

THE UNIVERSITY OF MANITOBA
THE ECONOMICS AND REGULATION OF COMMERCIAL AIR TRANSPORT
WITH PARTICULAR REFERENCE TO MANITOBA
AND 'THIRD LEVEL' CARRIERS

by

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ABSTRACT

The study examines the economics and regulation of commercial air transport, with particular reference to those Manitoba-based air carriers generally regarded as 'third level', and with the basic objective of considering appropriate public policy in the regulation of such carriers.

At present, no universally recognized definition of 'third level' commercial air transport exists. Concomitantly, there has been no statement of public policy regarding the regulation of this sector. Hence, the setting of some terms of reference, in defining the norms of public policy, in considering the economic implications of alternative approaches, and in defining the industry, is the task of this analysis. In brief, it is only in examining the interaction of institutional, environmental, and operational variables that the devising of regulatory policy may be pursued.

The immediate need for a proper weighting of the objectives of public policy is evident. The study places emphasis on

developing concepts of:

1. productive efficiency in a static sense
2. dynamic efficiency
3. optimum allocative efficiency
4. the proper role of competition
5. service integration
6. stability of firm operation.

In conclusion, the public policy recommendations offered imply a consideration of all these norms; yet, in the final development of policy, the role of normative judgment cannot be ignored.

The thesis draws from this broad consideration of the theoretical implications of different regulatory approaches as well as from a consideration of actual Manitoba air transport experience, and a contrast of 'third level' and 'regional' air carrier situations. An interpretation of existing regulatory influence and of the 'third level' air carrier's distinctive problem is derived. In short, it is the problem of institutional inflexibility in a dynamically fluctuating environment. In the end, a change in the direction of regulation, away from the present case-by-case consideration of individual market requirements, or 'structuralist' approach, and towards a more flexible arrangement of licensing with some degree of investment guidance, is suggested.

As a generalization, 'third level' air carriers represent a 'fringe' of Canadian domestic air transport operating in thin markets suitable to small capacity aircraft, low frequency operation, and monopolistic seller concentration. Because of their monopolistic positions, these carriers gain an importance in public policy which significantly outweighs their size. At the same time, however, the prevalence of small owner-manager enterprises in this sector has led to ad hoc, short-run, and often opportunistic behaviour by these firms consistent with their lack of specialization and stability. A general tendency to heterogeneous fleets and excess capacity is thus attributed to the industry. The need for some form of regulatory control on expansions of capacity is undeniable.

Concurrently, the volatility of seasonal demand fluctuations and of temporary demands suggests a strong need for variability in the cost structures of these firms and flexibility in their abilities to reallocate resources as demands change. To some extent, these needs are met by the operational requirements of the licence authorities under which these firms are legally allowed to provide air services.

As a result, 'third level' commercial air carriers have not experienced the critical losses associated with 'regional' air carriers in the mid-1960's and reflected in present 'regional' policy. The requirement for a different regulatory approach relative to 'regional' policy is thus established.

The emphasis here is on 'dynamic efficiency', the ability to adapt to 'exogenous' change over time in a manner which avoids serious maladjustments in individual markets. The objective set, furthermore, is the maintenance of total capacity in a 'general' equilibrium with total demand rather than on any 'partial' or individual market basis.

Present regulation operates only ambiguously and inflexibly. In interpreting the 'public interest', regulators have seen fit to concentrate most particularly on seller concentrations and the licensing of entry to individual markets. As a result, inflexibilities in reallocating resources over a system of fluctuating markets has been observed. In combination with the over-expansionary and inconsistent investment policies of these smaller firms, a tendency toward merger and consolidation activity and a lack of ability to otherwise

integrate services is noted.

As a change in public policy, therefore, it is suggested that the present policy of licensing entry to specific points on an individual trial basis be altered in favor of a more flexible arrangement. A policy which allows greater freedom in reallocating capacity among specific points and, at the same time, regulates capacity in a general equilibrium sense, i.e. in relation to some total system of markets or demands, is advocated. Such a policy should remove the problems of excess capacity attributed to the 'third level' industry. Concomitantly, increased market-orientation by the regulatory authority and the individual firms, greater inter-line co-operation, and a greater integration and rationalization of route systems can be established.

