

THE UNIVERSITY OF MANITOBA

THE ECONOMIC IMPLICATIONS OF ALTERNATIVE AIR TRANSPORT REGULATORY
PRACTICES: A CANADA - UNITED STATES COMPARISON

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A dissertation submitted to the Faculty of Graduate Studies of
the University of Manitoba in partial fulfillment of the requirements
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ABSTRACT

It is often assumed that regulatory intervention is de facto effective in altering the performance of an industry, although prudent authors have noted a degree of uncertainty in the causal relationship between regulation and the industry which is being regulated. The goal of this thesis is to test the hypothesis that regulatory boards do, in fact, alter the performance of the regulated industry.

A number of methodological difficulties confront any attempt to test this hypothesis. Since many regulated industries developed within a context of regulation, it is impossible to determine precisely what the performance of the industry would have been in the absence of regulation. While various studies have sought to avoid this problem by comparing regulated with unregulated firms, this technique is impossible within the context of many industries, particularly in small countries like Canada. In order to investigate the relationship between regulatory practices and regulated firms in the Canadian air transport industry and while avoiding these methodological problems a comparison was undertaken between the Canadian industry and one which was determined to have essentially similar economic substructures: the U.S. trunk air carriers, both regulated industries.

It is argued within the confines of neoclassical microtheory, and certainly within the applied area of industrial organization, that a given market structure influences the type of conduct on the part of buyers and sellers which in turn affects the expected type of firm and market performance. Thus regulatory bodies would, by altering either the structure of the market or the conduct of the buyers or sellers, be able to influence the performance of the regulated industries. If this is the case, then to the extent that either or both structure and conduct can be controlled by a regulatory agency, we would expect evidence of influence on performance.

This line of reasoning is used to conduct an analysis of the intervention of the Canadian and U.S. regulatory bodies into their respective industries. The first step was to devise a model of the particular ways in which the regulatory bodies might be expected to intervene in the domestic trunk scheduled air passenger service, the market selected for study. In particular, the study considered which aspects of the market structure and the conduct of the air carriers would be maleable, and what outcome might be expected from intervention.

Having defined the theoretically possible areas of intervention, the limitations imposed on the U.S. Civil Aeronautics Board and the Canadian Transport Commission by the respective United States' and Canadian statutes were evaluated. This task when completed generated sets of the potential actions of the two regulatory bodies within

the structural limitations of their creation. In order to test the hypothesis, the actual regulatory practices of the two bodies in terms of their intervention into the structure and conduct of their respective industries was considered for the time period 1967-1975.

There emerged from the investigation a number of distinct differences in the performances of the two industries which appear to be correlated with differing regulatory practices on the part of the two regulatory bodies. These differences included: (1) a lower price per passenger-mile for "Coach" service in Canada; (2) a lower frequency of service in Canada; (3) less price discrimination in Canada; and (4) a higher load factor in the Canadian market. On the basis of the differences in these air transport industries, it is argued that there is substantial evidence to support the hypothesis of regulatory interventions altering the expected performance of the regulated industry.

ACKNOWLEDGEMENTS

As is common in the case of long manuscripts, the actual writing of this dissertation encompassed several years. During this time, a large number of individuals "put up with me." I can only acknowledge a few by name. However, let me first thank all of the students to whom I lectured during this time period. They got less attention than they probably deserved.

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CHAPTER I

INTRODUCTION

"Regulation means that the scope of competition is delimited. The relationship is difficult, however. Effective competition may prevent regulation. But, in order to become effective, competition may need some delimitation, or, in other words, regulation may promote effective competition." Fortman, p.139

It is often assumed that regulatory intervention is de facto effective in altering the performance of an industry. Prudent authors, such as Fortman,¹ however, have been careful to point out the uncertainty in the relationship between regulation and the industry which is being regulated. Indeed, it has even been suggested by some authors² that it is more generally the case that regulators have little or nothing which they can effectively regulate. It will be the purpose of this thesis to investigate the hypothesis that the actions of regulatory bodies, and more particularly of regulatory boards, in fact do alter the performance of the regulated industry.

The analysis of a particular industry in order to shed light on the above hypothesis presents several methodological difficulties. Most important, whenever an entire industry is regulated, it is impossible to determine precisely what the performance of the industry would have been in the absence of regulation. To avoid facing this problem, many studies have centred on comparisons of regulated with unregulated firms in the same industry, or with comparisons of regulated industries with highly similar but unregulated industries. This approach, however, also has its limitations. In the first place, the majority of regulated industries, including air, rail and pipeline transport, are generally excluded from such an analysis by virtue of the lack of a comparison industry. In the second, the class of excluded industries tends to be larger in smaller or less developed countries, where the number of firms is smaller and comparison industries are less likely to exist.

An alternative approach is the comparison of the effects of differing regulators on essentially similar economic substructures. As long as the industries in question, and the underlying environments are reasonably similar, any differences in performance in the industries could then be ascribed to the differing regulatory practices and policies of the boards in question. This approach has the advantages of not being limited by the small size of the market in a country the size of Canada, and of being applicable to industries

such as the air transport industry given that the economic substructures can be said to be similar as will be discussed later. The latter advantage is particularly significant, as one would expect a priori the performance of these industries to have been altered over the long history of continual regulatory intervention.

In particular, this study centres on the mainline air transport industry. As a traditionally regulated industry, one would expect air transport to have developed "differently" than it has, had such organizations as the Canadian Transport Commission and the (now defunct) Air Transport Board not existed.

THE THREE "CLASSIC" APPROACHES

A great deal of work has been done in the study of air transport regulation. This work may be classed basically into three types. The first is what might be called the "legalistic" type. The second type is some form of industry study. The third deals principally with the economic implications of an exogenously applied set of rules and regulations: what might be termed the "exogenous approach". Each of these three approaches has contributed substantially to knowledge and to the understanding of air transport regulatory practices; but each is lacking, to some extent, for our purposes. While each type is conceptually distinct, most work has of course, involved significant

elements of more than one of these. Some clarification of the nature of these approaches is useful, if only for determining the purposes for which each is most useful and the inherent limitations of each in testing the given hypothesis.

(1) THE LEGALISTIC APPROACH

The legalistic approach consists principally of codifications of the rules and regulations of the air transport regulatory system.³ In this case, the use for which this codification is intended limits the rules and regulations which are included. These analyses, while strong on organization, are, however, often weak on the sort of interpretation which is useful to economists. It is as an organizational technique the legalistic approach is most useful, and in Part II such a codification will be used.

(2) THE INDUSTRY STUDY

The so-called industry study encompasses a wide variety of studies. It is principally characterized, however, by an analysis of the institutional constraints inherent in a particular industry under study. One obvious limitation of this sort of study is the concentration on one industry; this is a very useful limitation, however, for extracting information about the nature of (for example)

the air transport industry. However, a great deal of care must be exercised to insure that the industry is appropriately defined. Further, one must insure that policy implications and conclusions derived from such a study are not made in isolation from the rest of the economy, particularly when there are major spillover effects.⁴

(3) ECONOMIC IMPLICATIONS: THE EXOGENOUS APPROACH

In most purely "economic" analyses of North American air transport regulation, rules and regulations are viewed as exogenous to the decision-making processes and the markets. In other words, these regulations are viewed as being applied "on top of" an essentially free-enterprise economy. This emphasis might be termed the "competitive bias" of such studies. If one as one views regulation as being exogenous to any sort of economic system, and, in so far as this system is an accurate⁵ reflection of the underlying economic substructure, much information can be gleaned from such approach. In addition to this bias, however, an inherent limitation is the difficulty in extracting the manner in which feedback through the decision-making processes occurs. The basic approach to this sort of analysis is the identification of "causes" and "effects", and the specification of mechanisms which "explain" how the initial variable "causes" the changes in the affected variables. Work within this category has centred generally on the implications of changes in a

particular law, without regard to the nature of the regulatory body which instituted such change. For example, in the absence of a direct relationship, this approach would not ordinarily consider the relationship between technological change and the manner in which the regulatory body reacts to it. A potentially highly profitable technological change might not be made were the regulatory body to place an absolute income or profit constraint upon the firm. There would simply be no reason to bother with an alterations in the technology, particularly if there are any costs associated with the change.⁶ While these sorts of considerations have been taken into account within some regulatory analyses,⁷ they have not been integrated into the contemporary analysis of air transport regulation. Further, one rarely finds concern in this approach with such considerations as whether or not such change might induce the regulatory body to impose a profit constraint where none previously existed. This is not a problem with the method, but with the assumption that while regulations and regulators exist, they do so independently of the industry. As such, studies of the economic implications of regulatory intervention have tended to view regulators as isolated beings who generally behave in some known, but not a priori predictable, manner.

COMMENTS ON THE PRECEDING APPROACHES

Each of the preceding approaches is particularly valuable for answering certain types of questions. For example, were one concerned with such questions as, "What are the differences of the Canadian and the U.S. law in re air transportation rate regulation?", the legalistic approach would be appropriate. Similarly, were one concerned solely with concentration ratios or with the partial microtheoretic implications of altering entry regulation, the industry study and the exogenous approach would be appropriate, respectively. That is, some approaches are particularly relevant for dealing with particular sorts of questions.

Alternately, each of the above approaches can be used to answer the same question; however, the answers one would get from each analysis might differ considerably. Consider the question: "What are the specific types of regulatory intervention in the Canadian and U.S. trunk air transport industries?" By using the legalistic approach, one could, given a codification, list the relevant rules and regulations dealing with such topics as "Economic Regulation," "Regulation of International Air Transportation," "Liability," and "Problems, such as Airport Noise."⁸ Alternatively, using the exogenous economic analysis, one might trace through the micro implications of each of the above listed laws. The differences in the methods of the analyses

are, at this point, unimportant. What is important is that with each approach the frame of reference alters. Thus, when using the legalistic approach, one sees the above question as meaning: "What legal variables are relevant." The industry study seeks to answer the question: "What variables within this industry are affected by these rules?" And, finally, the exogenous approach asks: "What micro (and perhaps macro)⁹ theoretic variables are affected by these rules and regulations?"

Each of the above analyses thus provides useful information, both in terms of questions which are best handled by the methods implicit in each approach, and in terms of the particular slant of the answers inherent in the differing frames of reference. The problem, then, is: How can the above approaches be integrated without losing useful information while providing a more general frame of reference? To test the hypothesis the approach must also analyse policy as an integral part of the production process much as any other constraint. In order to facilitate these considerations the following frame of reference will be utilized. This approach might be called the "industrial organization" approach.

THE INDUSTRIAL ORGANIZATION APPROACH

In order to define the industrial organization approach it is

necessary to distinguish the study of industrial organization from other disciplines. Industrial organization is principally concerned with a systematic analysis of the institutional constraints inherent in the production process of the industry or group of industries under consideration. In other words, industrial organization is the "applied" analysis of microeconomic theory of the firm and related theoretic constructs, and implications. These implications, in general, may be broader in scope than the industries under study. That is, they may shed light on policy considerations for factor markets, for other industries, or even for broad policies dealing with such areas as competitions policy.

A classic industrial organization method of analysis for an industry or group of industries is that utilized by Bain. This analysis centres on the relationships between market structure, market conduct and economic performance. For this analysis, following Bain, the above concepts can be defined as follows: (1) "market structure refers to the organizational characteristics of a market...

[particularly] those characteristics... which seem to influence strategically the nature of competition and pricing within the market";¹¹ (2) "market conduct refers to the patterns of behavior which enterprises follow in adapting or adjusting to the markets in which they sell (or buy)";¹² and (3) "market performance refers to the composite of end results of whatever individual firm policies and

processes of adjustments of effective demands for (enterprises) outputs which are made by sellers."¹³ Bain's thesis is that a linear relationship exists between structural variables and conduct variables, and between conduct variables and performance.¹⁴ Pictorially, this may be illustrated as follows:

Structural Variables \longrightarrow Conduct Variables \longrightarrow Performance

This is not an unfamiliar assumption to anyone who has taken principles of economics. For examples, we talk about "pure competitors" (that is, firms facing structural variables including large numbers of buyers and sellers, free entry and exit, and so on), being "price takers" (having a certain set of pricing policies) at the price characterized by the equality of market supply and demand, and producing at the quantity at which the firm's MC curves intersect the market price line, thus specifying the price and output performance of the firm.

Each of the approaches, as has been noted, is carried on within its unique frame of reference. The frame of reference of the industrial organization approach is that which is implied by the structure, conduct, performance divisions, and the linkages between them. In order to test the hypothesis that a regulatory body can influence the industry which it regulates, one must be able to specify

(1) the points in the above stated progression at which the regulatory body intervenes and (2) the mechanism by which this intervention is translated into changes in performance patterns.

Clearly, insofar as the regulatory board, with force of law, can alter structural variables (or their fluctuations), performance is ultimately altered. Alternately, a board might alter the market conduct of the buyers or sellers and thus affect performance. One of the functions of this study will be to identify the points of intervention; the relative strengths of each of the linkages between structure, conduct and performance; and the degree to which alternative regulatory practices and policies would alter the ultimate performance of the industry.

It should be noted that as specified this frame of reference has the advantage of being endogenous in terms of the regulation which is applied on the air transport industries under study. Within this analysis, any regulation or potential alteration in any regulation must be weighted by the firms which are in the industry, potential entrants, and the purchasers of air transport services. Any appropriate alterations in terms of demand, supply, methods of production, pricing policies, etc., must be immediately calculated. Then any necessary rearrangements or alterations in their plans are made, and the market continues to operate. But the regulation is an

integral part of the decision making process, acting as a constraint on potential action. Thus any translation from the structural variables to a determination of appropriate conduct on either the demand or the supply side must be tempered by a known or anticipated response on the part of the third, ever-present party, the regulatory board.

Since the methods of economic analysis are basically universal, this study will make use of portions of each of the previously mentioned approaches. For example, a legalistic codification of the rules and regulations of the Canadian and U.S. air transport industry will be utilized, but within the industrial organization construct. In other words, the codification will be carried out under the lens of structural, conduct, and performance classifications. Thus, "economic regulation" will be translated into regulations affecting structure, affecting conduct, and affecting performance.

Similarly, since the analysis views regulation as being integrated into the decision making process, it is capable of handling general questions about the impact of general policy alterations, as well as determining the underlying system, that is, the set of underlying regulatory assumptions, which is being used by each country in question.¹⁵ However, in order to test the hypothesis, it is clearly necessary to develop a mechanism which "explains" how a

regulatory board translates its desires viz a viz an industry's performance into reality. This, of course, is in addition to ferreting out the board's desires, and determining whether or not they are internally consistent.

THE QUESTIONS OF THIS STUDY

This study is principally concerned with the economic implications of air transport regulation in Canada and the United States; specifically, to test the hypothesis that regulatory boards alter performance of the regulated industry. If the industrial environments are reasonably similar, then differences in industrial performance in the Canadian and U.S. mainline air transport industries must be ascribed to the differing regulatory practices and policies.

Within the context of the industrial organization approach, the following questions will be of particular interest:

- (1) What is the relevant market or set of markets? How did these develop historically and how is their present development enhanced or limited by the existence and action of the regulatory body or bodies in the two air transport industries in question?

(2) At what points within the production, distribution, and consumption processes can the regulatory agency intervene? In other words, what are the structural characteristics of the Canadian air transport industry? What of the U.S. industry? Similarly, what are the dimensions of market conduct of the Canadian, and of the U.S. industries? What relevant information can be gained about the demand side, in terms of structure, and in terms of conduct? What are the economic implications of the regulatory intervention in terms of structural or conduct policies on both the demand and supply side?

(3) What is the nature of the regulatory intervention? What information is necessary to determine the goals, and the regulatory practices and policies which can be used? What are the policy and corresponding economic implications of different board sizes and compositions?

(4) Is it a reasonable assumption that, in the absence of regulatory intervention, the Canadian and U.S. air transport industries would evidence similar performances? That is, are the economic substructures similar enough for such a conclusion? Given the statutes, what are the similarities and differences in the basic structure of the regulatory boards; that is, have we sufficient similarity in regulatory mechanisms to conclude that

the differing actions of the regulatory bodies in question are the arbiters of differing performance?

(5) How has each of the regulatory bodies intervened in the market processes of the respective industries? Do these practices and policies differ?

(6) What are the implied performance goals of the regulatory bodies? Do these goals appear consistent with the above-specified intervention? Insofar as they are, what is the resultant performance in the United States as compared with the Canadian air transport industry?

(7) Do the expected differences occur? That is, does the overall hypothesis appear to be true?

CONCLUDING REMARKS

It can be seen from the above list that there are two basic "types" of questions. The first category includes those which are basically "theoretical". These questions deal with topics which could be covered in varying degrees of generality; the theoretical portion of the thesis will be limited, as far as possible, to the analysis of intervention which is specifically relevant to the air transport

industries under study. The second set of questions deals with particular regulatory intervention of the CTC and MOT (with respect to the Canadian air transport industry) and the CAB (with respect to the U.S. air transport industry) and with the performance of the two industries.

Part I of the thesis will provide the theoretical construct of this study. It will, therefore, encompass the first three sets of questions above. Chapter 2 covers the development and description of the present air transport markets. In addition, it will define "the air transport market" to be investigated. Chapter 3 deals with regulatory intervention on the demand and supply sides of market structure. Chapter 4 deals with such intervention with respect to conduct. Part I concludes with a discussion of regulatory bodies and the determination of performance goals in Chapter 5.

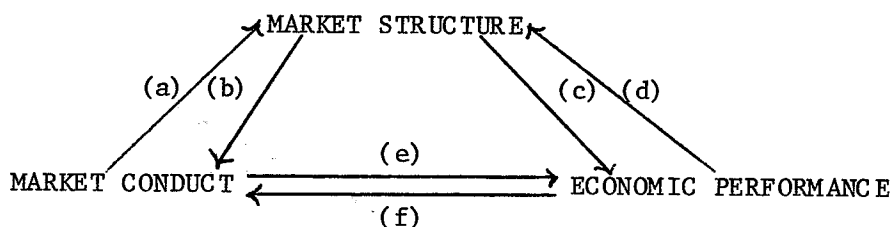
Part II deals with the application of the theoretical construct. Chapters 6 and 7 deal with the "official goals" (that is, limitations on the regulatory structures of regulation in the U.S. and Canada and with the underlying (and therefore also limiting) economic substructures. Chapter 8 deals with intervention by the CAB and the observed performance goals. Chapter 9 deals with the pattern of Canadian regulatory intervention. Finally, Chapter 10 summarizes the results, including expected performance differences, and provides

evidence that, at least in the Canadian and United States air transport industries, the regulators indeed do appear to have something to regulate.

