6313's underlying concepts appear strange and unusual to the conventional business mind.

R-6313 identifies either variable costs or avoidable costs; fixed (or constant) costs are usually not treated. Conventional business cost accounting identifies variable costs and fixed cost (sometimes termed period costs), and includes both components.

Return on capital is included as a cost component in the R-6313 scheme, reflecting an economist's notion of cost. The traditional businessman considers cost of capital, or at least return to equity capital as profit - not a cost. The ability to treat profit as a cost puzzles the every day entrepreneur, although on second thought it may have considerable appeal!

In sum, R-6313 excludes components conventionally included, and includes components conventionally excluded.

5.3 No Reconciliation with Financial Statements

Costs derived under R-6313 cannot be entirely reconciled with the carriers' accounts and financial statements for a number of reasons:

- Costs include return to equity capital;
- Some costs are derived using a multi-year averaging process (termed normalization);

- CN has been obliged to use CP's road property investment coefficient due to lack of suitable CN road property investment data, at least until very recently.

The inability to reconcile costs with the carriers' financial statements is a significant issue in the minds of some of R-6313's critiques.

5.4 Railways have Initiative for Change

The initiative for development and selection of specific methodologies has, for the most part, been left to the railways. While the CTC can, and occasionally does initiate and mandate methodology changes, the carriers are free to propose changes and are the source of most such changes. Proposals for change which originate outside the railways are frequently lost in the shuffle.

As a case in point, Paragraph 8 of the Costing Regulations states:

> **"Whenever specific costs are known or can be readily determined from company records, such costs shall be used in lieu of averaged or allocated costs."**

While clearly a desirable principle, this particular provision has largely been applied by CN and CP to permit adopting of specific costs as they see fit. They have often done so on a selective basis. CN and CP have tended to opt for mixed specific and average costing for some types of costs. The tendency has been to identify the subsidized costs (e.g., passenger) on a specific basis, while not making a similar effort to identify and exclude the corresponding unsubsidized costs (e.g., freight). The latter are usually charged off as part of the common pool.

While CTC staff audit both railway methods and cost analysis results, a great deal of costing initiative remains with the railways. Some critics feel this is unduly beneficial to the railways' interests.

6.0 Recent Developments

Some recent developments suggest the winds of change are blowing. Initiatives for change are emerging from some highly placed sources.

Mr. Ron Lawless, Canadian National's President counselled change in the costing system as a desirable adjunct to the government's current transportation regulatory reform program.

> **"Part of the NTA overhaul should include an update of existing CTC costing procedures. Current formulas could be written into the Act along with a regular review process to ensure it remains up to date."(3)**

As we understand it, Mr. Lawless is concerned that the government currently has undue freedom in specifying how rail costs are determined and defined. For example, the new costing arrangements proposed for rail passenger service represent a departure from the railways' usual costing methods. While this is not a problem with R-6313 per se, Mr. Lawless would prefer to see the costing methodology firmly specified, and subject to change only with periodic technical reviews.

The recent CTC "Inquiry Into Railway Branch Lines" conducted by Commissioners J.M. McDonough, R.J. Orange, and D.H. Chapman considered the validity of R-6313 in determining branch line costs and concluded that R-6313's results were suspect:

> "The subsidies paid have been based on a costing system which is not solely based on site-specific and auditable branch line expenses, but rather on what might have been a questionable and perhaps an inflated cost base for branch line operations and perhaps even for mainline operations."(4)

The inquiry's report suggests that R-6313's use of averaged costs in lieu of a more detailed, specific accounting-type analysis is questionable.

> "These costs are founded on a costing methodology which is based on railway system costs modified and allocated to the branch line and the on line movements in combination with costs directly incurred thereon. One knowledgeable railway accountant said of Order R-6313 '... it is an economist's dream and an accountant's nightmare ...'."(5)

It would be incorrect to characterize these critiques as a wholesale condemnation of the CTC's Cost Order by its own commissioners. However, they did recommend that a critical review of R-6313 be undertaken.

> "We recommend strongly that the Commission conduct a review within the next twelve months of the R-6313 branch line costing methodology to ensure:
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> a) The acceptability of the methodology from an accounting point of view;
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> b) The applicability of the methodology to branch line specific costing in the context of that costing reflecting the avoidable costs of branch line abandonment; and
>
> c) Any other matter relevant to the accuracy of the methodology."(6)

Another notable recent development is contained in Bill C-97, the new "National Rail Passenger Transportation Act" which received first reading February 24, 1986. Bill C-97 makes no reference to R-6313, and incorporates a different approach to passenger costs. Unconditional compensation is provided for "direct costs" which are defined, in effect, as passenger specific costs plus a limited number of unit costs for operations considered to be directly passenger-related. Indirect costs (i.e., general administration, depreciation, cost of capital and various other overheads) are specifically excluded. However, C-97 provides for an incentive payment scheme whereby the railways can recover at least a portion (if not all) of the excluded indirect costs, provided that a reasonable standard of service performance is achieved. Compensation of constant costs is precluded under any circumstances.

The costing régime of Bill C-97 is somewhat akin to a direct cost plus overhead scheme in which compensation of overheads is contingent upon performance. Although R-6313 is not cited in C-97, the bill does not explicitly eliminate R-6313. R-6313's methodologies seem necessary to identify the direct costs and the extent of the excluded indirect costs. This situation is understandable; the architects of C-97 were not in a position to develop an entirely new costing process, and were probably not asked to do so.

7.0 What Next?

Where are we headed? The authors have no crystal ball, and can but "see through a glass, darkly". Much depends on how strong the ground-swell for change is in relation to other priorities the government and its transportation regulators must deal with. It's premature to predict future directions, but some handwriting is starting to take shape on the wall.

R-6313 was a child of our 1967 National Transportation Act, and responded to the regulatory régime and the costing needs associated with it. Major changes have occurred since that time, including the creation and maturing of VIA Rail, and resolution of the crow rate problem with implementation of the WGTA. Canada is now awaiting major transportation policy and legislation changes. These changes may require or facilitate modifications to our rail costing system. If changes are to be made, they should begin with a careful appraisal of the new legislation together with an assessment of the regulatory and commercial environment which it will create.

Apart from the above, the need for something easier to understand is apparent. In this regard, a clear and coherent documentation of the present R-6313 system would be a worthwhile step forward. Beyond this, the introduction of more direct measurement and/or accounting based methods might be welcome, providing practical solutions can be found along these lines.

Chances are something akin to conventional "direct cost plus overhead" costing may emerge when the smoke clears. But we should not expect simplicity itself; the railway business is just too complex for that.

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Rail Cost Order R-6313: paragon or passé? Clearly we do not live in a black and white world. We hold the Cost Order in high esteem, a veritable Cadillac of its time. Yet, we don't see too many 1969 Cadillacs on the streets anymore.

References

[1] Report of Commission on Costs of Transporting Grain by Rail (1976) Volume I, p. 46.

[2] R.L. Banks and Associates - Phase I Passenger Service Costing Report (August 3, 1977). It may be noted that one of the "slight modifications" suggested by Banks was the inclusion of an allowance for income tax in the Cost of Capital, an adjustment which was subsequently adopted by the CTC (see 2.2).

[3] National Transportation Act - Lawless Presents a Shopping List to Mazankowski; Motor Truck Magazine, April, 1985.

[4] Canadian Transport Commission - Report of the Inquiry Into Railway Branch Lines (June 28, 1985), pp. 35, 36.

[5] Ibid. p. 29.

[6] Ibid. p. 140.