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INTRODUCTION

An economic examination of third level air carrier operations in Manitoba is, at the outset, hampered by the fact that no universally accepted or comprehensive definition of this sector of the Canadian commercial aviation industry has yet been recognized. 'Third level' is merely a notion or concept of those commercial air carriers involved both in unit toll and charter operations, whose size was not sufficient for them to be recognized as regional carriers. Recognition as 'third level' carriers has derived simply from generally held opinions by those intimately connected with the commercial air carriers.

The approach to the analysis suffers from this limitation, and, as an expedient, a close examination of the areas of only those operations in Manitoba widely recognized as third level has been undertaken. The carriers are:

1. Lambair Ltd.
2. Ilford-Riverton Airways Ltd.
- and, 3. Midwest Airlines Ltd.

The operations of these carriers are examined mainly in regard to the theoretical considerations brought forward in economic theory, in regard to existing public policy in Canadian commercial aviation, in regard to the approaches implied, and finally, in regard to those aggregative average features which are suggestive of economic conditions faced nationally by all third level carriers.

At the outset, a broad examination of economic theory is presented to identify the areas of economic analysis which apply to the operations of commercial air services. In particular, identification of those standards suggested as relevant in conceiving what the ideal third level system, from a public interest standpoint, would involve, and the forms of regulation necessary to derive such conditions, merit greatest attention.

In contrast to these theoretical standards, and in contrast to the various regulatory approaches suggested, actual Canadian commercial aviation regulatory principles are examined. The rationales for public intervention are established and corresponding legislation is examined for its consistency with such rationales. In brief, the relevant institutional framework of regulation is presented. Examination of regional

policy developments set precedents and terms of reference against which to examine third level policy requirements. As will be suggested, there are parallels in the nature of regional and third level operating circumstance and, therefore, an examination of the role of regional carriers will necessarily precede identification of the scope of third level activities. Finally, the nature of present institutional determinants of third level behaviour are examined and certain conclusions drawn as to those implicit and explicit variables which, in the presence of regulation, influence third level performance.

Following the inferences drawn from a specific examination of the named carriers' activities in meeting the requirements of the Manitoba transportation system, an extension into a more general discussion of third level economics is attempted. It is from the combinations of institutional, environmental, and operating variables, based on certain functional relationships, that the problems and choices of the regulatory authority in devising public policy to achieve optimum performance from the third level sector may be drawn.

In essence, the examination attempts to bring into the areas of discussion the relevant theoretical considerations.

In doing so, the similarities in the regional operators requirements and third level carrier operation remains an important theme. Yet, in the final result, it is the dissimilarities which suggest a different public policy approach to third level operations.

Chapter I

THEORETICAL DISCUSSIONS

A) Approaches:

'Optimum resource allocation', elusive as that concept may be, is that state towards which public policy ideally presses. In practice, however, devising the regulations or criteria which will guide the specific industry to such a standard presents a task difficult for any economist. The task set is to find ". . . the best means of allocating resources, of enhancing efficiency in the production of goods and services and of transmitting the benefits of efficiency to the public."¹ The state of 'optimum resource allocation' is defined adequately in the models or abstractions of economic theory; adapting the analysis into empirical terms, of use to public policy administrators, is the particular problem at hand. As such, however, all the relevant considerations must be brought forward. Theories are abundant; correct applications will, therefore, always require measures of discretion and judgment as to their appropriateness to the situation.

Hence, two problems in public policy may be recognized:

¹The preamble, Bill C-256, presented in the House of Commons of Canada, June 29, 1971.

1. The adaptation of the theoretical abstractions of economic analysis into 'workable' norms or standards by which to guide decision-makers in public policy; and
2. The recognition of all pertinent or relevant areas of theory in connection with the particular problem.