FOOTNOTES

1. Fortman, Bastiaan de Gaay. Theory of Competition Policy: A Confrontation of Economic, Political and Legal Principles. (Amsterdam: North-Holland Publishing Company, 1966), p.139.
2. Stigler, George J. and Claire Friedland, "What can the regulators regulate?" Journal of Law and Economics V (October, 1962), pp.1-16.
3. c.f. Andreas F. Lowenfield, Aviation Law, New York (Matthew Bender, 1972) in the U.S. air transport regulatory sector as an excellent example of this sort of work.
4. For example, one might want to draw a policy conclusion that a particular industry had not expanded "because" the regulatory body did not encourage such growth. Clearly, if this growth would have required skilled labour which was not available, such growth was precluded in any case. As such, the lack of growth would in fact not be a matter of policy in this industry but the result, perhaps, of certain Manpower policies.
5. This term is carefully left undefined. If one wishes, for example, to argue that prediction is all that is important, clearly "accurate" means an assumption which gives accurate predictions.
6. This is true assuming that there is no reason to believe the regulatory body would change its profit expectations. Were there a probability of such change occurring, the expected profit weighted by the probability of a change occurring must be balanced by the cost of introducing such a change. These costs could include such things as payments to labour if the particular company is unionized, or other forms of "bribery". Similarly, this assumes that it is not necessary to introduce such a change.
7. cf. M. Russell, "Resource Allocation in Utility Certification Decision." Michigan State University Public Utilities Studies, (East Lansing, Michigan: Michigan State University:1969) pp.21-45.
8. These examples come from Lowenfield, loc. cit., and are more or less representative, although perhaps more "economically" oriented than those from other legalistic analyses.
9. The emphasis on the micro as contrasted with macro is due to the orientation of this study toward a particular industry.

10. Bain, Joe S., Industrial Organization. (New York: John Wiley and Sons, Inc., 1959).
11. Ibid. p.7
12. Ibid. p.9
13. Ibid. p.11
14. A more general statement of the interrelationships between these three might be as follows:



The difference between this approach and Bain's is the existence of the feedback effects (a), (c), (d) and (f). Since the relative weights of these effects are not specified above, one argument which might be made is that they are zero, in which case the above triangle collapses into Bain's linear approach. If one considers the possibility that they are nonzero, however, then some assessment must be made as to the relative strengths of these effects both with respect to each other and with respect to the initially defined effects (b) and (e). It is hypothesized for the purposes of this analysis that these feedback linkages are either (1) sufficiently small as to be ignored, (2) important equally in both cases to be studied, or (3) are noted by the regulatory board and integrated into policy. An example of the latter might be found in regulation of profit to "normal levels". Such regulation would, if firms in other industries were making positive economic profit, presumably decrease the number of firms desiring to enter the air transport industry. If the regulatory board wished to discourage entry, presumably this policy would act to reinforce the other policy. The assumption being made is that the regulatory board notes these interrelationships. c.f. F.M. Scherer, Industrial Market Structure and Economic Performance. (Chicago: Rand McNally & Company, 1970), p. 5.

15. As such, this analysis provides an approach of reasonable generality, is able to incorporate the "good" points of the previous approaches, and yet has minimal integrative loss.

PART I

THEORETICAL CONSTRUCT

Part I is intended to provide the theoretical construct for this study. Chapter Two will be concerned with a definition of the relevant markets, the historical development of these markets, and the limitations in terms of the markets which will be the objects of concern in this study.

Chapter Three will trace through the structural variables relevant to the air transport industry, thereby identifying those points at which a regulatory agency could intervene. Further, it will consider the implications of such intervention, through the application of the relevant theory. Chapter Four continues this process with reference to market conduct.

Chapter Five seeks to identify the nature and mechanism of regulatory bodies, particularly of regulatory boards. As such it provides some insight into such issues as the (1) basic differences in philosophy of differing regulatory boards and (2) differing emphases on performance variables of alternative boards.

As such, this section seeks to provide the following: (1) the necessary underpinnings for a general analysis of the possible alternative regulatory practices and policies for mainline air transport in Canada and the U.S.; (2) a basis for analysis of the actual

regulations in these industries and for ascertain their consistency both (a) internally and (b) with respect to the stated goals of regulation; and, finally, (3) a basis for the evaluation of the hypothesis that regulatory actions do in fact influence industry performance.

CHAPTER TWO

DEFINITION, HISTORICAL DEVELOPMENT AND ISOLATION OF
THE MARKETS

Bain defines a market as, "closely interrelated group of buyers and sellers"¹. Thus one must decide how closely interrelated a group of sellers and buyers must be to constitute a market. One could, for example, delimit that amorphous mass of 'goods and services' firms which constitute the so-called "transportation industry", as one market. On a lower level of aggregation, one could consider each mode as an individual market. Thus the designation of the air transport industry would become appropriate. However, for the purposes of this study, even this level of aggregation is far too great. Regulatory practices and policies are not applied uniformly across all firms producing air transport services. In fact, these practices and policies must themselves serve in part to define the set of markets which will be used to constitute the parts of the aggregated air transport industry.

DIMENSIONS OF THE MARKETS

There are many ways to conceptualize a market. These include identifying: (1) a distinctly definable "product"², (2) a distinct spatial character; (3) a distinct temporal character; and (4)

(particularly within the "utilities") a common vs. a private carrier, that is, the pattern of obligation to serve. In respect to the air transport industry, the above classifications could be translated as follows:

(1) The distinct type of products or "cargo" within the air transport industry, include the following:

- (a) all-passenger services
- (b) all-freight or purely cargo services
- (c) joint freight-passenger services

(2) Spatial dimensions are essentially those dealing with distance or geographical distinctions. For example, the dimensions of markets can be purely local, some standard metropolitan area, regional, national, bi-national, etc. While geographical in nature, these divisions have been principally established as regulatory classifications in the Canadian industry. Like any of these divisions, the appropriate level of aggregation is principally a choice which must be made on the basis of use to which the distinctions will be put. Within the North American setting the basic spatial market distinctions include:

- (a) local or taxi services which provide service on the smallest geographical basis;
- (b) the so-called third-level or primary carriers;

- (c) the regional (Canadian) or feeder (U.S.) carriers;
- (d) trunk or mainline carriers;
- (e) international (or bilateral) carriage.

(3) Temporal dimensions deal principally with the frequency and regularity or service. One such classification for the air transport industry includes:³

- (a) scheduled or regular specific point services which are defined as those,⁴

"operated by air carriers who offer public transportation of persons, mails, or goods by aircraft serving designated points on a route pattern and with some degree of regularity, at a toll per unit."

- (b) unscheduled or irregular specific point carriers defined as those,⁵

"operated by air carriers who offer public transportation of persons, mails, or goods by aircraft serving a defined area or a specific point but not on a regular schedule, at a toll per unit."

- (c) charter services, in which a group or party of persons engages the service of an entire aircraft, and is usually subject to certain restrictions as to what constitutes a "cohesive" group for the purposes of such charter rates as granted.

- (d) contract services which,⁶

"differ from all the above in that the air carriers do not offer transportation to the public at large but carry persons or property both in accordance with one or more specific contracts."

It should be noted that implicit in the above discussion of the temporal classification of markets is some notion of a distinction between "general" and "commercial" aviation, that is, private versus common. General aviation, as expected, refers to movements of passengers and or cargo by "business firms and individuals for such activities as business and personal transportation,...and instructional and recreational flying."⁷ Commercial aviation, therefore, refers to aviation which is carried on by firms or individuals operating aircraft for hire. This distinction, obviously, is not clear cut. There are, at some spatial levels, particularly within taxi and contract carriage, firms which operate both as general carriers and commercial carriers. This leads to some interesting problems in regard to classification of particular movements. Suppose, in one case, that a firm which normally engages in purely general aviation finds that its planes are not fully utilized. Let us then suppose that this firm enters into a contract for the movement of passengers and/or freight with another firm during non-peak times or for backhaul movements. This contract work is obviously an entry into the area of commercial aviation or operation of aircraft for hire. Should this operation be counted as commercial aviation, and, if so, how? This leads one into statistical considerations, and such considerations as is this type of aviation regulated? If it is regulated, how is the data collected? Suffice it to say that if a legitimate distinction may be

drawn between general and for-hire carriage, all for-hire carriage (in other words, all air transportation which occurs in a "market") is theoretically commercial aviation, and is part of at least one level of aggregation of the air transport industry.⁸

Dimensions such as temporal, spatial, and cargo types can be used for defining different market areas. They are particularly useful for disaggregating the "air transport" market to something corresponding more usefully to the production, consumption and regulatory processes which exist today.

Incorporating all three of the above characteristics into a single three-tiered set, a "market" in the air transport industry may be defined for the purpose at hand by the following dimensions:

An air transport market is the collection of sellers and buyers of:

- (1) a defined cargo type
- (2) being moved within a distinct spatial level
- (3) within a distinct temporal division

Thus, for example, a passenger movement on a scheduled trunk carrier is assumed to be distinct from a passenger movement on a non-scheduled third-level carrier.

This definition of a market presents three particular problems in practice: (1) although the definition provides markets of a significantly lower level of aggregation than, for example, "the

Canadian air transport industry," it may not be sufficiently disaggregated for some considerations, especially at what may be called the route level with respect to (a) the buyer of air transport services and (b) the allocation of these routes within the regulatory structure; (2) it may be improperly aggregated for only some users and therefore provide problems in defining the quantity of product sold; and (3) not all of the theoretically possible classes which result from the three-tiered classification above, emerge in practice. These problems deserve further consideration.

THE APPROPRIATE LEVEL OF DISAGGREGATION AND THE ROUTE QUESTION

Most users of air transport services desire transportation between points A and B and perhaps back again. Superficially, this movement bears little resemblance to our market definition of the trunk line scheduled passenger service. In fact, of course, if A to B is serviced by a trunk line passenger carrier and if it is the only carrier, or if it is one of a group of two or more trunk line, scheduled, passenger carriers serving this movement, then this movement is within the class of movement previously defined as trunk line scheduled passenger service. The sole problem with the market definition from the buyer's point is that the market is defined at too large a level of aggregation.

Similarly, were a regulatory agency concerned with the rate of carriage for passengers moving from A to B on this trunk line, or a group of two or more trunk line carriers, the relevant market might be this and only this movement.

For most purposes within this study, this limitation is not of a great deal of concern. In the first place, much of the regulation with which this study is concerned, deals with the complex of movements in terms of such considerations as regulation of profit, entry, etc. In the second place, from the point of view of passengers, they are merely demanding one portion of the services provided within the market of the scheduled trunk line passenger carrier. The same would be true of the regulatory agency were it in the process of "zeroing in" on the price or rate for this particular movement. In other words, for a particular movement, the concern is directed at a partial analysis of a partial analysis. This is, in fact, the process which is carried on from the initial stages of training in economics. It is directly analogous, on the buyer side, to dealing with a change in demand on the part of some buyers caused by an exogenous change in, for example, tastes, income, etc. On the regulatory side, it is similar to viewing the partial implications of changing a regulated floor and/or ceiling price. And finally, from the point of view of the seller, it would be similar to viewing the implications of a change in, for example, the cost of one input, *ceteris paribus*.

The final conceptual problem with this definition occurs with the regulatory agency, when it sets about the determination of the appropriate carrier for the movement of a particular type of cargo, i.e. freight, passenger, or joint freight and passenger. The conceptual difficulty which could theoretically, and does in practice, occur, comes about as the result of the fact that two or more spatial or temporal dimensions may be either under consideration or in operation on a particular movement. For example, one might find a regional and a trunk line carrier serving the same movement from A to B. Similarly, one might find both charter and scheduled carriage along the same movement. For some buyers, the concern is simply with a movement from A to B via any form of carrier spatially and temporally.

This difficulty may be handled in one of several ways. In the first place, it could simply be assumed away; if, for instance, one is dealing particularly with one spatial or temporal dimension, the problem does not arise. For example, by choosing to look at only trunk or regionals, but not both, one may avoid, rather than solve, the problem. Second, one might argue that there need not be a significant impact on the analysis, i.e. that any influence is essentially trivial. And, finally, one could argue that this is essentially a disequilibrium matter which, having been determined by the relevant regulatory agency, will produce a stable set of

demand-supply relationships which are essentially constant over a reasonable time period. For example, buyers may view themselves as being in the market for moving between A and B. They also may view themselves as being basically in the market for trunk movement or for regional movement over that route, but not for both.⁹

In fact, for simplicity's sake, the first alternative will be chosen in this study. That is, a route will be defined as:

$$R_z = abS_iT_jP_k$$

here R_z is defined as the z th route;

ab is defined as the movement from point a to point b or as the distance measured by a movement from point a to point b
 s_i is the i th type of spatial dimension where i runs from 1 to 5, corresponding to (2) (a) through (e) on pages 23 and 24;
 T_j is the j th type of temporal dimension running from 1 to 4, corresponding with the (3) (a) through (d) found on page 2;

and P_k is the k th type of product running from 1 to 3 and corresponding to the (1) (a) through (c) products found on page 23.

By defining a route as above, it has been assumed therefore that only one spatial, one temporal, and one product classification will be involved in movement from point A to point B. That is, the problem has been assumed away by arguing that definitionally, only a trunk or only a regional will service a particular route, etc.

Given the above definition of a route, a market can be defined as

$$M_z = S_i T_j P_k$$

where M_z is the z th market and the remainder of the terms are defined as above. Thus, one could list the potential markets simply by listing combinations of the three tiers of the classification in turn.

IMPROPER AGGREGATION - The Homogeneity Problem

The problem of "improper" aggregation is, in some senses, merely an extension of the route question considered above.

Three distinct product types have been defined, including: (a) passenger, (b) all cargo, and (c) joint product. Only passenger service will be discussed within this study. However, there remains the question, What is the unit of output? Following Wilson,¹⁰ transportation can be said to create place utility; that is, in passenger traffic, a trunk carrier moves a person or group of people from point A to point B and thereby increases his or their utility. The problem, then, is to define the unit of output in some measurable fashion, such as can be used for aggregating across routes in order to produce the demand and supply curves for the market, and thereby,

allow one to perform the series of partial analyses which will be necessary for determining the implications of certain forms of regulatory practices and policies.

The problem with definition of a unit of output is two-fold: (1) what is it (the unit of output)? and (2) is it homogeneous? To any given passenger moving from A to B on a mainline carrier, the unit output might be said to be just that, i.e. the movement of one warm body from A to B. This unit, while adequate for one given route, suffers from aggregation problems. That is, not all movements are from A to B. Thus we define an additive expression of this movement in terms of the number of passenger-miles moved. It should be noted that the price one pays for this additivity is a loss of information. Previously, one could say that a movement of one passenger from A to B, assumed to be a distance of 350 miles, was just that. Now, under the assumption that the unit is passenger-miles, we have a movement of 350 passenger-miles. However, it is not clear whether this refers to moving one passenger 350 miles; or two passengers 175 miles each; or one passenger for 200 and one for 150 miles, etc. Similarly, the statement that a given firm produced 500,000 passenger-miles of service does not tell one whether or not the firm moved one passenger 500,000 miles or 500 passengers 1,000 each, or any other imagined combinations of passengers and distances totalling 500,000. However, notwithstanding the inherent loss of information generated by assuming

this product unit, as long as it is used only for appropriate services, its use should cause only limited concern.

More specifically, the homogeneity problem (in addition to the examples pointed out above, which stem directly from the definitional properties of assigning an additive unit) is a general problem created by the joint product nature of transport. This problem is perhaps greatest when one deals with shipments by truck or rail where the commodity is not traditionally defined as part of the market. A similar problem occurs within air transport, in regard to the division of products into passenger, cargo, and joint. However, this problem is minimized by the decision to include only the passenger services as within the market. That is, one no longer faces the problem that what the carrier moves is one plane from A to B while the shipper is moving a warm body, or a crate of oranges. Certainly, it is difficult to equate bodies and oranges; however, similar sorts of problems crop up when one examines passenger movements. These include:

- (1) First class versus "coach" service; that is, how should one rank first class movement in common terms with the coach? In each case, along a given route and within a given airplane, one is moving one passenger x miles for a total of x passenger miles times the number of passengers moving. However, if the plane is such that it is possible to alter the proportions of coach and

first class seats (if one could have first class seats on pallets, for example, and replace these with a greater number of narrower coach seats, thus increasing the number of seat-miles flown), a divergence in the demand and supply side definitions occurs. (This difficulty might be resolved by arguing that the buyer views the first class movement as a given percentage of coach plus 100% of coach, and the seller views the first class movement in the same way.)

(2) Any of the additional "quality" distinctions, such as the provision of food, provision of inflight movies, which give rise to similar problems as (1) above; and,

(3) The fact that the opportunity cost of the movement must be weighed not only in terms of similar (e.g. passenger) movements along differing routes, but in terms of the movement of other commodities or products along the same route.

The difficulties lead to the search for a common denominator.

The passenger mile is generally accepted as the best available "common output unit." In any case, this study will make use of the passenger-miles measure on the grounds that (1) it is the best available additive measurement of a unit of output, and (2) there is no substantial variance, within this market, of the passenger miles to seat miles ratio.

THE "MISSING" CLASSES

The final problem with the definition of the market being used arises as a result of the fact that not all of the 60 theoretically possible markets appear, in fact, to be possible, given the present regulatory structure and the development of the industry. For example, one would not normally expect to find a third level, scheduled, cargo carrier, in operation. While this may partially be due to the cost and demand structure of the industry, it is also directly traceable to the development of this industry within the context of the particular regulatory agencies involved in Canada and the U.S.

HISTORICAL DEVELOPMENT OF THE INDUSTRY: CANADA

While there is excellent work in the history of air transport in Canada such as J.R.K. Main's *Voyageurs of the Air* (Queen's Printer, Ottawa, 1972) - it is neither necessary nor desirable for the purposes of this study to dwell in depth on this history. Since the principal concern here is with the present state of the Canadian and U.S. air transport industries, the implications of present regulatory practices and policies within these two countries, and the implications of alterations of these practices and policies in terms of future development of the Canadian air transport industry, a short history should suffice to bring out the necessary background information.

Summaries of the Canadian air transport development can be found in such sources as Purdy,¹² Currie,¹³ and, particularly, Studnicki-Gizbert.¹⁴ The material below is taken from these sources, and is intended merely to provide general background information for the discussion to follow.

As in the case of the U.S., Canadians were actively involved in air warfare during World War I¹⁵. Significant growth of frontier or bush flying occurred in the twenties, and was curtailed by the market crash in 1929.¹⁶ Continued mining operations during the thirties enhanced a continuation of bush flying.¹⁷ During this time, the government maintained interest in these operations through a Parliamentary Board in 1919, and the Department of Defence from 1922.¹⁸ The Dominion government was also interested in the promotion of training programs, airport construction, and the support of airmail services (the beginnings of support for mainline aviation), but was unable to carry forth such plans due to the economic conditions of the early 1930's.

In 1936, the responsibility for controlling, promoting, licensing, and so forth were transferred to the Department of Transport.¹⁹ During the late thirties and early forties, there was: (1) renewed support for airway and airport development,²⁰ (2) expansion and reexpansion of airmail as authorized by the Post Office,

with resultant confusion in differing compensation rates, increased competition in some geographical areas, etc.;²¹ (3) the passage of the Transport Act, which put control over rates and schedules into the hands of the Board of Transport Commissioners;²² and (4) the emergence of Trans-Canada Airlines (Air Canada after 1964) as a subsidiary of CN as the transcontinental or mainline carrier for Canada, leaving CP to form CP Air in 1942 to enhance development of north-south routes.