Although emphasis is placed on the identification of relevant theories, this present section is directed towards these two aspects of public policy in the regulation of commercial air services.

i) General Equilibrium Aspects

The significant contribution of a general equilibrium approach to questions of public policy in air transport is that it relates the 'partial' activities of sectors, industries, or markets to some designated total of overall economic performance. In transportation, such an approach implies examining the contributions of each transport mode in the satisfaction of the network of various demands, or markets, which constitute the designated transportation 'system'. Indeed, in this respect, commercial aviation may represent only a particular sector of

the transportation industry, and is to be employed, therefore, only where its basic characteristics (in cost and service dimensions) give it advantage or make it a useful alternative to other modes.

In fact, such an approach is implicitly recognized in the Federal regulation of transportation in Canada, which describes this aspect of the public interest as ". . . an economic system making the best use of all available modes of transportation . . ." ¹

Indeed, regulatory agencies have often been suspect of an overly 'endogenous' concern with the financial welfare of their constituent industry members to the neglect of outside or exogenous interests. As Caves notes, "There are . . . aspects of the Board's (CAB) decisions that suggest a friendly attitude toward the regulated carriers and an unfriendly one toward their enemies." ² A more 'general' approach in policy might serve to reveal to regulators the entirety of the economic process, which overemphasis on partial analysis may

¹Section (3), The National Transportation Act, 1967, Statutes of Canada 1967, chapter 69.

²Caves, R. E., Air Transport and Its Regulators: An Industry Study, (Harvard University Press, Cambridge, Mass., 1962) p. 275.

obscure to policy-makers.

In short, general equilibrium approaches to public policy are useful in that they indicate the wholeness of the economic process. Specifically, the following aspects are realized:

1. The public interest in allocating resources to each mode to the extent that its advantages, in cost and service dimensions, effectively suit it to service particular markets.
2. The interrelationships between markets, and between developments in substitute and complementary services.
3. The interdependencies between related sectors.

These aspects are possibly overlooked in policy formations which adhere too closely to the dictates of strictly 'partial' analysis.

ii) Paretian Welfare Aspects

Paretian welfare economics, as commonly presented, involves the stating of certain marginal conditions to derive a social welfare optimum in utility space, and, as a corollary, shows how the market structure of free competition derives such an ideal.

The concept of the optimum is the starting point in Paretian Welfare Analysis. The optimum in general equilibrium welfare economics has come to refer to three basic aspects of the performance of the economy:

1. productive efficiency.
 2. distributive efficiency.
- and, 3. allocative efficiency.

It is this third aspect which has proved so elusive, for it implies an economic condition which is the optimum from a social welfare or utility standpoint. As a result, 'Paretian optimum'¹ has generally been modified to a standard which refers to the successful achievement of the first two aspects of performance as above. However, it is important to note that there is a range of theoretical positions in utility

¹It is assumed the reader is familiar with the basic model. The marginal requirements, therefore, are only summarized:

- (a) the marginal rates of substitution between commodities must be the same for every pair of individuals (no "gains from trade" are possible).
- (b) the technical rates of substitution must be the same for all factors and commodities.
- (c) the marginal rates of transformation and the equivalent marginal rates of substitution between any two goods must be equal.

space (as represented in theory by the utilities possibilities frontier) which may satisfy these modified Paretian conditions; the social welfare optimum represents only one point on that frontier.

Public policy which moves simply to derive greater productive and distributive efficiency may succeed in meeting the requirements of the 'lesser' Pareto optimum, but it will also reflect the status quo in income distributions. It may, therefore, be far removed from the social welfare optimum as defined in utility space.¹

The particular problem in designating the welfare function, and in directing allocations towards its maximization, is the impossibility of making objective interpersonal comparisons of utility. What is therefore required is a normative

¹Such a statement deserves comment. It assumes:

- (1) that the social objectives of society can possibly be distilled through the political process from the multitude of conflicting interests - i.e. that there is some means to group consensus on ordered preferences.
- (2) that the social welfare function is an independent function; distinct from a severe social belief in the justice of initial ownership and the rights of private property to remain as accumulated.

judgment as to income distributions; and this decision, in a political environment, is often avoided. Indeed, there often seems a strong desire among North-American policy-makers to avoid such explicit value judgments, and place emphasis rather on the aspects of productive and distributive efficiency. Still, the public interest in maximizing social welfare will be difficult to attain without first placing greater effort and emphasis in attempting to detail social consensus on industrial objectives.