During the war years, there occurred dramatic changes in aircraft technology. Trans-Canada Airlines developed into a viable concern.²³ CP Air was formed by the amalgamation of ten small air transport companies - therefore acquiring some important feeder line licences.²⁴ However, other than these operations of the major companies, "commercial aviation in Canada during WWII practically ceased to exist."²⁵ There was, however, some development of airport and runway facilities as a result of the defence operations,²⁶ as well as the training of many fliers by the RCAF.

At the end of the war, several interesting phenomena occurred, including (1) the increase in bush flying, both in terms of numbers of operators (due principally to the influx of ex-RCAF fliers) and in terms of mileage flown; (2) a division of service on the north-south routes into (a) large-scale operations which would be retained by CP

Air and Maritime Central Airways and (b) bush or pioneering services which would in the future be handled only by local carriers; (3) an expansion of regional carriers, in spite of the lack of government recognition of a regional market system, and therefore lack of sufficient and adequate airport and landing facilities; (4) a general fleet modernization at most levels; and (5) the beginnings of a general rethinking of the allocation of mainline functions strictly to Trans-Canada Airlines.

By the mid-fifties, the characteristic pattern of Canadian Aviation was developing. The relevant regulatory material will be traced from approximately this date but a few events which will be important later, should be noted at this point. These include: (1) CPAir officially entering the transcontinental Canadian scene by operating a daily service between Vancouver (via Winnipeg and Toronto) and Montreal²⁷, (2) during the mid 1960's, the Wheatcroft study's concluding, among other things, that CPA's activities had "led to wider public satisfaction... (although) it had diverted some traffic from Trans-Canada... (but) not (enough) to prevent the national carrier from establishing a profitable position,"²⁸ (In consequence, in 1967, CPA was to be allowed to expand its transcontinental or mainline services up to 25% of total transcontinental capacity by 1970.);²⁹ (3) Air Canada's continuing expansion, but with its international share remaining, in line with previous policy, within

the restricted geographical areas of Britain, western, northern and eastern Europe and the Caribbean; (4) the separating of regional air carrier policy from mainline in the 1966 statement of principles (tabled in the Commons on 20 October), which provided that:

Greater scope will be allowed regional carriers in the development of routes and services by the following means: (a) where appropriate, limited competition on mainline route segments of Air Canada or CPA may be permitted to regional carriers if this is consistent with their local route developments; (b) in a few cases, secondary routes at the present operated by Air Canada and CPA may become eligible for transfer to regional carriers; and (c) a larger role will be allotted to regional carriers in the development of domestic and international charter services, including tours and new types of services.

HISTORICAL DEVELOPMENT: United States

An excellent summary of the development of the U.S. air transport industry is given in Lowenfield as abstracted from a Report of the Antitrust Subcommittee of the House Committee on the Judiciary on the Airlines Industry. Alternatively, any standard U.S. transport or air transport text (for example, see Locklin, or Sampson and Farris) provides sufficient information for the short summary which is required here. Once again this study is principally concerned with the contemporary situation in the air transport industry, and with its potential development in response to regulatory practices and policies. What is, therefore, of chief importance here is to bring out the divergences in the U.S. air transport industry's development

from the Canadian development, as well as to provide a short summary of general background information.

With the onset of World War I, and large scale government assistance,³¹ "immense strides" were made in aircraft development. However, the primary impetus for the development of the present air transport industry was the development of commercially viable, speedy, airmail carriage.³² From the early experimentation in 1918 through the passage of the Kelly Act (1923) the Post Office Department, with its financing of almost 2,000 miles of lighted runways, inaugurated what was to become the present pattern of air transport service. This included, not surprisingly, the transition from U.S. service planes to the private carriers who later became the well-known trunk carriers in the U.S.

With the development of the air mail contracts, and to the relief of many airline operators, the Air Commerce Act (1926) was passed, giving responsibilities for fostering air commerce via the establishment of airports and air navigation facilities, accident investigation, etc., to the Secretary of Commerce.

During the remainder of the twenties, there was expansion of the airline industry and a number of consolidations, including: (1) United Airlines becoming long-haul with its control and merger of

National (New York to Chicago), Boeing Air Transport (New York to San Francisco), Varney (Salt Lake City to Seattle), and Pacific Air Transport (San Diego to Seattle); (2) North American Aviation Co. obtaining control of Eastern Transport and Transcontinental; and (3) American Airways obtaining a collection of disjointed routes.³³

Given the McNary-Waters Act [46 Stat. 259 (1930)], which allowed mail contracts to be given on the basis of space-milage, it was predictable that any company in the field would attempt to maximize its route milage. The impact becomes even clearer, when it is recalled that at this time passenger service was thought of as something to be left for the unsuccessful competitor, and certainly not as a long run profitable venture. The government's action, which both encouraged larger planes and longer routes, did, of course, act as a stimulus for passenger transport. However, it was, in essence simply a direct subsidy to the larger carriers.³⁶ The not unexpected result of this act was a series of spoils conferences which were ultimately unmasked when Postmaster General Brown was replaced in due time by Postmaster General Farley. After trying unsuccessfully to have the army take over the hauling of airmail, it was ultimately rewarded on the basis of competitive bidding, with the 1934 Airmail Act. The condition of this Act which forbade previous holders from bidding was overcome by some company name changes, such that many of the former holders found themselves carrying mail along their

previously allocated routes. As a result of this act, however, the prohibition of mail carriers (and now of any certificated carrier) from financial holdings, stock holdings, or interlocking directorates, within the whole of the aviation industry, came into being.

During the later part of the thirties, as specified in the 1934 Air Mail Act, the Federal Aviation Commission debated, among other things, the need for an independent regulatory agency. An ultimate result of their report was the formation of the U.S. Civil Aeronautics Authority (hereafter the CAA, later the CAB) in 1938, a compromise between the Roosevelt-carrier faction, which preferred incorporation of regulatory powers under the ICC, and the Post Office and Commerce Department, which was strongly opposed to ICC control. This agency, which continues to this day as the regulatory agency with its certificates of public convenience and necessity, in combination with airlines which essentially consist of the trunk line carriers of today, provided the basis for the modern U.S. air transport industry. For example, among the provisions were: (1) the certificates as mentioned above; (2) a recognition of the "natural monopoly" characteristic of transport, combined with a desire to encourage "competition"; (3) an extension of the interlocking directorates clause broadening merger and consolidation prohibitions; and (4) a provision of unfair practices clauses modelled after the FTC Act, Section 5.³⁶



With World War II, there occurred the first large-scale passenger increase, particularly, of course, with the flying of service personnel, much of it under contract with the federal government. Concurrently, and obviously not independently, came expansion of the route mileage of the trunk line carriers, the establishment of feeder and cargo services, the expansion of unscheduled operations, and technological innovation in the form of turboprops and turbojets on large scale. This latter expansion certainly continued to stimulate the air transport industry after the war to continue the expansion along passenger traffic lines.

As in the Canadian case, the position of the trunk lines at this point in their historical development corresponds closely enough with the present structure to preclude the necessity of further history, other than to note some important events which occurred later. The principal event was the separation of the Civil Aeronautics Administration into the Federal Aviation Administration and the Civil Aeronautics Board, where the former was to be responsible for aviation safety and the latter for Title IV of the FA Act, which concentrated on economic regulation. Other important events included: (1) the federal Airport Act of 1946 which allocated monies to state and municipal governments for the establishment or improvement of local airports; (2) the introduction and subsequent integration of two class, (i.e. coach and first class) or feeder lines which developed

in the 1940's and whose growth was continually encouraged through the early 1960's by the Federal Airport Act.

Many other interesting developments occurred during the time periods covered; however, most of these deal principally with non-trunkline operations, and have thus been omitted from the present summary.

ISOLATION OF THE RELEVANT MARKETS

From the taxonomy of markets which has been used in this study, there are 60 possible markets which could be considered. Obviously, within the confines of this work, only one or two could conceivably be considered in any depth. Since this study is principally concerned with regulatory practices and policies, several presently non-regulated markets can be ignored with little information loss. Additionally, since the ultimate concern lies in an evaluation of the relevant policies and practices in the Canadian air transport industry, one should be concerned with those areas in which (1) the most general or typical regulation occurs, and (2) little or no work has been done. (Two excellent masters theses exist, covering the local or third level carriers and the regional carriers in turn.)³⁷

This study, then, will concentrate on the trunk or mainline carriers, and on the regulatory practices and policies which surround the Canadian and U.S. mainline movements.

HISTORICAL DEVELOPMENT: Differences

While regulatory practices and policies in Canada and the United States regarding their trunk or mainlines will be shown to be roughly equivalent, significant differences in approach, attitude, and, therefore not unexpectedly in the implications, appear. Some distinctions can already be pointed out in terms of the historical developments which have lead to differences in the present structures.

While many distinctions between the Canadian and United States air transport histories can be found, there are two particularly important ones which ought to be clearly restated. These are, first, the fact that the CTC has no control over the carriage of mail, and more particularly none over any aspect of the contracts the Post Office makes with any air carrier. Thus mail carriage was not in Canada as it was in the United States, a mechanism of indirect subsidy for the development of passenger hauling capabilities. This internal relationship among other things, developed the mainline carriers in the U.S. into a position resembling that of today much more rapidly than occurred in Canada.

Second, the "chosen policy instrument", in the guise of Trans-Canada Airlines (Air Canada) has had no counterpart in the United States case. This instrument was developed at essentially the same time as the Brown scandal, but while it would be interesting to speculate on the potential development of either the Canadian or U.S. air transport industries were the chosen instrument or Postmaster General Brown nonexistent, respectively, the fact is that while the U.S. mainlines had essentially calcified by the late thirties, the Canadian pattern of mainline carriers was not developed until the late sixties when CPA was finally allowed into transcontinental carriage.

The notion of the "chosen policy instrument" is in itself an important concept, and one which will be considered in greater detail in the following chapters. However, it can be noted here that its impact is and always has been far reaching. Simultaneously, it appears to be one of the great distinctions which show, even on the very surface, the differences in Canadian and U.S. air transport regulatory practices and policies.

FOOTNOTES

1. Bain, Joe S., Industrial Organization, loc. cit., p.7.
2. Consider, for example, the case of the Aluminum Company of America in which the argument over the relevant market - that is virgin ingot or total aluminum supply including scrap - was the difference between violation and nonviolation of the U.S. Sherman Act.
3. Currie, A.W. Economics of Canadian Transport, (Toronto: University of Toronto Press, 1967), p.562.
4. Department of Transport definitions as referred to by Currie, A.W., loc. cit.
5. Ibid.
6. Ibid.
7. Warford, J.J. Public Policy Toward General Aviation. (Washington, D.C.: The Brookings Institution, 1971), forward.
8. This distinction is somewhat spurious as all air carriage, for any purposes and carried on by any, can in fact be defined as an economic action since it involves the use of scarce resources. The distinction comes about because some of these movements do not occur within the price or market system. However, shadow prices could be calculated for these movements, and they could then be "measured" as economic activity. Similarly, regulation of an indirect sort could take place in terms of what portion and at what prices could businesses and individuals include the cost of this air transport as legitimate expenses for such purposes as income taxes.
9. That is, once the buyer has purchased a ticket on Air Canada between points A and B, he is no longer interested in a ticket from a regional carrier. After the fact, the demand is assumed to have been for trunk carriage.
10. Wilson, G. Essays on Some Unsettled Issues in Transportation. (Washington, D.C.: The Brookings Institution, 1966), p.18.
11. One could, of course, translate "an airplane" into the number of potential ton-miles, cubic-foot-miles, or whatever, and equate this to the potential number of passenger-miles or seatmiles of aircraft, and proceed from there.

12. Purdy, H.L. Transport Competition and Public Policy in Canada, (Vancouver: University of British Columbia Press, 1972).
13. Currie, A.W. op. cit., Chapter 21, *passim*.
14. Studnicki-Gizbert, K.W. "The Structure and Growth of the Canadian Air Transport Industry", presented at the Canadian Political Science Association Conference on Statistics, 1960.
15. Currie, A.W. op. cit.
16. Ibid.
17. Ibid.
18. Ibid. p.535.
19. Ibid.
20. Purdy, H.L., op. cit. pp.39-40.
21. Currie, A.W. op. cit. pp.535-536.
22. Purdy, H.L. op. cit. p.40.
23. McDonald, A. Smith. "Developments in Canadian Aviation and the Activities of the ATB," The Institute of International Law, (McGill University, December 6, 1954) p.15.
24. Ibid.
25. Ibid. p.16.
26. Studnicki-Gizbert, loc. cit. p.42.
27. Purdy, H.L. loc. cit. p.40.
28. Ibid. p.41.
29. Ibid.
30. Ibid. p.45.
31. Locklin, P. Philip. Economics of Transportation, (Georgetown, Ontario: Irwin-Dorsey Limited, 1972) p.770
32. Lowenfeld, Andreas F., Aviation Law, (New York: Matthew Bender, 1972) pp.I-2 to I-3.

33. Ibid. p.I-3.
34. Ibid.
35. Ibid. p. I-4.
36. Ibid. p.I-12 to I-15.
37. See respectively Coke, Robert A. The Economics and Regulation of Commercial Air Transportation with Particular Reference to Manitoba and the "Third Level Carriers", M.A. Thesis (Univ. of Manitoba, 1973).

Rink, John A. Regional Air Carrier Economics and Canadian Public Policy with Particular Reference to TransAir Ltd, M.A. Thesis (University of Manitoba, 1974).

CHAPTER THREE

THEORETICAL POINTS OF AND IMPLICATIONS OF REGULATORY INTERVENTION

MARKET STRUCTURE

Within the market for trunk, scheduled, passenger service (hereafter referred to simply as trunk or mainline service unless otherwise specified), two main questions must be answered. First, assuming a governmental or other agency desires to intervene in the market for some reason as yet unspecified - how do they or could they go about this intervention? Second, what are the implications, if any, of this intervention? This and the following two chapters develop the economic analysis needed to consider these questions with respect to the airline industries in question.

A regulatory agency may attempt to intervene (whether effectively or not) in the structure, conduct, or performance of a particular market. This chapter will be concerned with intervention into the market setting or structure.

Consumers who enter a market possess certain tastes, preferences, incomes and behavioural characteristics. Similarly, producers have

certain characteristics which determine the ways in which they respond to the market. Given those characteristics on the part of the market actors, the outcome in terms of prices and quantities will be a function of a structural variables. We turn first to an examination of points of potential intervention on the demand side.

MARKET STRUCTURE: POINTS OF POTENTIAL INTERVENTION, DEMAND SIDE

Remembering the definition of market structure as the organizational characteristics of a market which seem to strategically influence the nature of competition and pricing within a market, one can delineate those aspects on the buyer or demand side which must be considered. These include: (1) the degree of buyer concentration and the ease of entry into this market of new or potential buyers; (2) the income distribution; (3) the effective or the potential degree of information dissemination in regard to quality of service, cost of service, etc.; (4) tastes for the product; (5) any product differentiation in the mind of the consumer, and (6) other datum necessary for the buyer's determination of what is essentially a derived demand. In other words, the concern here is with an isolation of the factors which account for the level and elasticity of the demand for trunk carriage. Given an understanding of the variables affecting this demand, the government or potential regulatory agency can then set about altering

the level of and the elasticity of this demand.

(1) BUYER CONCENTRATION

It is generally the case that buyers of air passenger services are not heavily concentrated, nor do they typically make collective demand decisions. However, there can be discernable groups of buyers, and such concentration will be of concern if these groups are exploitable by such mechanisms as various types of price discrimination. These concentrations are not generally deliberately brought about by the consumer,² and even insofar as they are, cooperative demand (or collusion on the demand side) is assumed to account for such a small share of the market as to allow the assumption that buyers are price takers. Further buyers' concentration was prevented or retarded through regulatory actions affecting the relative growth of scheduled versus the non-scheduled markets. More will be said about these groups at the end of this subsection. The key point of this argument is that the buyer concentration is assumed to be negligible while groups exist which are potentially amenable to price discriminatory practices.

Concentration of buyers, whether collusive or not, has tended to accompany the development of regional (or so-called local service) carriers. These carriers have begun operating to a large extent in submarkets which are also served by the trunks and serve to substitute

for trunk movements. If, for example, there is strong regional demand for movements within or between particular areas, then insofar as consumers (for example, as represented by Chambers of Commerce or other organizations) are placated by Boards, or encouraged to develop demand associations by Board policy, and finally insofar as their comments, objections, and desires are passed on to regional services, there will be demand spin-off from either potential trunk routes, or routes which were previously served by trunk carriers. Demand for trunk traffic would thereby be reduced. This does not imply, however, that there is not adequate or even equivalent service being provided by these regional carriers; merely that the remaining demand for the trunk market may not always be of the atomistic, price taking character which has been previously assumed.

Entry by direct buyers is assumed to be "easy," that is, there are no artificial barriers to entry (other than the ticket cost). In other words, ~~anyone can become a buyer in this market.~~ Certainly in regard to charter or other such groups, there may be constraints on entry in terms of the characteristics necessary for the grouping. As such, any form of discrimination which forces the grouping of buyers may lead to an increase in the buyer concentration. Whether or not this is a significant increase in terms of producing measurable concentrated buyer groups is a statistical question, which will not be dealt with in this study on the grounds that any such

increases in concentration have to date not had major impact upon market outcomes, and show no great promise of so doing in the near future.

The government or other agency could attempt to increase effective buyer concentration by using such mechanisms as: (1) requiring buyers to be members of a consumer grouping in the manner of the aforementioned charter rules (affinity rules); (2) entering itself as a significant share of the market on the buyer side (for instance, the Canadian government's direction that travellers on Government business fly Air Canada if possible); (3) other forms of direct intervention such as the rationing of air tickets, etc., (wherein black markets can be expected to develop and the concentration thus to be affected somewhat less than would occur in the absence of such markets); and (4) more indirect forms of intervention, such as altering the income distributional patterns (discussed in the next section), altering the price levels, either of tickets or in general, and so on. It should be noted, of course, that these tactics could be used in reverse to attempt deconcentration of the buyer side of the market.

(2) INCOME DISTRIBUTION

A point which must be made at this time in regard to the distribution of income is that an alteration in the income distribution will probably imply an alteration in both the pattern and the level of the demand for air transport. Therefore, the government might choose to alter demand levels and patterns by altering the income distribution in the appropriate fashion. For example, consider the following case. (1) Assume an initially "even" distribution of income which produces a certain level and pattern of demand for air transport services. Now (2) suppose that through the use of the individual income tax, the government can effect a redistribution of income such that two discernable and disparate economic classes emerge, one at subsistence level, the other, affluent. Then (3), it is likely the case that those people in the first group who were previously consuming air transport services will now not continue to do so (unless, of course, air travel is either necessary to subsist, or they can borrow indefinitely and for some other reason have income-elastic demands for air travel). Similarly, those in the second category will now be able to afford to consume more air transport services. (Whether or not and by how much, they do so depends, of course, on the extra satisfaction gained from additional air travel, and from the other goods and services whose consumption might be increased). Whether on balance there will be a shift in the

demand curve for air travel as a result of such a shift in income distribution is not certain; however, given the assumption of diminishing marginal utility, one might expect a decrease in total demand at any given money price.

Generally, alterations in the income distribution would be expected to alter the optimal level of transport versus non transport spending, and airline transport versus other modes or all other goods. Insofar as the government is, for other reasons or as a goal in itself, redistributing income, there will thus be an impact on the desirable level of air transport versus other modal expenditures. Supply can be expected to adjust to the new optimal levels if fares as all other prices are allowed to adjust appropriately, or if a government regulatory agency directly encourages responsiveness in terms of capacity alterations. Insofar as the demand for air transport, ceteris paribus is seen to be increasing and insofar as new capacity is either generated internally within the existing carriers or by the increase of carriers serving the market as a whole, there is no reason to presume other intervention would be necessary to encourage the production of the optimal amount of air transport.

A final point in regard to the income distributional impact of regulation itself must be mentioned. In a wider sense, the distribution of goods between air transport and other goods and services is

affected by the offering of reduced rate transportation or the imposition of service to remote areas. The offering of reduced or optimal rate transport by a government agency will generate a demand curve which is, in essence, an income-compensated demand for the remaining service provided by a private carrier. A similar analysis would be used to represent the spin-off effect for other demand for air transport than that of the regulated market. Consider for example, the case where the unregulated sector is operating in a competitive setting, and therefore at lower prices than would occur in an unregulated monopolistic setting. Insofar as that causes an increase in overall demand due to the spillover of income effects, one would expect the monopoly market to operate at an even higher price and lower output than otherwise. (If the short run cost curve is diminishing, however, this does not necessarily imply the increased profitability of this operation. Insofar as this monopoly is rate-of-return regulated, there might be expected to be a higher cost, associated with a higher price, associated with a given rate of return).

(3) INFORMATION DISSEMINATION AND LEARNING

A typical assumption of the perfectly competitive model is perfect knowledge. In fact, as is well known, information is costly to obtain and quite probably increasingly costly at the margin as one approaches perfection.

The relevant question is: How much does the buyer know about (a) times of arrival and departures, fares and connections; (b) available substitutes and their prices; (c) the quality of service provided by air transport and by substitutes; and (d) other relevant information, including knowledge of non-price restrictions placed on a buyer who decides to purchase one particular form of transport. (For example, payment in advance, which adds to the cost of a ticket the opportunity cost of the funds advanced, but also may add a non-monetary cost via the inconvenience of a disruption of the purchaser's regular flow of funds pattern).

Even assuming that the above information is available and costless over time, it is not always the case that instantaneous learning occurs. For example, assume that a new group of air traveller, the X group, is defined such that an individual consumer, A, could fall within this group. If the group is then offered substantially lower rates, how long does it take and in what manner is this information integrated into the store of knowledge possessed by A? Similarly, are there time-flow costs for this learning to take place? In other words, can the lag time between occurrence of the change and knowledge of the change be shortened, and if so, is the mechanism required to decrease this lag costly?

Government can intervene to shorten any such lag and increase the available stock of such information by (1) making readily available such information as exists; (2) decreasing the cost of obtaining the information to the consumer including, for example, encouragement of advertising of the new prices for group X; ~~(3) limiting~~ the diversity of potential information through the use of uniform ticketing, uniform methods of calculating fares, and the like (as IATA does now for example), and (4) using other sorts of techniques (education, for example) which decrease the lag time or cost between information dissemination and awareness. By using any of the above techniques, the market should become "more perfect" and therefore one could expect buyer concentration to decrease. Increased concentration would be brought about by the opposite actions; that is, by increased obfuscation of information, increasing the costs of information and learning, and attempting to increase the lag time to learning.

(4) TASTES FOR THE PRODUCT

It is safe to assume that for at least some consumers, or potential consumers, of transport services, tastes can be altered through advertising. Fear of using a particular transport mode, particularly aircraft, might be altered by using (1) increased safety standards and dissemination of comparative (and hopefully encouraging) statistics on accident risks; (2) lowering the price of air travel to

such an extent as to overcome fears of injury in favour of monetary gains - and thereby of reducing those fears through familiarity in the long run; (3) advertising to the extent that the desire to consume air travel outweighs the fear of same, again with probable long-run effects.

(5) PRODUCT DIFFERENTIATION

There are two dimensions to product differentiation: (i) differentiation between trunk carriage and other carriage; and (ii) differentiation within each market. In the first, as the consumer sees trunk air carriage as being a different product from, for example, regional air carriage, the balkanization of markets into the previously mentioned classes is increased in its legitimacy. Additionally, however, this serves to decrease the demand elasticity of consumers (with this view) in the trunkline market. Whenever the government seeks to encourage this distinction, real or imagined, then it can decrease the elasticity of demand for trunk service, *ceteris paribus*.

The latter form of product differentiation consists of observed distinctions for which the consumer is willing to pay. These include: (a) first, coach and economy class services; (b) differing travel times, either daily or seasonally, and (c) the level of such extras as "free" drinks, food, newspapers, etc.; and (d) brand preferences. (Clearly, if consumers consider the skies to be "friendlier"

while flying a particular airline, there is product differentiation in the mind of the buyer, and thus an influence on behaviour).

The former distinctions are assumed sufficiently great as to constitute different "products" and therefore to generate different markets. The latter are assumed not sufficient to do so. However, insofar as consumers with particular sets of preferences can be differentiated by sellers, the potential for price discrimination clearly exists in either case.

(6) DERIVED DEMAND

It should be noted, at this point, that the demand for transport service is essentially a derived demand. That is, it is not generally the case that people desire airplane travel in and of itself. Generally, as previously mentioned, travel is assumed to create "place utility"; that is, it represents a movement from point A to point B, for some reason other than the journey per se. This is not to say that the movement in and of itself creates no satisfaction. It is often the case that at least some portion of the satisfaction gained is attributable to the enjoyment of the travel itself. (Conversely, however, there are obviously people who get dissatisfaction from the travel but feel this dissatisfaction to be outweighed by the gains of place utility). But insofar as any of the satisfaction from the

consumption of the transport service is attributable to its derived demand characteristics (insofar as there is a "reason for the trip") then the following elements must be considered as having impact on the elasticity of the demand curve for air travel within a given market; (1) the availability of substitutes; (2) the elasticity of supply complements; (3) the elasticity of the demand for the final product, or "goal of the trip"; and (4) the percentage or importance of the cost of transport relative to the costs and benefits of the total trip or product.

(1) Availability of Substitutes

Obviously, along those routes where only one mode of passenger transport exists, the consumer has no alternative but to use that service if he desires to travel. However, along mainline routes, alternatives exist in the form of trains (often), buses and cars. Therefore, one would expect a more elastic demand for air transport along mainline routes than along, for example, regional routes or along third level operations, ceteris paribus.

(2) The Elasticity of Supply of Complements

Consider the following situation: A consumer is considering a vacation trip to a cottage area. Suppose further that the consumer is

aware that the supply of cottages at this time of year is fairly inelastic. Now, assume that the air fares for his route decrease exogenously. This would tend to increase the consumer's willingness to travel if his demand curve for travel is at all downward sloping. For example, his quantity demanded might previously have been zero, but at the new fares, he might desire one round trip. Alternatively, he might now desire two such trips, rather than one, etc. However, if the supply of cottages is inelastic, such that his additional demand for cottage use will require an increase in the price of renting same for even one period, the total cost of his trip will increase, perhaps to the level that he will now desire only one or zero round trip air services. Thus the more inelastic the supply of a complement, the more inelastic the demand for air travel. (Note, that while the example given is more likely relevant to a third-level air carrier, a similar sort of argument would apply to trunk-type services using, for example, hotel services during a convention time, the height of the vacation season, or during some major sports event).

(3) The Elasticity of Demand for the Final Product

If the demand of the consumer for the "reason for his trip" is highly price elastic, one would expect the demand for transport to be more highly price elastic. Consider, for example, a business trip. Suppose that business expenses were suddenly no longer tax deductible

when they had been previously. If this increase in the cost of doing business causes businessmen to desire fewer business trips, then, obviously, the demand for air transport will also decrease. The more elastic the initial response to the tax change, the more elastic the demand for air travel.

(4) Importance of Transport Costs

If the cost of transport makes up a very small percentage of the total cost of a trip, it is reasonable to assume than an airline could increase costs without having as large an impact on the total trip cost, and therefore on the demand for air transport, than if air transport represented the majority of costs. Insofar as decisions are made at the margin, of course any increase in cost of air travel would put the marginal consumer out of the market. However, for the consumer who was originally in the market and found himself with some degree of "consumer surplus" at the original price, it will probably be the case that he will demand an equivalent amount of air transport and less of some other commodity.

The above discussion implies that the government might wish to intervene within the above areas to make the appropriate changes in the price elasticity of demand for air transport. For example: (1) by increasing or decreasing the number or quality of substitutes for

air travel in the trunk line market, the government can alter the price elasticity of demand; (2) similarly, were the government to determine which goods or services were complementary to air travel for a significantly large group of buyers, it could alter the supply elasticity of those complements and thereby alter the demand elasticity for air travel; (3) if the government, as mentioned above, can determine a large enough group of people with common demands in terms of a common final product, by altering this demand (using, for example, advertising to increase or decrease the desirability of the "goal of transport") it could alter the demand elasticity for air travel; and (4) insofar as the percentage of total cost mechanism holds, by altering prices of other related travel costs, or subsidizing or surcharging air travel costs directly, the government can push more or fewer buyers toward the margin. Alternatively, it could encourage (or discourage) the use of "value of service" pricing, which is inherently price discriminatory, and thus by extracting consumer surplus to a greater (lesser) degree, move more (fewer) buyers to the margin.

Thus, it can be concluded that the government or other regulatory body with sufficient power could substantially influence the demand and the demand elasticity for transport services, even without making use of the most blunt instrument of inserting itself as a sufficiently strong buyer in the market.

Finally, there is the question of the level of demand over time. As was pointed out in the previous two sections, trunk-line air transport can be differentiated from other modes of carriage. Discriminatory pricing, the use of so-called promotional fares, or "promos", serves to increase the quantity demanded. There is often the assumption that, as people get "in the habit" of flying and get used to the advantages of rapid transport, the level of demand over time will thereby be increased, although there has been no conclusive empirical demonstration of the precise causal mechanism. Insofar as a "familiarity" effect is at work, however, a regulatory board can increase demand simply by insuring exposure.

MARKET STRUCTURE: POINTS OF INTERVENTION, SUPPLY SIDE

This section is concerned with the organizational characteristics of the supply side of the mainline air travel market, a consideration of the characteristics of the trunkline carriers which "strategically influence the nature of competition and pricing within this market".³ It will centre on the following characteristics and the manner in which a regulatory agency might influence them: (1) interlocking directorates, etc.; (2) seller concentration; (3) turnover or degree of entry and exit and including (a) freedom of

entry and exit and (b) barriers to entry and exit; (4) product differentiation or standardization, including quality differences; (5) unique factor market conditions, such as intense labour strife, etc., including, therefore, peculiar capacity or cost considerations; (6) peculiar marketing features such as travel agencies, etc.; (7) information and the costs of its dissemination; and (8) organizational characteristics including the attitudes or "objective functions" of producers. Each of these will be considered in turn.

(1) INTERLOCKING DIRECTORATES

The existence of interlocking directorates and similar corporate interrelationships is normally used, within an industrial organizational approach, as evidence of joint decision making and joint information systems. In other words, it is to be expected that were one man jointly on the boards of an aircraft manufacturing company and of an air carrier, *ceteris paribus*, the simultaneous interest in both operations would imply, at a minimum, a "noncompetitive" view of the operations as interrelated. This is not to say, however, that the absence of interlocking directorates implies the absence of joint concern. In the first place, although there are laws which are designed to limit such relationships, those laws may be sidestepped in various ways, including the use of substitute parties, such as relatives or friends. Second, information may ultimately be

viewed as any other good, with a corresponding price or set of prices.⁴ Finally, one cannot discount the existence of such tacit forms of "collusion", as "old school boy networks" and the existence of the notion of quid pro quo.⁵

All of the above reasons apply mutatis mutandis to attempts of the government or other forms of regulatory agencies to minimize direct forms of collusion. However, given this caveat, certain implications can be drawn as to the possible economic results of such governmental intervention.

Consider one possible scenario of government intervention: By the passing of a law outlawing certain forms of "potential collusion creating situations", for example interlocking directorates, the price of collusion is increased. Whereas previously, one man might be able to implement and coordinate his policies in four or five firms, it now takes four or five men to do the same job. (This may be an interesting mechanism for solving executive unemployment!) Therefore, in order to retain control over the decision-making process the individual (or group, were the original situation a cartel) must now rely on (1) such mechanisms of tacit collusion as the aforementioned "old school boy network", meetings on the golf course, or strategy such as the use of quid pro quo's; (2) the use of "figureheads" in the form of relatives, etc.; or (3) active defiance of the new law with

acceptance of the attendant threat of prosecution. Alternatively, the individual or group of individuals may decide that the price of collusion is now too high, and abandon this strategy.

Consider another case, where the government has decided to regulate both the degree of seller concentration (by regulation of entry and exit) and to outlaw interlocking directorates, control mergers, etc. In an industry previously susceptible to collusion or collusive tactics, (i) a pure cartel may now be formed, with the governmental regulatory agency acting as the "court" to enforce the cartel, and perhaps, to ensure that some measure of "the public interest" is taken into account; (ii) a pure cartel may be formed which reacts against the governmental body: that is, the governmental body becomes a countervailing power, or, in the extreme, the adversary of the cartel; or (iii) the government may, by virtue of knowing who the decision makers are, police their actions as a control body which forces them to act as if they were competitors. More will be said in the following chapter about the mechanisms which may be used by the regulatory bodies and the likelihood of which of the above alternatives will result.

(2) SELLER CONCENTRATION

Seller concentration refers to the "share of the market" in the

hands of a limited number of companies. While there are many measures of concentration, the principle behind any measurement of the number and size distribution of sellers, is to give some assessment of the relative degrees of market power in the hands of the various firms in the market.

It is difficult to develop a precise theoretical linkage between the numbers and even the size distribution of plants and the appropriate model of the firm; for example, pure competition can theoretically exist with only one firm. Thus, while it is normally assumed that an industry with many firms tends to be "competitive", a few firms, to be "oligopolistic", and a single firm, to be a "monopoly", these terms can not in fact generally be tied down in numbers or size distribution. However, there is much to be gained from an awareness of these numbers and size distribution as at least an initial step in understanding the behaviour of the market in question.

Further, while a tight theoretical linkage cannot be developed between numbers and a particular model of a firm, certain assumptions can be made in regard to this relationship which seem not altogether unlikely. For example, it is normally assumed that within those markets which are called "purely competitive" and "monopolistically competitive"⁶ that there are large numbers of sellers. The large

numbers assumption implies that seller A is basically certain about the general response of all other sellers, and as such unconcerned about any particular seller B. In the case of pure competition, this results when combined with the assumption of product homogeneity, in the corollary that nothing a given seller does is sufficient to influence the total market. Further, no action of his own will allow him to sell at a higher than going market price. Alternatively, since he can sell all he desires at market price, there is not any reason to lower his price below that of going market prices. In the case of monopolistic competition in the large, each seller views his own market as having a somewhat inelastic demand; that is, he feels he can alter price and thereby alter quantity in unit terms. However, he still believes that any price alteration would have no direct impact on the other sellers, and that he is, therefore, operating in isolation with respect to his pricing policies. Neither of these models seems particularly appropriate to air transport in Canada and the U.S. There are simply too few sellers for each firm to make such an assumption. That is, each is without doubt quite definitely aware that his actions impinge on the actions of others and vice versa.

Moving towards models with smaller numbers of firms, it is normally assumed that somewhere in the grey area between pure competition and monopoly lies oligopoly. Within oligopolistic models, the common characteristic is that there are few enough firms for

everyone to be aware that they exist in a world wherein others exist; further, the other firms will react in some fashion to price, quality, and other changes on the part of a given firm. Oligopolists, however, are classifiable into many types, depending on the anticipated and actual responses of other firms in the industry.

The problem, then, is to determine the most appropriate model of the industry of the Canadian and U.S. air transport industries, respectively.

It is never easy to determine the appropriate model with one study, simply because the models which are designed in micro theory are, in fact, models. Within the regulated industries, however, an additional constraint must be incorporated into the information. That constraint is, of course, the existence of a regulatory body which (1) makes rules and regulations about present and future actions and (2) has in the past made such regulations and rules about previous actions. In this case, therefore, the question is; What is the appropriate model, given that regulation is assumed to exist?

A number of excellent pieces of work have been done with respect to the U.S. air transport industry which integrate this question into the analysis. Caves, for example, ⁷ in his industry study of the U.S. air transport industry, goes about an analysis of the industry

essentially by asking first about the appropriate model of the industry in the absence of regulation, and then revising the answer in light of the existence of regulation. Dealing again with the U.S. air transport industry, Jordan ⁸ argues that trunk regulation has, in fact, cartelized an otherwise relatively large number --but oligopolistic-- industry.

The purpose of this analysis is to test the hypothesis that the Canadian and U.S. air transport industries have developed as they are now because of the regulatory constraints which in the past have acted part and parcel with other operating constraints in the development of the industry as it now stands. Unlike Jordan's and Caves' work, this study will compare the regulated markets of Canada with the U.S. rather than with real or hypothetical unregulated industries. As such, the concern is not the differing models of a regulated versus unregulated industry, but the differences in the Canadian as compared with the U.S. model.

The chief working hypothesis of this study is that the philosophy of regulation in Canada and the U.S. is of such significant difference that similar rules and statutes produce different patterns of air transport development, even with similar infrastructures. It is these differences in the approaches to regulation, seemingly mild in isolation, yet important in totality, which this study seeks to determine and point out.

As will be documented, the control over entry into the air transport markets in both Canada and the U.S. is absolute. Therefore, seller concentration has developed over time along those lines which have clearly been sanctioned by the regulatory agencies. In theory, as pointed out, the actual numbers alone can tell us little, except insofar as they provide information as to which model may be relevant. Within the context of regulation, however, Jordan's argument that there is in fact a cartel in U.S. air transport seems reasonable. Were this the case, one would expect to find little change in concentration over time or drastic shifts which result from a change in the cartel's "agreement". However, the relevant question is what differences appear in the Canadian and U.S. cases in terms of the pattern of seller concentrations. These differences will provide information about differences in the two industries.

It should be noted that *ceteris paribus*, differences in seller concentration will result directly from differences in regulatory policies of entry and exit. For example, by allowing only one carrier to serve a given market, the regulatory body would produce one pattern of seller concentration. The absence of any (entry-exit) regulation would produce another pattern of seller concentration. (In the case of a total absence of regulation, seller concentration will be dependent on the condition of entry and exit and the degree to which barriers to entry exist).

As a general rule, one may say that seller concentration is dependent on (1) "natural" or demand induced barriers to entry and exit and (2) "institutionally induced" barriers to entry which consist of among other things (a) producer induced and (b) government induced barriers. A further consideration of these points will be found in the next section which deals specifically with entry-exit criteria.