The application of Paretian welfare analysis to problems of regulating specific industry behaviour invariably leads to the marginal cost - pricing rule. It has also lent the competitive market more credence as the ideal market structure, or policy norm, than is perhaps warranted, ". . . there is at work a powerful disposition to favor market situations which are perfect . . . the prejudice in its favor has not altered greatly."¹

¹Hunter, A., ed., Monopoly and Competition, (Penguin Books Ltd., Middlesex, England, 1969), pp. 32-33.

The theory of Second Best,² however, has sufficiently shaken any theoretical connection between marginal cost-pricing and increased social welfare in the less-than-competitive economy. Arguments for such pricing behaviour have thus retreated into the partial analysis of Marshall and Pigou based on the loss of consumer surplus.

In short, examinations of the Paretian system reveal these two important considerations:

- (a) without proper designation of social objectives or, in theoretical terms, "the social welfare function", policy-makers will be unable to distinguish positively movements toward more socially optimal states, and
- (b) there is no necessity for employing competitive standards as ideal policy norms.

²" . . . the attainment of a Paretian optimum requires the simultaneous fulfillment of all the optimum conditions. If there is introduced into a general equilibrium system a constraint which prevents the attainment of one of the Paretian conditions, the other Paretian conditions, although still attainable, are, in general, no longer desirable." - from Lipsey, R. G., and Lancaster, K. "The General Theory of Second Best" Review of Economic Studies, vol. 24, p. 11.

These observations should by no means invalidate the usefulness of competitive market pressures for securing incentives to production efficiency and the passing of those gains on to consumers. It is merely to place the standard of perfect competition in a position of neutrality where it appears to have had strong exercise as the ideal.

Furthermore, stated objectives must be defined, policies suggested, and, then analysis employed. Hicks notes, "When the ends of the society are certain, . . . co-ordinating plans as firmly and directly as possible, has a strong case on grounds of efficiency, . . . in the ordinary pursuit of . . . economic welfare, immediate ends are likely to be much less certain . . ." ¹ Proper regulation of air transport will therefore require proper goal-definition.

The process, however, seems to have been used in reverse; an analytically ideal state is described, policy implications devised, and standards imposed. However, as Winch notes,

"What is the best policy in any instance depends upon the objective, the welfare function . . . and that function consists entirely of value judgments. The

¹Hicks, J. R., Value and Capital, (Oxford University Press, Oxford, England, 1946), p. 137.

value of applied welfare economics rests on its ability to deduce appropriate policies for any particular set of social objectives, not on its inability to obviate the need for the making of value judgements for society through the political process."¹

Arguments for the optimality of competition and the minimization of the political process may therefore have to be reconsidered.

Bator observes, "It is the central theorem of modern welfare economics that under certain strong assumptions . . . the equilibrium conditions which characterize a system of competitive markets will exactly correspond to the requirements of Paretian efficiency."² Free markets, however, may not be able to obtain Paretian optimality because of:

(1) market imperfections.

and, (2) market failures.

¹Winch, D. M., Analytical Welfare Economics, (Penguin Books Ltd., Middlesex, England, 1971), pp. 29-30.

²Bator, F. M., "The Anatomy of Market Failure" Quarterly Journal of Economics, (August, 1958), p. 351.

In the commercial air transport industry, it is evident that many of these elements¹ exist, notably:

- (1) immobile and indivisible factors of production.
- (2) direct and indirect subsidies to air carriers.
- (3) externalities.
- (4) public good characteristics.

The existence of market failure is the primary concern of welfare analysis.

Given the existence of such failures, the case for extra-market activity may be presented. A quantitative measure of the net increase in social benefit resulting from the operations of the regulatory authority² over what the free market would provide³, could give a clearer picture of the welfare gains from regulation. However, such data are

¹Plus, the possibility of areas of 'excessive' competition developing under conditions of free entry and fluctuating demands.

²i. e. The Canadian Transport Commission.

³Coase, J. "The Problem of Social Cost", Journal of Law and Economics, vol. III, 1966.