(3) ENTRY AND EXIT REGULATION

In the previous sections, some comments concerning the entry-exit regulation have been made, noting especially some of the implications of regulation of entry and exit in regard to seller concentration. This section will deal with this condition in more detail.

It is normally assumed that the easier is entry for individuals or firms not presently in the market, the more "competitive" that industry is likely to be. The "measurement" of the ease or difficulty of entry and exit corresponds to the determination of the "height" of barriers to entry. That is, the higher or the stronger the barriers to entry, the more difficult it is to enter the industry. As mentioned previously, barriers to entry can generally be classified as: (1) natural or demand-induced barriers to entry, and (2) institutional barriers, including (a) producer induced and (b) governmental or legal barriers to entry. Each of these classes, as well as the classification itself, deserves some explanation.

(A) The Nature of Barriers to Entry

Joe Bain defines barriers to entry in the following manner:

"The existence of a condition of entry to an industry which permits established firms to elevate price at least somewhat above a competitive level of costs without inducing new firms to enter obviously reflects the existence of some barrier to entry ..."⁹ (emphasis added).

This definition suffers only from the use of the undefined term "competitive".¹⁰ As Robinson so clearly argued in the 1934 QJE article, "What is Perfect Competition"¹¹:

"...The idea that there is one level of profits which obtains in competitive industries, and that when competition is not perfect profits must exceed this level is clearly untenable...Normal profits are simply the supply price of entrepreneurship to a particular industry. The essence of the notion of normal profits is that when profits are more than normal, new firms will enter the trade and normal profits are simply the profits which prevail when there is no tendency for the number of firms to alter..." (emphasis added).

Thus, it could be argued that barriers to entry are present when established firms elevate price somewhat above the industry's supply price. This definition suffers, however, from two deficiencies: (i) the indeterminacy of a long run supply curve for a noncompetitive industry and (ii) an inability to deal with real ¹² production barriers, which might be termed demand insufficiency or "demand induced" barriers to entry. Each of these limitations must be dealt with before

a useful definition for barriers to entry can be constructed.

(B) Finding the Supply Price

If there are no institutional constraints, that is, if there are no "nontechnical barriers to entry", then the long run average cost curve corresponds to (is equivalent to) the locus of the supply price¹³ at each quantity for any form of market organization, assuming the following things:

Consider the following set of cost curves for a hypothetical natural monopoly:

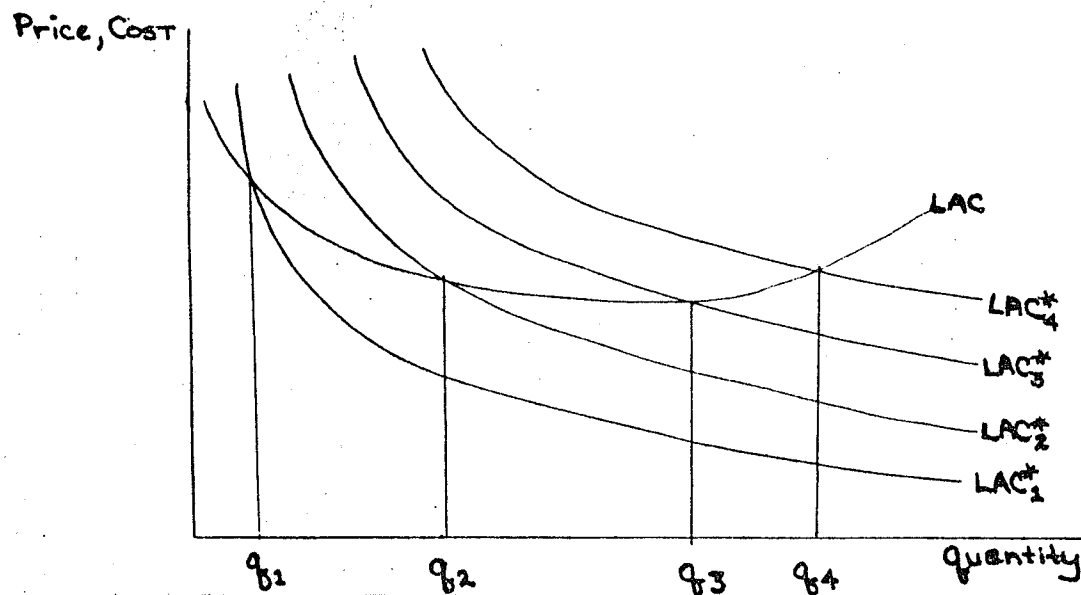


Figure I

where LAC_1 refers to a long run average cost curve drawn with factor prices held constant, but assuming no monopsonistic control. Then, as the monopolist expands output, in order to command additional resources, he must be able to bid them away from other industries. Thus, the true long run average cost, with variable factor prices, is the locus of points drawn above as LAC . (It should be noted here that even were this industry a purely competitive one, the expansion of the industry would affect the factor market prices, were the factor market in equilibrium, ceteris paribus).

In summary, the necessary assumptions are as follows: First, the best available technology must be incorporated into the cost curve. For example, consider once again, the extreme case of the natural monopoly. Were the market organized in a competitive manner, the competitive supply price might be significantly above that of the monopolist. Were the monopolist to elevate price even slightly above the competitive supply price level, there might well be entry at the margin. Thus, it is not necessary for there to be elevation of price above the competitive level for there to exist one form of what is traditionally called a barrier to entry. Merely, the price must be elevated above the monopolist's supply price; that is, he would be able to earn economic profit, but no entry would occur. It is this form of barrier to entry, the so-called "real"¹⁴ (in the Fellner sense) or the third form of barrier to entry resulting from economies

of large scale production¹⁵ to which Bain refers. However, were we to stick to the definition of barriers which includes the term competitive, this form of "barrier to entry" would not in fact be a barrier. That is, price elevated below competitive cost but above the monopolist's supply price is not by his definition determinable as a barrier to entry.

Second, this must be a totally "pure" long run average cost curve in the sense that, (i) factor market prices must be allowed to vary as quantity produced in the industry expands, but (ii) there must be no monopsonistic control of the factor market. As such, the LAC of the monopolist who is also a monopsonist must be redrawn as some level higher than it would be drawn in the actual, "real world" level.

Third, it must be recognized that opportunity costs or the "supply price for entrepreneurial effort" is included in the costs as calculated.

Under these conditions, then, that is price equal to the LAC, as amended, will serve for an appropriate measure of "normal profits" in the Robinsonian sense.

(C) Production Barriers or "Demand Induced" Barriers to Entry

The nature of these "barriers" is as follows: (i) they constitute a barrier which allows elevation of price beyond the supply price (as defined previously to be the minimum price at which a given quantity would be forthcoming), up to the level of competitive costs, and (ii) they exist merely because demand is insufficient to allow more than a limited number of firms in the industry if each firm is to produce with the best available technology; that is, the industries are "natural monopolies or natural oligopolies". These two points can best be made clear with a graphical example. Consider the following case:

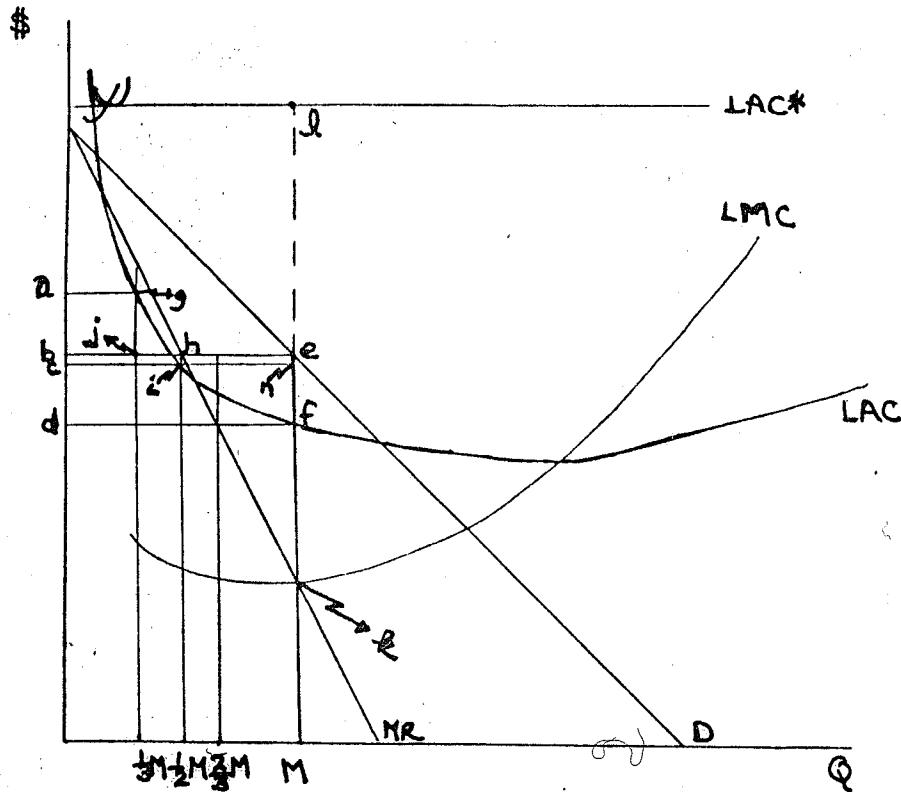


Figure II

Assume the following for Figure II:

- (1) LAC, IMC represent the long run average cost and long run marginal cost curves for a firm operating with the best available technology.
- (2) each producer has one and only one plant.
- (3) the firms are profit maximizers who will cartelize (collude) to maximize joint profit (or minimize joint loss).

In the above Figure, a "natural duopoly" is reproduced. Were only one firm to enter the industry, it would operate where $MC = MR$ at quantity M , price b and make a profit of $befd$. However, at that price, with price elevated above the supply price k , a second firm can reproduce this plant, and both firms (assuming they collude and share the market equally) can produce a total of M , each producing $1/2M$, and continuing to sell at price e . In this case, however, the total profit will only be $bcne$, or $bcih = hine$ for each firm. (Alternatively, the second firm could point this out to the first, perhaps incorporate as a nonprofit organization, and accept a "tax free contribution" of some portion of the original monopolist's profit. Given that this monopolist is producing M , his costs per unit are Mf , and he would be willing to negotiate the "contribution" for any sum up to $bdfe - hien$, at which point the producing firm would be indifferent, or more if the "contribution" is also tax deductible). Note, however, that were a third firm to enter, the best the three firms could do together, if each were actually producing, would be a

quantity of $1/3M$ each, with the associated loss of abj each. Thus, given the above assumptions, this is a graphical example of the "natural duopoly".

In the case given above, however, consider the implications of the following increased demand situation:

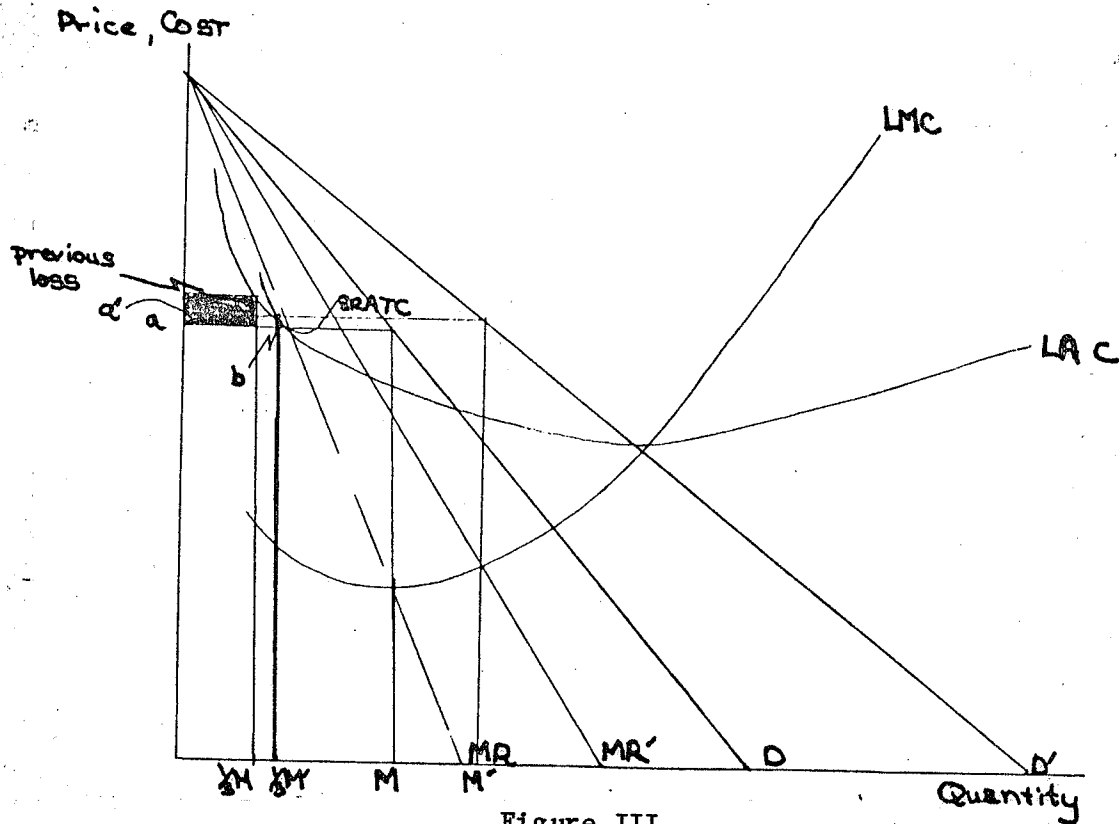


Figure III

Figure III corresponds to Figure II, except that demand has increased from D to D' . As a result, a monopolist would operate where $MR = MC$ at quantity M' , and price a' . This represents an increase in production from M to M' . The market, were three firms to enter and

split the market equally, would now support these three with quantities of $1/3M'$ each at the going market price a' . Note, however, that at the market quantity $1/3M'$ each firm, using the best available technology (that is, choosing the best plant from the one associated with LAC), would make use of the plant which corresponds with the SAC tangent to LAC at b . But at the going market price a' , this corresponds to a zero (economic) profit point. As can be seen from Figure III, it would now be possible for three firms to enter the market, cartelize and split the market equally, and all three make zero economic profit; that is, normal profits.

The conclusions which can be drawn from the above example are as follows: As demand increases, more firms can enter and make zero or positive economic profit in the long run, under the assumption that they are acting jointly to maximize profit or minimize loss. Similarly, as demand increases, more firms can stay in the industry even if there is no collusion. This number is probably smaller than the number which could exist, given collusion. It should be pointed out, however, that were the firms to choose not to collude, depending on the nature of the assumptions made concerning the reaction functions of the differing firms, there may be alternative equilibrium divisions of the market made, or there may be an oscillating structure (one firm enters, another enters, the first drives out the second - or

vice versa - etc.). However, in no case can there be more than two firms which actually operate in the market represented by Figure II, and three in the market represented by Figure III. This can be determined from the facts that (i) this is the best available plant, that is, no firm can produce at lower costs than those represented by LAC, and (ii) the joint profit maximizing situation does just that, it maximizes the total of profit (or minimizes losses), and can be distributed in any way between the operating firms. Production at any point to the left of $1/nM$, that is production by more than n firms, will correspond to an SAC on the LAC at a cost per unit greater than the price. (That is, a loss will occur, which will not be sustained by a firm in the long run). As demand continues to increase, the number of firms which would be sustainable in the market with the use of the best available technology increases. However, as the curves are drawn, it should be noted that a very substantial increase in demand must obtain before more than one firm can exist which could operate at the lowest point on the LAC.

Consider Figure IV:

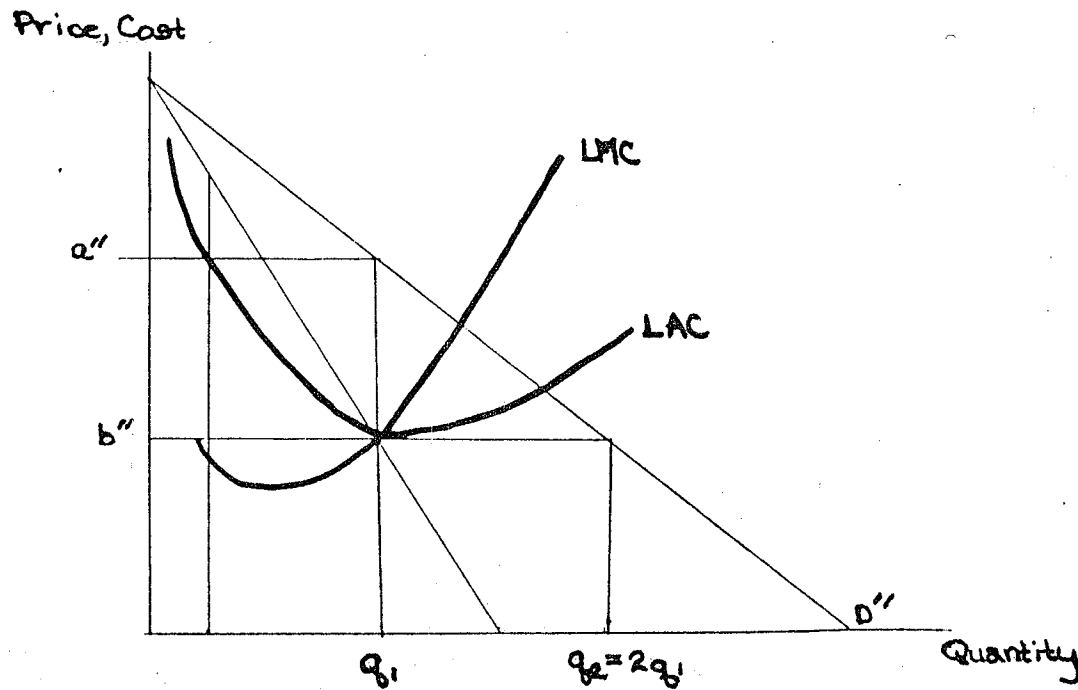


Figure IV

If the demand curve were to increase from D (on Figures II and III) to D'' , a more than two-fold increase in quantity for any given price, the totally unregulated, completely cartelized, equal market share model previously used would give a four firm solution. As drawn, however, an alternative to the four firm equilibrium is a regulated equal market share duopoly, which would produce a technologically, allocatively efficient market, with both firms producing at minimum $SRAC = \text{minimum } LAC^* = LMC = SRMC = P$, (assuming both firms can reproduce plants on the LAC at this point). This

point, however, will not be achieved in the absence of regulation, unless two firms constitute a sufficiently large number to insure that neither is aware of the other, a contradiction in terms of the original assumptions, and unlikely in fact. Even were four firms a sufficient number to insure such ignorance, they would not produce at minimum cost in a stable equilibrium as the market demand is not sufficiently large, given the assumed cost curves.

In order for this industry to be converted to a perfectly competitive market structure, the following change must take place: demand must increase to a point where the market can support a sufficiently large number of producers at $LMC = LAC$, that is at price b'' , to insure that each is ignorant of the other in the sense that each firm operates on the assumption that he is facing a horizontal demand curve, or in other words, sees himself as a price taker. But, the view on the part of a firm that he is a price taker, as mentioned above, requires an increase in demand. Thus, it can be argued that this "barrier" to entry is associated with what might be termed demand insufficiency.

Secondly, as noted in Figure II, with the original demand curve, that is with the original demand side of the market structure, this barrier implies an elevation of price beyond the level of the supply price, as previously defined, but not beyond the level of what might

be termed the "competitive costs". What, however, is the meaning of the term "competitive costs"? Since we are dealing with entry and exit, it must be referring to the competitive LAC. However, given the level of demand, competition could not exist within this market unless it were regulated to be such and the number of firms which were then in the market was sufficiently large as to make each believe that he is facing a horizontal demand curve. Picking some number as being large enough, call it n , the regulatory agency would be able to determine a competitive LAC which followed the LAC of the optimal plant to the left of quantity $1/nM$ and follows along quantity either as a horizontal line from the point $1/nM$ or an increasing curve as factor prices are assumed constant or increasing, respectively. Since the cost curve for the monopoly increases after some point, it may be assumed, to be consistent, that factor prices increase after some point, and, therefore, in Figure II, the "competitive LAC" is drawn as LAC*. It should be noted, however, that in order for this type of barrier to exist, it is not necessary, nor even possible, for the monopolist or cartel to raise the price above b , at the quantity M . It is thus a characteristic of this "barrier" that they allow elevation of the price above the supply price, as previously noted. In fact, however, it would be necessary for the firm(s) to be able to elevate price above the level of p^* in order to call this market phenomenon a barrier by Bain's definition.

Barriers to entry, then, can be identified as follows: barriers to entry are said to exist within an industry when the established firms can elevate price at least somewhat above the supply price (that is the minimum price at which each quantity would be forthcoming). As such, Bain's third class barriers, that is those discussed above will be hereafter referred to as class I, and called natural or demand induced barriers to entry. They are caused by demand insufficiency and produce the so-called natural monopolies, or natural oligopolies of the sort used in the preceeding examples.

(D) Institutional Barriers To Entry

A second class of barriers to entry may be identified as institutional barriers. These barriers correspond to barriers which exist under Bain's original definition given that demand is sufficient to allow the existence of a perfectly competitive structure. An alternative way of looking at them, however, is to use the Robinsonian "gap" as an indication of these barriers¹⁸.

"But quite apart from this confusion [as exemplified in arguments cited] the whole notion of normal profits is beset with difficulties. Mr. Shove has pointed out that there is not one level of normal profits, but two. The level of profits which will attract new enterprise into an industry is usually higher than the level which is just sufficient to retain existing enterprise."

The magnitude of this gap then can be identified as the price elevation which can exist above the supply price, as defined without attracting new firms. Robinson suggests that the appropriate "normal profits" curve may lie equidistant above the supply price curve. However, it is sufficient at this point to note the existence of this gap and put a label to it. In essence, then, the differential implies that a firm desiring to enter a given market cannot reproduce a given plant at the same cost level as that of an existing firm. This increase in cost, as measured by the gap, may or may not be due to an increase in cost for the physical reproduction of the plant, but in any case will serve as an index of institutional barriers to entry.¹⁹

Institutional barriers may be induced by (a) the producer, (b) the government, and (c) other individuals not acting directly in this market, including, for example, individuals selling factors who arbitrarily decide to "support" or "boycott" one or more of the final producers. While these group (c) barriers are undoubtedly relevant in some situations, there is little evidence that they are of importance in regard to the air transport industries in Canada or the U.S. and will, therefore, not be considered further.²⁰

(E) Producer Induced Institutional Barriers To Entry

Within the class of institutional barriers referred to as "producer induced" are the following mechanisms of entry restriction:

(a) illegal or semi-illegal actions, including violations of the Combines Act and the Clayton Act, in Canada and the U.S. respectively; (b) advertising or informationally induced brand loyalties, and (c) ownership or property rights which are producer induced but governmentally sanctioned.

The illegal or semi-legal actions include, among other things, such actions as (i) arbitrary price discrimination; (ii) unfair or deceptive acts, including false and misleading advertising; (iii) exclusive dealerships or tying arrangements; (iv) violence (or threats of violence) to persons or property; and (v) general "attempts to monopolize" including lowering price below cost²¹, price wars, etc. As in (c) above, the government intervenes implicitly. In this case, the existence of a governmental agency designed to define and enforce such actions as are deemed illegal and to institute any remedies therefore is necessary to remove these barriers. These acts are generally explicitly defined as "nasty" acts, in some cases constituting direct violation of the Criminal Code. However, insofar as these actions occur, they will nonetheless impose additional expense (in the form of legal fees, for instance) on any entrant firm

to overcome them.²²

Category (b), or advertising type institutional barriers, are brand loyalties introduced through advertising. It does not matter whether the product differentiation in the minds of the buyer is "real" and developed simply through informational advertising on the part of the seller, or whether it is "created" in the minds of the buyer by standard advertising techniques. Insofar as there is observed differentiation in the minds of the buyers, then additional costs above physical production of the good or service must be borne by a potential entrant to gain a market. Certainly this differentiation is present within air transport on mainline carriers both in terms of (i) differentiation from other levels of carriage, that is regional, charter, etc., and (ii) differentiation from other carriers within the same market serving the same route. In this study, differentiation from other carriers has been assumed to be sufficient to justify defining distinct markets. However, this does not deny that (i) the regulatory authority may, using the appropriate policy measures, alter this market division and (ii) the firms in question may, in spite of regulatory action, serve to break down this classification.²³ The regulatory authority can encourage this division by not allowing direct line competition from other levels of carriage with equivalent service. In the case of regionals operating with similar equipment, for example, they can merely refuse entry to the route in question to the carrier which desires to compete. In the case of charters, buyer entrance restriction to affinity groups,

requirements as to prepayment of certain portions or all of the charges, etc. will serve to differentiate the product. Similarly, in order to break down these differences, the government may remove policies which previously differentiated the product.

Within (c) or the third class of these barriers, the ownership and property rights restrictions serve as barriers to potential entrants. Included in this class are: (i) exclusive control of product designs and construction of same by patents; (ii) ownership of favoured marketing mechanisms or sales outlets; (iii) control or favoured positions in the factor markets of established firms; and (iv) favoured positions in the capital market of established or mainline operating carriers;²⁴ or (v) entrepreneurial superiority due to lower costs of market penetration, sales organization, and maintenance which may be a decreasing function of time of operation within the industry.

Thus producer induced institutional barriers can be put into three classes: (a) advertising or barriers which occur without government support (generally) and with minimal government prohibition; (b) violations or illegal acts which exist as such because the government has chosen to prohibit such actions; and (c) property or other such rights which require government support to continue. Thus even within this class of barriers, there is substantial government intervention.

(F) Government Induced Barriers To Entry

In the above classes of barriers to entry, the government or a regulatory body, by engaging itself in appropriate forms of regulatory action, could raise or lower these barriers. However, they depend on the reaction of the firms to the market situation and their interventions. It should be pointed out that while the entry condition is essentially a structural matter, it is the conduct of the firm in response to a long run phenomenon which determines the barriers. That is, if the firms in the industry have tended in the past to respond in what might be termed a predatory manner, and if the government had tended to support or allow such actions, these barriers will exist. But the existence or nonexistence is a matter of structure. Finally, a government may actively engage in erecting these barriers on its own accord, if it chooses. Again, this is really a "conduct" aspect on the part of the regulatory agency, if any; however, the presence or absence of such governmentally constructed barriers is a structural matter and will be discussed here.

The government can intervene to regulate entry for many reasons including: (i) the desire to determine price, quantity or profit in the industry; (ii) the wish to encourage industry stability; and (iii) the promotion of efficiency in production, whether purely allocative

or some form of distributive efficiency. These reasons, however, deal basically with performance criteria and they will be discussed in Chapters 8, 9 and 10.

The relevant question in response to the entry/exit condition is: In what manner can the government engage in altering the entry-exit condition? We know from the previous section that the government can indirectly alter this condition through the producer, dependent upon the response in terms of firm's conduct. Similarly, a regulatory body can, through information policies or advertising of its own, alter the consumer's or buyer's point of view as to the nature of the product. That is, regulation can also work through the demand side of the market. Alternatively, the government can directly control entry by some form of licensing. In terms of the theoretical analysis, the manner in which the government chooses to go about regulating this condition depends upon the goals it hopes to achieve in terms of such regulation. Given what might be called the U.S. or structuralist point of view, entry regulation becomes the keystone of the CAB regulation. That is, if one argues that structure determines performance in a one-to-one relationship, then it is all important to get the correct structure of the market. In the case where the firms are to be limited, the government must be concerned with not only the number of firms, but with the determination of precisely which carriers (firms) will produce.

Reconsider Figure II. The government has, given these cost curves, the following options: (1) It can allow free entry and, given the assumptions made, two firms, both making a profit, will result. With alternative firm behavioural or conduct assumptions, there might be continual entry and exit as firms make use of predatory tactics in alternation with full monopoly exploitation. Now assume that a stable structure could only result from licensing entrants. Let the "objective third party", that is the government, specify who and how many and where entry can occur. Then, (2) the government can license firms to produce. Given the second option, the government must then determine (a) whether to attempt to get a competitive structure, in terms, for example, of the curve LAC^* ; or (b) whether to attempt, for example, to license three firms and subsidize them, or to permit only one firm and tax away its profit, or to choose any one of a wide variety of numerical options in combination with the appropriate tax and subsidy schemes.

In the case where the government opts for "competition" in the sense of picking an appropriate number of firms to be that number implied by LAC^* , then the profit maximizing point will be in fact a loss minimization point and substantial subsidization will be required to insure operation. However, were the government to recognize this situation as a "natural duopoly" situation, it could then license two firms and allocate the market in some fashion (or allow the firms to

determine some allocation) which ensures both will continue to operate. As long as (i) the firms do not attempt to drive each other out of business in ways which might attract new potential entrants by, for example, the presence of cyclically alternating monopoly and duopoly and (ii) the cost curves remain such as to allow a maximum of two firms to remain in the industry over time, there will be no need for further action on the part of the government in the barrier-creation business. In fact, insofar as the two previous conditions are met without government intervention, the government has in fact not intervened in any substantive matter. If, however, the government were to enter a historically "destructively competitive" industry, license the two firms in question, and specify as a condition of this license that (a) the market will be divided as determined by the government, or (b) there will be no more destructive actions on the part of the licensed firms, then the government would have taken an active part in the creation of barrier to entry.

The case where the government itself sets and maintains barriers, given the cost curves and demand curves in this model, would be illustrated in the following manner: Suppose the government were to opt for a single firm. Now suppose there is sufficient demand, given the cost curves, to support two firms. Were the government then to refuse to license an additional firm, it would have created an absolute barrier (assuming it can enforce the entry bar) on its own.

It should be noted at this point that another alternative for entry barriers which gives additional spin-off advantages is what might be called the "chosen-instrument" policy. In this case, for example, let us assume that the government allows entry of one private firm into the industry and then creates or allows the creation of one public or government firm. If the regulatory governmental agency has the power to influence the actions of the public corporation, it can effectively control entry of other firms (by having created a duopoly) and enforce the type of behaviour necessary (that is, no cut-throat competition, etc.) to ensure the continued existence of the structure which it chooses to be optimal given the production, cost, and demand constraints which prevail.

(4) PRODUCT DIFFERENTIATION: Supply Side

In some senses, the division into mainline, regional, and local on one hand, and charter, scheduled, and so on on the other, represents a division of the air transport industry along product lines, into what are more or less homogeneous products. Theoretically, the existence of heterogeneous products (which are, of course viewed to be, and therefore considered as, heterogeneous in the buyers eyes) allows each firm some greater degree of control over the price he charges, through his increased ability to spin-off a

relatively more inelastic demand curve for his market demand from that of the total industry demand, *ceteris paribus*. However, costs may be associated with the creation of a heterogeneous product. For example, (i) advertising expenditures necessary to identify the product as unique and build up brand name loyalty; (ii) the development of any new technology or retooling necessary to produce this product; and (iii) provision of additional service characteristics (such as inflight movies, or free dinners) requiring additional resources. As such, one can view the air transport industry as having two levels of product differentiation: (1) the basic market characteristics of spatial and temporal differentiation, which has been assumed to be sufficient to allow separation of the market for air transport service into a series of markets and (2) differentiation of service quality which is not sufficiently strong as to constitute distinct markets. Within the regulatory framework the latter types of differentiation can be controlled, insofar as the government has the right to regulate (a) service standards; (b) equipment usage; (c) prices or profit levels; and (d) classes of service.

Insofar as the government controls prices and/or profits, any form of product differentiation can be controlled by setting prices at such a level as to ensure that additional costs of this nature will not be borne by profit maximizing firms. The implications of this pricing policy, however, may be inconsistent with those desired for

other reasons: (a) the additional costs, were they expended, might increase total demand to such a level as to allow the firm to keep at the specified price level without making losses, if there exists an initially declining cost curve; (b) the price level necessary to control expenditures in this fashion might induce trade-offs into service or other product differentiation plays away from other minimum service standards or the transition to the use of newer technologies; or (c) the price level may not be at the level which for allocative or distributive efficiency purposes would be optimal. If the government additionally controls service standards and equipment usage, (b) above would not likely be a problem. Similarly, should the firm demonstrate that (a) above is likely to occur, then the advantages of the demand increase which result from the one firm differentiating its product may well result in all firms changing their product lines in that fashion -- in which event, no differentiation ultimately results. Finally, however, the government may have the power to simply specify what type of air transport service will be produced, or what changes in service will be allowed, in which case it can control any potential product differentiation absolutely.

(5) FACTOR MARKET CONDITIONS

One oft reputed situation in the case of a natural monopoly is

that which is caused by factor market control by the monopolist. The situation can be shown graphically as below:

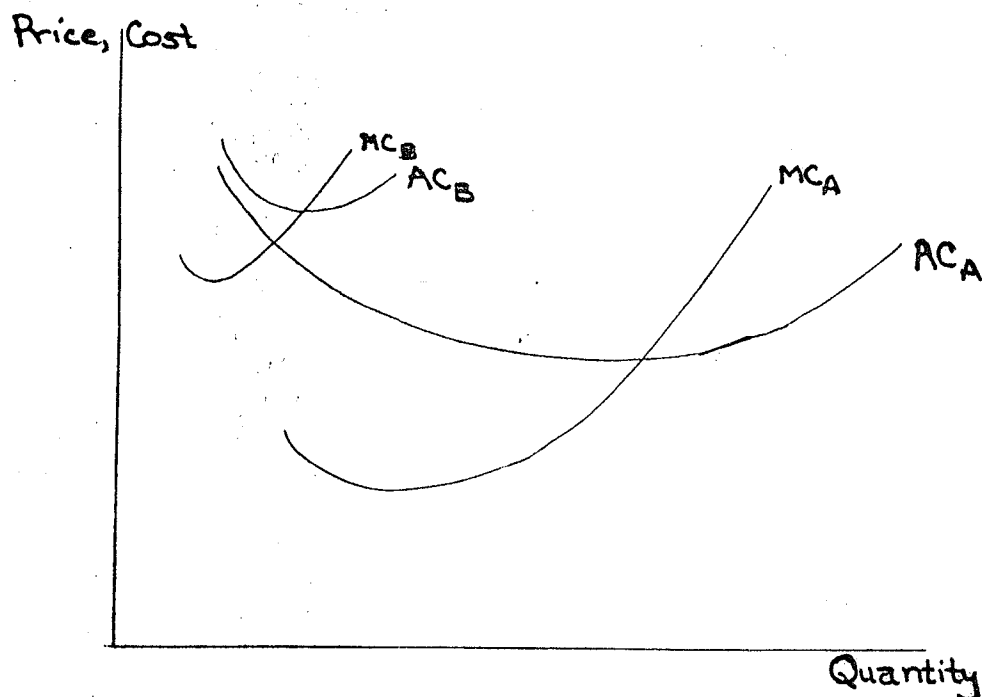


Figure V

As can be seen, firm A has an absolute cost advantage over any other firm. Looking at Figure VI, which is the same as Figure V with the addition of the relevant demand curves, if the relevant market demand is d , this is a case of a natural monopoly. Were the demand curve to shift out to D' , however, there would be room for two firms to operate, the first making a profit and the second making zero economic profit. Whether or not a stable duopoly would exist depends upon the responses of the potential entrants.²⁵

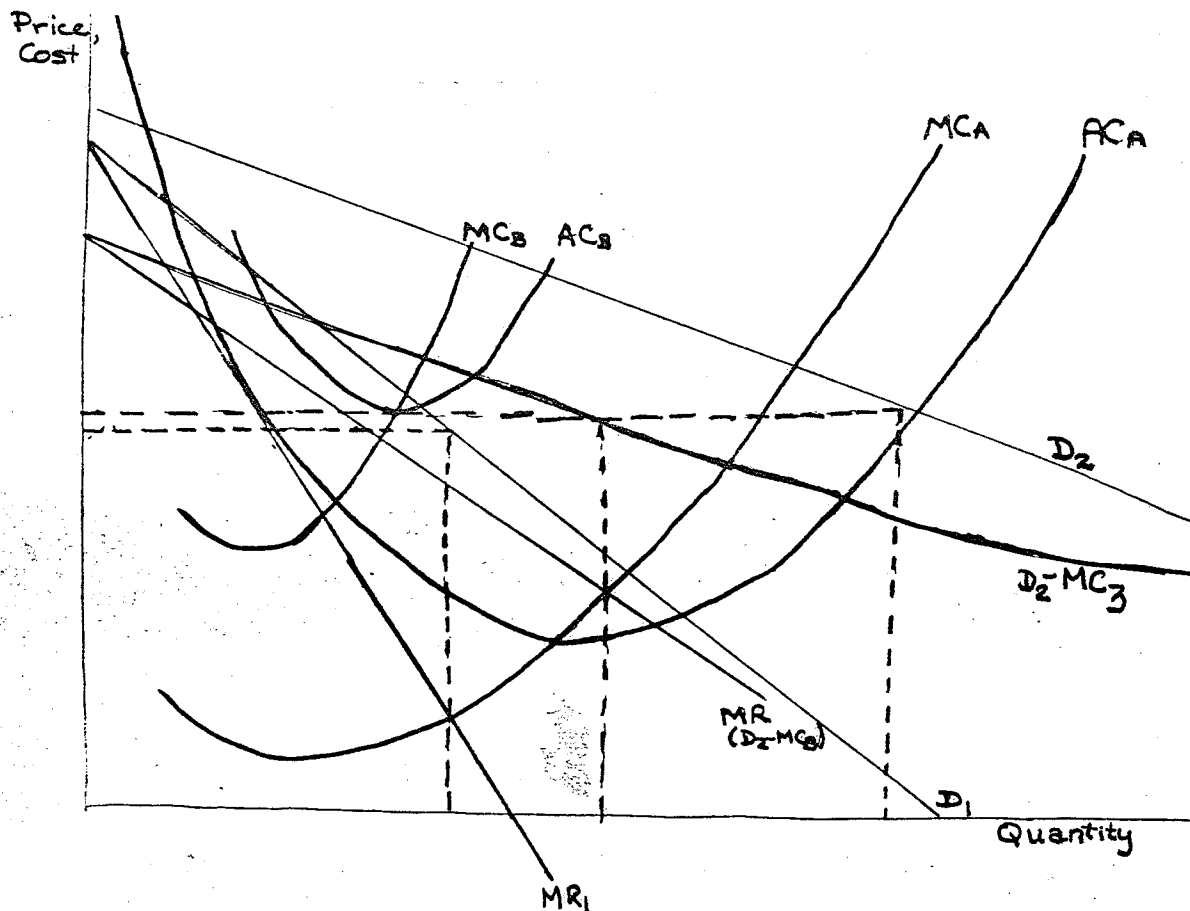


Figure VI

With the demand curve D' , there is the following situation. Suppose that Firm A is aware that firm B has entered the industry and that it is not possible²⁶ or desirable²⁷ for Firm A to attempt to drive him out. Further assume that firm B is a price taker (in other words, this diagram represents a price leadership model). Then the best situation which A can obtain is that share of the market which

allows B to make zero economic profit.²⁸ Were he to charge a higher price than this, firm B would make a profit and other firms would attempt to enter, driving down the market share and profits of both A and B. At a lower price, firm B will be driven out of the market, but to maintain the monopoly position, firm A would have to maintain this lower price and would make a lower profit level than by adopting a tolerant attitude toward B's existence.

At the price p' , therefore, firm B is making zero economic profit and producing quantity s_B . (The price p' is obtained by A, as the price leader, by utilizing the demand curve which takes into account the production of firm B and is thus the solid line XYD' . This schedule can be determined by using the supply curve of firm B to determine what quantity would produce as a price-taker given various prices of the product). Were the demand curve at D, rather than at D' , there would be no possibility for firm B to enter, as the profit maximizing quantity is below the position of QS_A .

How then does it come about that firm A can have an absolute cost advantage over all other potential entrant firms? There are several possibilities, including: (1) factor market control, as previously mentioned, including, for example (a) total control such that the firm A can sell factors to other firms at purely price discriminating levels and charge itself a lower price;²⁹ (b) particularly

advantageous contracts with factor owners due to such new conditions as (i) inflation, (ii) unionization, (iii) changes in ownership, or transference of property rights, or (iv) increased demands causing increased price, which allow firm A, operating under a longstanding contract, to produce the product more cheaply than firms which have recently negotiated new contracts; or (c) particular contracts which may be obtained by one firm; as, for example, a contract with an enforceable no-strike clause in an industry subject to intense labour strife; (2) other lower production costs due to such conditions as (a) particularly astute management or entrepreneurship; (b) superior and controlled (as, for example, through patent or other property rights legislation) technical processes, which were previously discussed in the section dealing with barriers to entry. As such, additional barriers can be created through some degree of factor market control.

As in the case of the previously mentioned barriers, the government can step in to alter the conditions which lead to the lower cost curve of A, or it can tax away the profit of A, or it can further increase the cost directly by surcharging the use of its controlled factor or process.

(6) PECULIAR MARKETING CHARACTERISTICS

Within air transport, perhaps the most striking mainline carrier marketing characteristic is that of travel agencies. Assuming there is no additional cost to the consumer, this service would be expected to increase demand. This increase in demand is traceable to the ease with which these agencies can plan and organize an entire trip, providing an additional service to the consumer at no additional money costs. It should be noted that this increased demand could be smaller than otherwise anticipated were the service to impose: (1) the direct cost of the service on the part of the consumer; that is some consumers who were marginal buyers with the additional service implied by the travel agency would drop out of the market were the cost increased for the total package of trip planning plus the trip itself; (2) additional nonmarket diseconomies on the part of the consumer in the form of (a) additional cost of travel to agency (note that this might be less than travel to the airport were one not able to phone in orders for reservations), (b) inconvenience from travel agency such as overselling tickets, badly laid trip plans with excess stopover time, etc., (c) any difference in reservation policies which might include: (i) no guarantee of reservation, or incomplete linkages between the travel agencies and the airlines; (ii) different payment policies, including prepayment, partial prepayment, etc.

In any particular case above, one could set up, for each potential consumer, the following decision making equations to determine any increase in demand resulting from the existence of a travel agency network.³⁰ Assume:

$$(1) U^i = f(Q_1, Q_2)$$

$$(2) P_1Q_1 + P_2Q_2 = M$$

U^i = satisfaction level of the i^{th} consumer

where Q_1 = quantity of air travel services

Q_2 = quantity of all other goods and services

P_1 = price of air travel services

P_2 = price of all other goods and services

M = the consumer's budget constraint

The utility maximization requires:

$$(3) \frac{\frac{\partial f}{\partial Q_1}}{P_1} = \frac{\frac{\partial f}{\partial Q_2}}{P_2}$$

Let Q_1 be transformed to Q_1^* by $Q_1 + Q_1 + \gamma$ where γ is some measure of "quantity of service from travel agent service". Then:

(4) $U^i = f(Q_1^*, Q_2)$ where $Q_1^* \geq Q_1$ for all i as any consumer can choose to ignore the travel agent and go directly through "normal" channels.

Suppose the i^{th} consumer has an associated risk that Q_1 is not all it seems; he can then discount Q_1 by his expected risk β :

$$(5) U^i = f[(Q_1/1 + \beta), Q_2]$$

If additionally, there is some price increase associated with the purchase of air travel service, P_1 becomes $P_1^* = P_1 + \beta$ where β is the cost of travel agent service.

Then:

$$(6) \frac{\frac{\partial f}{\partial \left[\frac{Q_1}{1 + \beta} \right]}}{\frac{\partial f}{\partial Q_2}} = \frac{P_1^*}{P_2} \quad \text{or} \quad \frac{\frac{\partial f}{\partial \left[\frac{Q_1}{1 + \beta} \right]}}{\frac{\partial f}{\partial Q_2}} = \frac{\frac{\partial f}{\partial Q_2}}{\frac{\partial f}{\partial Q_1^*}}$$

in equilibrium, as previously.

Note, then, holding consumer tastes and the prices of all other goods constant that the consumer will buy more air transport as:

$$\frac{\frac{\partial f}{\partial \left[\frac{Q_1}{1+\beta} \right]}}{P_1} > \frac{\frac{\partial f}{\partial Q_1}}{P_1}$$

Given the demand side alterations above, the impact of travel agencies next must be calculated for the supply side. Since travel agencies are not generally nonprofit organizations, there will typically be some arrangement made for a proportion of the ticket price, a flat rate, or some other form of payment made to the travel agent for his operations. Depending on the arrangement, varying alterations in the cost of selling air tickets will occur. However, in any case, the cost curve will increase for the sale of those tickets made through the travel agency. Consider for example, the case of a flat fee per ticket. If the firm knows the proportion of its sales of tickets which would be made by the travel agency, it could then determine an increased cost curve as below. In Figure VII, LAC, with the per ticket increase of (a) equal to the total payment to the travel agent divided by the quantity of passenger-miles sold, becomes LAC*.

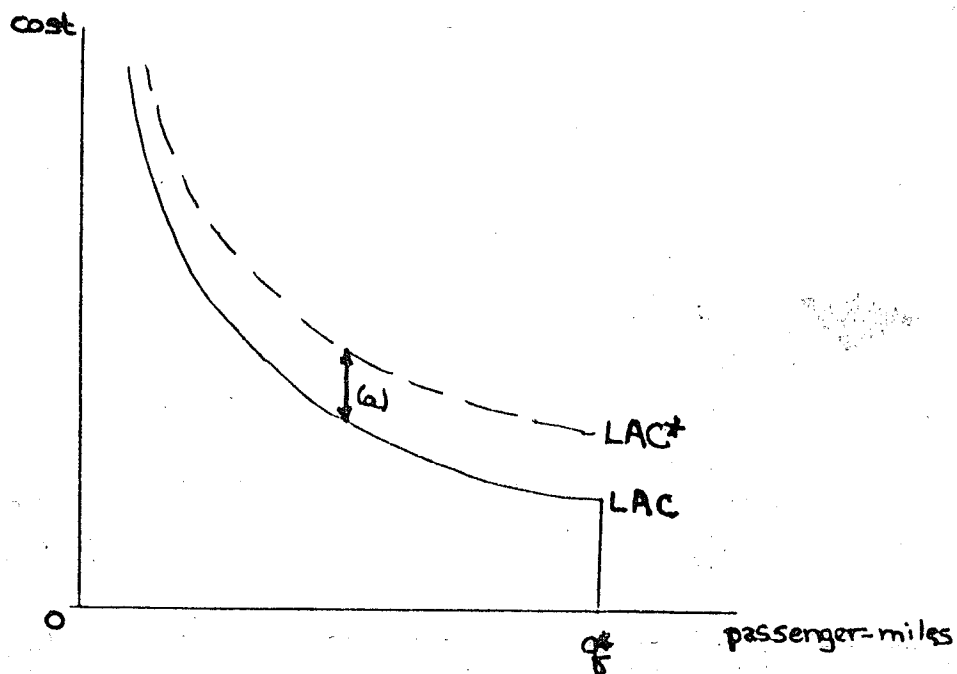


Figure VII

Similarly, one could draw cost curve increases corresponding to any form of payment one wishes to devise. Theoretically, the costs to the firm may actually go down, insofar as there are such externalities from travel agent sales as: (a) a decrease in advertising costs necessary as travel agencies bear some portion of advertising expenditures for their own purposes with a spin-off effect in terms of the carriers; (b) a decrease in the necessary carrier sales staff, and therefore in administrative overhead costs associated with the maintenance of that sales force.

It should be noted that the government can, by altering the rules on travel agency sales, determine the demand increases or decreases and the cost increases or decreases by the appropriate changes in the following manners: (1) increasing demand by (a) increasing the desirability of travel agent services through advertising; (b) decreasing risk associated with the use of travel agents by guaranteeing services in a costless or minimum cost manner; or (c) decreasing the price by rebating expenses to the consumer, improving access to agents, etc., to increase demand (or the reverse to decrease demand), and (2) by subsidizing travel agencies directly or indirectly (for example, through rebates to the air carriers which sell tickets through the agencies) to decrease costs (or the reverse to increase costs).

(7) INFORMATION DISSEMINATION

The theoretical analysis of information dissemination and the ease (or relative cost) of same is essentially identical to the case of advertising. Since the discussion of advertising encompassed informational advertising, information dissemination has been discussed previously and will not be reconsidered in detail at this point. However, it should be noted that the government may feel it necessary to force the release of certain sorts of information,

including, for example, full details on the requirements and costs of package trips.

(8) ORGANIZATIONAL CHARACTERISTICS: The Objective Functions of the Firms

There have been several references in the preceeding portion of this chapter to the reactions of firms and entrepreneurs to the actions of other firms. At some point, however, comments on the psychological makeup of the various actors in the market and the linkage between the mental state of the participants cease to be descriptive comment relevant to market structure and begin to impinge upon the decision-making character of market conduct. Varying degrees of reactions of entrepreneurs could be put into the concept of structure, including (1) degree of recognition of other firms and their entrepreneurs; (2) the aims of the firm, (for example, profit maximizing versus sales maximizing); and (3) the reactions to every conceivable action on the part of firm i by firm j .

For the purposes of this analysis, however, the individual reaction functions of particular entrepreneurs will be considered as essentially conduct dimensions. This approach is adopted for several reasons, including the following: (1) Insofar as air transport firms are generally corporations, the presence of one individual or group of

individuals, while important in some time period, is not permanent; (2) even with a single individual, the "psychological state" may vary over time and experience; and (3) insofar as there is a one-to-one linkage between structure and conduct, and between conduct and performance, it is basically unimportant where this analysis takes place.

However, insofar as there are relatively few mainline carriers, and insofar as a dominant pattern of objective functions can be determinable in the industry, it is convenient to consider the objective functions prevalent at any given time as elements of structure. These objective functions can include (a) the traditional profit-maximizing concern, or a profit constraint put on top of, as a constraint, to one or more of the following: (b) sales revenue maximization; (c) personal (entrepreneur or group) utility maximization (with the concomitant consideration of Liebenstein's X-inefficiency); (d) output maximization; and a variety of other possibilities including, for example, growth maximization in all types including value of corporation, technological advancement, etc.

In essence, the objective functions of entrepreneurs within an industry, must be considered insofar as it is necessary to determine the appropriate model of the firm (perfect competition, monopoly or cartel, oligopoly of the small or large). Certainly it would be

inconsistent with the normal definitions of the long-run, purely competitive model to have utility maximization if the utility function included other than pure profit. The implications of these objective functions will be discussed further in the next section, dealing with conduct. It is with respect to policies that decisions are made which are dependent not only on the external and internal, demand side of the market, but on the reactions and counterreactions of various firms within the air transport industry.

Finally, it should be noted that in Chapter 5, dealing with the policies of regulatory agencies, a similar sort of objective function analysis must be carried on in terms of how the Boards see their functions.

FOOTNOTES

1. Sosnick, S.H. "A Critique of Concepts of Workable Competition", Quarterly Journal of Economics LXXII (August, 1958), 380-423.
2. Such consumer initiated concentrations do exist where there is a substantial "reward" to them, as for example, is evidenced by the case of affinity group charters. Further, the payment of fixed commissions to travel agents and the restrictions imposed on the resale price of tickets have limited the development of secondary (or arbitrage) markets when such groups of direct buyers might have been brought together by this travel agent. That is, the transactions costs are generally too high for individuals to collude in this fashion and these regulations serve to increase the transactions costs to travel agents and the like to the extent that such markets do not develop.
3. Bain, Joe S. Industrial Organization, New York (John Wiley & Sons, Inc., 1959) p. 7.
4. In general, as long as the expected marginal return from information is greater than the expected marginal cost (that is, the probability of getting caught, weighting the fine if caught) one would expect such information flows to occur. c.f. D.M. Lamerton, ed. Economics of Information and Knowledge, (London: Peguin, 1973) or a more complete discussion of the economics of information.
5. c.f. Porter, J. The Vertical Mosaic University of Toronto Press (Toronto: University of Toronto Press, 1965) for a classic discussion of interrelationships in Canadian corporate life.
6. "Monopolistically competitive" in this context refers to Chamberlin's monopolistic competition in the large.
7. Caves, R.E. Air Transport and Its Regulators (Boston: Harvard University Press, 1962).
8. Jordan, W.A. Airline Regulation in America, Effects and Imperfections (Baltimore: Johns Hopkins Press, 1970).
9. Bain, loc. cit, p. 239
10. The elevation of price over "competitive" costs must be expected to produce profits. Were this not the case, there is no reason to assume that entry should be induced.
11. Robinson, G. "What is Perfect Competition," reprinted in W. Breit, and H.M. Hochman, Readings in Microeconomics, (New York: Holt, Rinehart and Winston, 1968) p. 237.

12. In the Fellner sense. c.f. W. Fellner, Competition Among the Few: Oligopoly and Similar Market Structures (New York: Knopf, 1949).
13. That is, the minimum price at which that quantity would be forthcoming.
14. In the Fellner sense once again.
15. Bain, J.S. Industrial Organization. op. cit. p. 241.
16. This assumption is made for simplicity of analysis only. It could be removed, but only at a cost in terms of complexity, without altering the basic analytic implications.
18. Robinson, op. cit., p. 199.
19. c.f. J.S. Bain, "Pricing in Monopoly and Oligopoly," American Economic Review XXXIX (March, 1949), pp. 488-464. for a discussion of his limit price model, a model which incorporates this gap as its basic feature.
20. Additional subdivisions which include (a) technical barriers, such as roadbed construction for railways, i.e. sunk costs which would enter into the cost of a new entrant but are sunk in terms of an established firm, or other forms of one-time transfer costs, including the costs of going out of business; and (b) buyer induced or demand side preferences, which grow out of real product difference, are deemed basically unimportant in the air transport industry as the market has been defined, and are thus left out of the discussion.
21. See the A & P case. U.S. versus The New York Great Atlantic and Pacific Tea Company et al 67F. Supp. 626 (1946); 173 F2d 79 (1949).
22. For example, X's false or misleading action induces some people to decide that brand X is superior. When Y enters the market, he may now have to advertise to woo away buyers who, in the absence of X's action, would have purchased Y at its originally intended price.
23. Consider the impact of granting traditionally mainline runs to regional carriers, as for example, the granting of Winnipeg - Toronto return now being served by a regional carrier Transair. Insofar as there are "imagined" service differences which serve to enhance any "real" differentiation, consumer experience may well tend to break down the initial market division.
24. Bain, Industrial Organization, loc. cit. p 240

25. The conditions under which this equilibrium would be reached require all potential entrants to have cost curves at or above that of firm B, the second entrant, and to be aware that there is no price or profit signal implied by the existence of economic profits to firm A.
26. Depending on the relative positions of the demand and cost curves it might not be profitable. In this case, it would be, excluding the possibility of court action, etc.
27. It might be the case that were B to leave the market, A would be prosecuted for monopolization.
28. If there are other companies with cost curves identical to B, it would not be wise to let the price increase to such an extent that B makes a profit would over serve as an indicator to other firms to attempt entry.
29. c.f. A.M. Cartter, Theory of Wages and Employment, (Homewood, Illinois: Richard D. Irwin, 1959), pp. 66-70.
30. It is possible to introduce both uncertainty and decisions over time in a considerably more sophisticated fashion than which follows. The approach taken here, however, is entirely sufficient to demonstrate the desired results. For a more advanced treatment, see J. Hadar, Mathematical Theory of Economic Behaviour, (Reading, Massachusetts: Addison-Wesley, 1971), pp. 209-284.

CHAPTER FOUR

POINTS AND IMPLICATIONS OF REGULATORY INTERVENTION: MARKET CONDUCT

In the previous chapter, the dimensions of market structure, some potential points of regulatory intervention, and some implications of this intervention, were discussed, with particular reference to the air transport industries in Canada and the U.S. In this chapter, a similar analysis will be carried on with respect to the conduct of the participants in the market.

Returning to Bain's definition of market conduct, we are concerned with,

"the patterns of behaviour which (enterprises) follow in adapting or adjusting to the markets in which they sell or buy..."¹

Insofar as buyers are more than simply price takers, it would be necessary to study the manner in which they respond to changes in the market so that more generally, market conduct might be defined as:

"the patterns of behaviour which the participants follow in adapting or adjusting to the markets in which they sell or buy..."²

In this section, these patterns will be discussed with particular reference to the air transport industries in Canada and the U.S., and with reference to the potential points of governmental intervention and the implications of that intervention in regard to these behaviour patterns.

POINTS OF INTERVENTION, CONDUCT: THE DEMAND SIDE

The CTC, MOT and the CAB are charged with the protection of the public interest in the matters over which they have jurisdiction. The assumption behind such charge is that the buyers in this market are price takers. That is, they are assumed to correspond approximately to the characteristics of the normal atomistic buyer in a market. As such, they take the prices offered as givens, and perform the normal utility maximization method (if implicitly) to insure that they achieve the most satisfaction from, for example, air transport consumption, given the market price and their perceived satisfaction from the consumption of the service of air transport in the creation of time and space utility. These actions will be carried on even in the face of "unreasonable" price discrimination, predatory practices, etc.

Certain techniques of intervention, if known and continued over time, might have an impact on the manner in which even atomistic buyers respond to changes in the market. For example, if it is known that rates within submarkets are regulated in such a manner as to insure that fares between points A and B will always be identical, regardless of the carrier utilized, search and information costs are diminished. Similarly, if the Board allows price discrimination of a type which, given enough information as to the mechanics thereof, individual consumers may be able to manipulate (by switching from one class to another, for example, perhaps at some given cost in terms of time of travel), one would expect trade-offs between groups to occur over time. However, within the basic construct of domestic scheduled trunk operations, there appear to be few ways in which intervention could work directly to alter patterns of conduct. Similarly, there seems little direct buyer intervention into the conduct of the market's decision-making processes.

POINTS OF INTERVENTION, CONDUCT: THE SUPPLY SIDE

In particular, those aspects of market conduct which will be considered include: (1) What are the principles and methods employed by the firm (or group of firms) in determining the price, output configuration, including the existence of discriminatory pricing, if

any?; (2) What is the product policy?; (3) What is the sales promotion policy?; (4) What are the means of coordination and cross-adaptation of sales, price, and product policies, if any?; (5) What about the level of R and D expenditures?; and (6) Are there predatory practices, and if so to what extent? Each of these aspects will be discussed in some detail below.

(1) PRICING POLICIES

This section is concerned with the manner in which firms choose the price output configuration, given their cost and demand curves. In particular, the following mechanisms for pricing will be discussed: (a) pure profit maximization in one market; (b) first, second and third degree price discrimination of the pure profit maximizer within relevant submarkets; (c) "value of service" versus "cost of service pricing"; (d) average versus marginal cost pricing; (e) sales maximization; (f) output maximization; (g) the rate of return maximization. (With a given set of cost curves and demand curve, profit is determined once the price, output configurations are determined. Therefore, the last three types of objective functions, which typically operate subject to a profit constraint, will be discussed in terms of a profit possibility curve).

In the "pure" cases within traditional micro theory, that is, monopoly and pure competition, the firm acts as a simple profit maximizer, at the quantity obtained by setting $MR = MC$. In the case of pure competition, of course, since the firm demand curve is effectively horizontal, $P = MR = AR$, so that this equilibrium represents the $P = MC$ pareto optimum equilibrium of introductory economics.

Similarly within oligopoly models, particularly exemplified in cartel and price leadership models, one also finds examples of pure profit maximizers who, having solved the question of how their rivals should be viewed, and how those rivals' actions should be responded to, derive their own demand curve and proceed to profit maximize in the normal fashion. (A series of these forms of model exists, including the Sweezy kinked demand curve model, the Chamberlin monopolistic competition and duopoly models, etc.). Even in some of the more intricate oligopoly models, the normal assumption is that of pure profit maximization. The difficulties which are inserted into these models stem principally from the difficulties of not knowing exactly how rival firms in the industry will respond to the actions on the part of the firm in question, or to exogenous perturbations.

A more interesting set of profit maximizing equilibria results in

the cases of price discrimination, which can occur in any of the maximizing or satisficing models. For the present, price discrimination will be discussed only with respect to the simplest form of pricing; that is, profit maximizing in the absence of concern about rivals' reactions, as typified by monopoly or cartelized oligopoly cases.

(a) Price Discrimination

There are three traditional classes of price discrimination: (1) third degree price discrimination which exists when a firm can differentiate two groups of buyers; (2) first degree price discrimination, when the firm can extract all of the consumer surplus by all-or-nothing bargains; and (3) second degree price discrimination which is essentially some combination or in-between stage between first and third degree.

Graphically, third degree price discrimination is shown in Figure VIII.

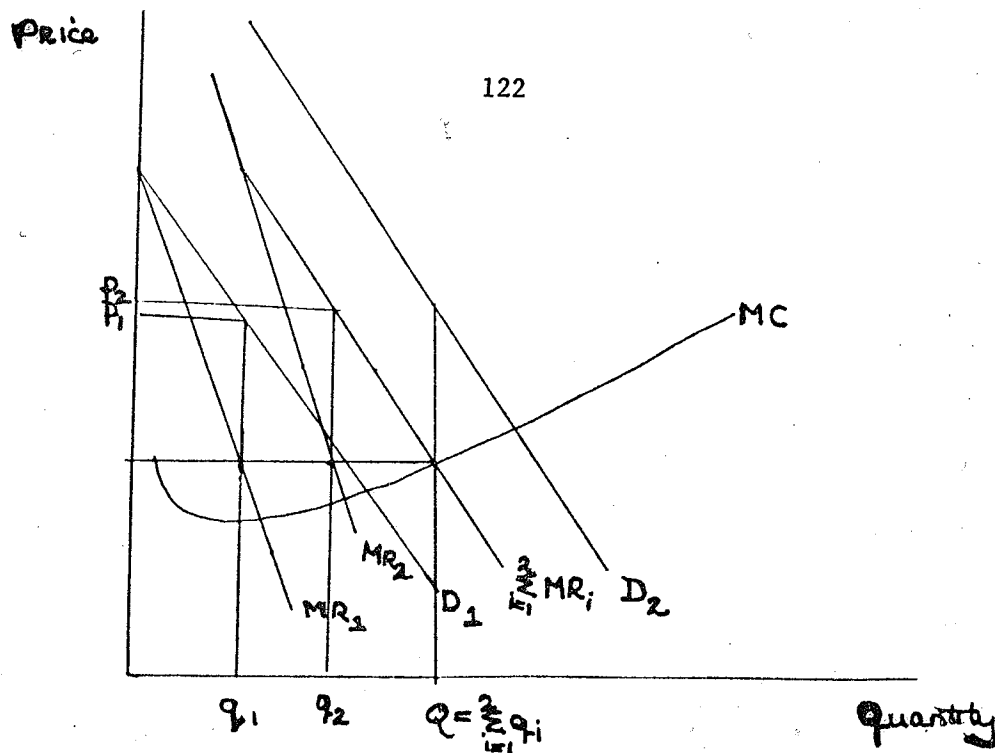


Figure VIII

As can be seen from the diagram, the profit maximizing situation occurs when total (joint) MR is equated to MC, such that MR in each submarket is set equal to MC from the MC which equates to joint MR. Obviously, this sort of price discrimination can only occur and is worthwhile only when buyers are separatable into two distinct groups with demand curves of different elasticities. Additionally, no resale of the good or service must be possible, or arbitrage would take place. In the case of first degree price discrimination, where the buyer can deal with consumers individually, he can theoretically extract all of the consumer supply by all or nothing offers. This is graphically shown in Figure IX.

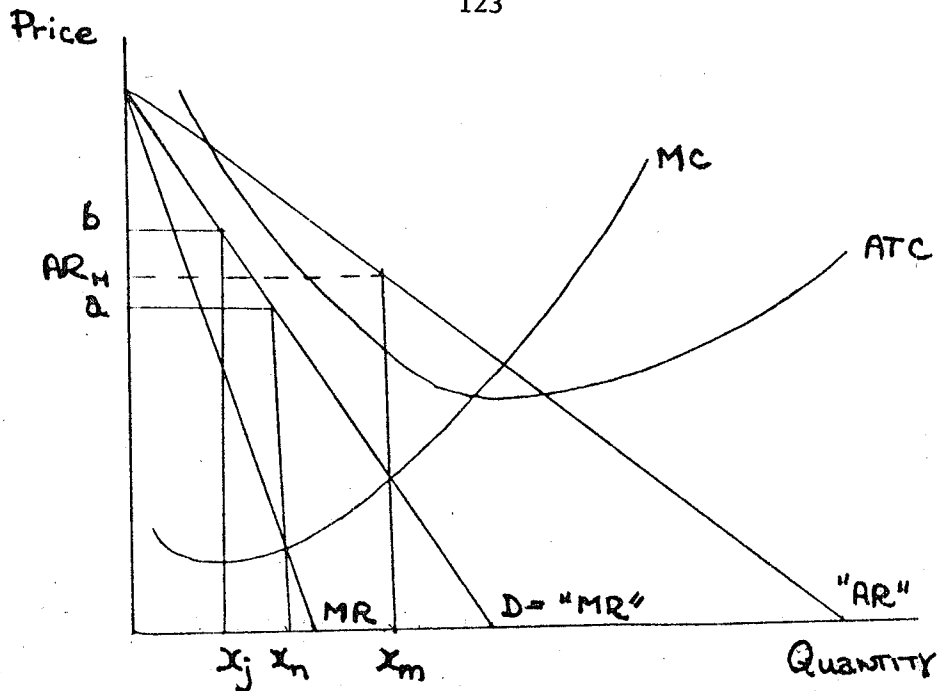
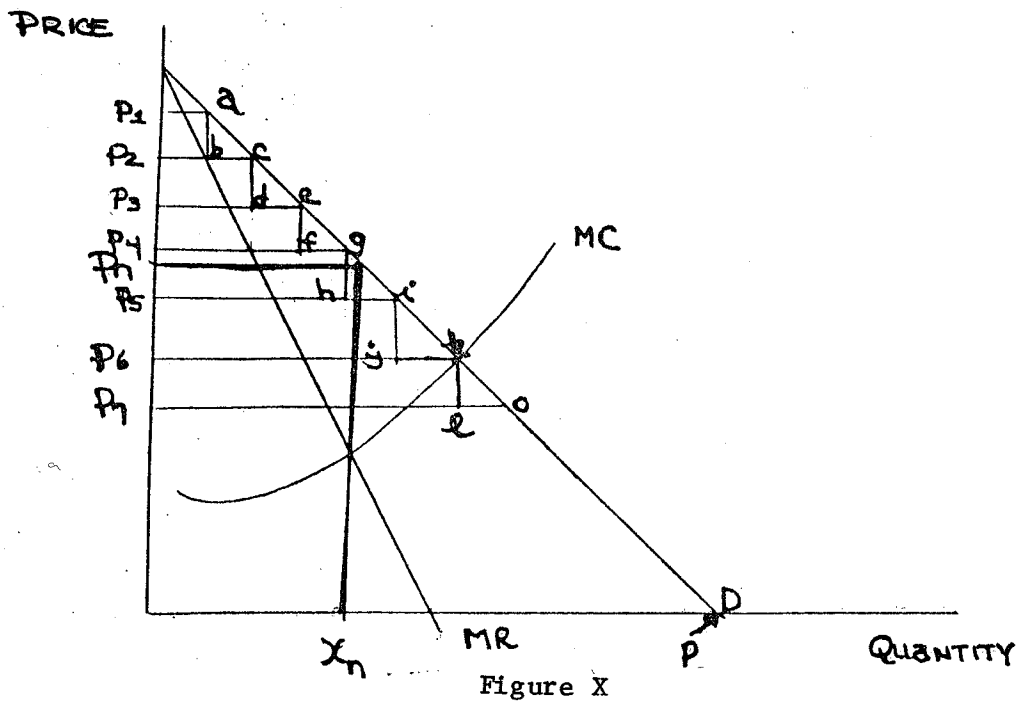


Figure IX

In the absence of price discrimination, if the market price is at "a", then all buyers pay that price per unit, not only the purchaser of the X^{th} unit. For example, the purchaser of the X_j^{th} unit (arbitrarily numbered) would be willing to pay $b > a$ for this unit. In first degree price discrimination, the X_j^{th} unit is sold at a price of b . Thus, the additional revenue to the firm from the sale of one more unit, is found from the "D" curve. As such, the demand curve thus becomes the marginal revenue curve. The corresponding AR (average revenue) curve, as shown, can then be constructed. Additionally, the profit maximizing or loss minimizing quantity which would in the absence of price discrimination have been X_n units, will now be X_m .

The case of second degree price discrimination involves a series of pricing steps, as shown in Figure X, below.



Similar to the case of first degree discrimination, the profit maximizing quantity increases from $MR=MC$ at X_n to $UC="MR"$ at X_m , where "MR" is the step function $rabcdefghijklp$.

Looking back at Figure II-IV we see that in the absence of price discrimination, the firm would be making a loss. However, given the new pricing policy, the average revenue exceeds the average cost, for X_m units, and a profit will be made. A similar situation can be shown in the case of second degree price discrimination.

In all price discrimination models it should be noted that it is essential that there be no competitor willing to meet or beat the price offered by the discriminating firm. Otherwise, the "offer" made to the consumer as final will be undercut by the other firm and prices will be bid back down to the level which would have resulted in the absence of the attempt to price discriminate.

(b) "Value of Service" versus "Cost of Service" Pricing

Reference is often made to so-called value of service pricing, or "charging what the market will bear." The obvious question is, how, if at all, does this differ from the above mentioned forms of price discrimination? Wilson³ argues most convincingly that value of service pricing is in essence no more than third degree price discrimination. Alternately, if more than one "product" is being sold, a second degree model might well be the most appropriate. In such a case, it would not be expected that an enterprise would operate in any submarket offering any shipper a price lower than the marginal cost of the last unit sold, or below average cost (variable in the short run, and total cost in the long).

In the existence of a regulatory constraint, however, there are motives which might induce a firm to continue operation at a price

less than the "cost of service" as defined by basic production and cost data. (1) The regulatory agency may, by making processes for exit sufficiently costly in both time and money terms, increase the length of time over which it would be wise for a firm to sustain losses given (a) that they have expectations of these routes, commodities, or whatever becoming profitable in some future time period and (b) a sufficiently short run time horizon on the part of these entrepreneurs such that this cost can not be spread over time to such an extent as to allow the firm to remain in operation. (2) By forcing the firm to continue to operate in markets which it would otherwise abandon, perhaps in return for other profitable routes or the right to price discriminate. This does not eliminate profit maximization as a model for industry objectives, but it does force us to consider intertemporal aspects of firm decision-making, and may well add the constraint that firms must operate in some markets at a long run loss, thus leading to various performance and allocative differences which will be discussed in later sections.

(c) "Average" versus "Marginal" Cost Pricing

Another method of pricing commonly discussed in the transport and other industrial organization literature is that of mark-up or average cost pricing. This procedure involves, of course, taking the cost per

unit for the product in question and adding to that cost some amount for services rendered by the entrepreneur in question. Since the AC curve includes a "fair return" (opportunity cost) to the entrepreneur, pricing on the AC will give such a return to the entrepreneur.

In contrast with marginal cost, or profit maximizing, pricing, there are two differences from average cost pricing: (1) the resource allocation resulting from average cost pricing, while potentially closer to optimal than that of the totally unregulated non price-discriminating natural monopoly, still is not the Paretian optimum level of a marginal-cost-priced "competitive" level; and (2) since most firms have a fairly good idea of the total cost of producing the given quantity of their product, average cost is easily obtainable, and is therefore administratively easy to determine, implement and enforce, as a pricing technique.

In essence, average cost pricing under normal conditions can be viewed as follows. If there is a zero economic profit constraint and if average cost pricing is viewed as a rate of return on cost (that is, for example, 10% above cost, or in other words, some level of opportunity added to the costs of production) and if TC is monotonically increasing with output, then the equilibrium point will be reached when $AC=AR$.

(d) Graphical Comments on Pricing Techniques

At this point, it might be well to consider the differences in terms of price-quantity equilibria of various forms of pricing techniques, including: (1) pure profit maximizing; (2) revenue or sales maximizing subject to a profit constraint; (3) output maximization subject to a profit constraint; and (4) average cost pricing. Consider Figure XI, below:

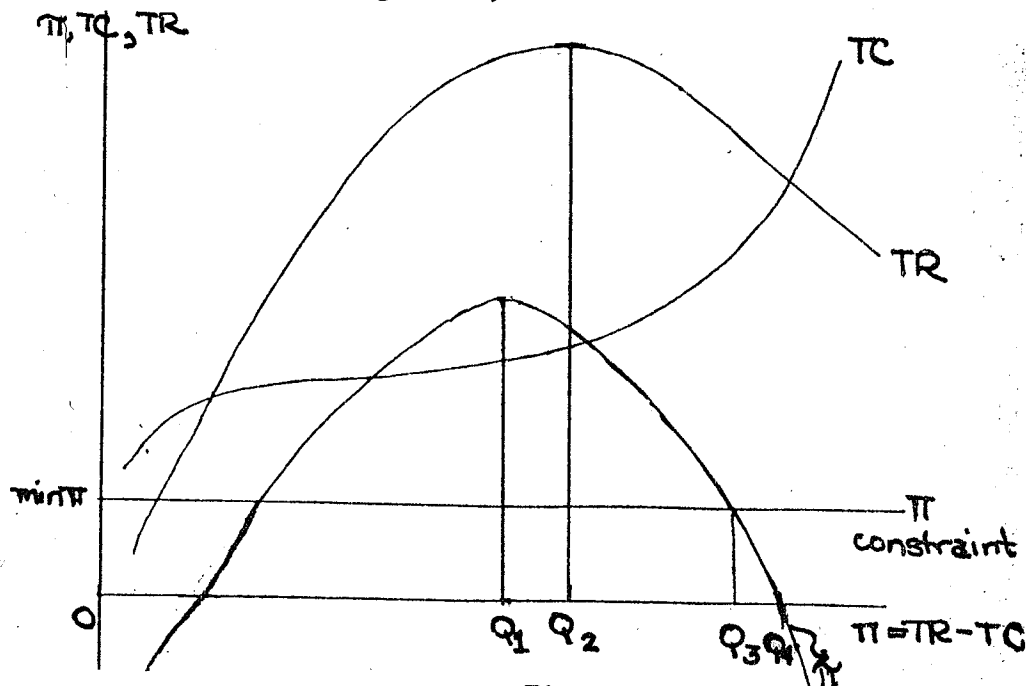


Figure XI

As mentioned on the previous pages, the profit maximizer is assumed simply to maximize profit, defined as total revenue minus total cost, expressed in money terms. This is shown on Figure XI by

point Q_1 , which corresponds to the highest point on the profit curve or, equivalently, the point on the output axis where TR and TC have the same slope, that is where $MR=MC$.

Similarly, average cost pricing as described above would correspond to point Q_4 in Figure III. That is, if production is pushed to the zero economic profit point, then $TC=TR$ or $AC=AR$. Note, of course, that were average cost pricing combined with a minimum economic profit constraint, then, assuming this profit constraint to occur as drawn the equilibrium point would be at Q_3 .

Point Q_3 above also represents the output maximizer, with a profit constraint, although the constraint is now binding from above, rather than below. Were there a zero profit constraint imposed a producer attempting to maximize the number of units sold would continue to expand to the point of zero economic profit (since he is constrained by the long run minima of zero profit, definitionally;) that is, Q_4 . Thus, the equilibrium points of the average cost or mark-up pricing technique and that of the output or sales of product maximizer are identical.

The final case considered here is that of the revenue or money sales maximizer. This case occurs when an entrepreneur tries to maximize TR, perhaps also subject to a minimum profit constraint. The

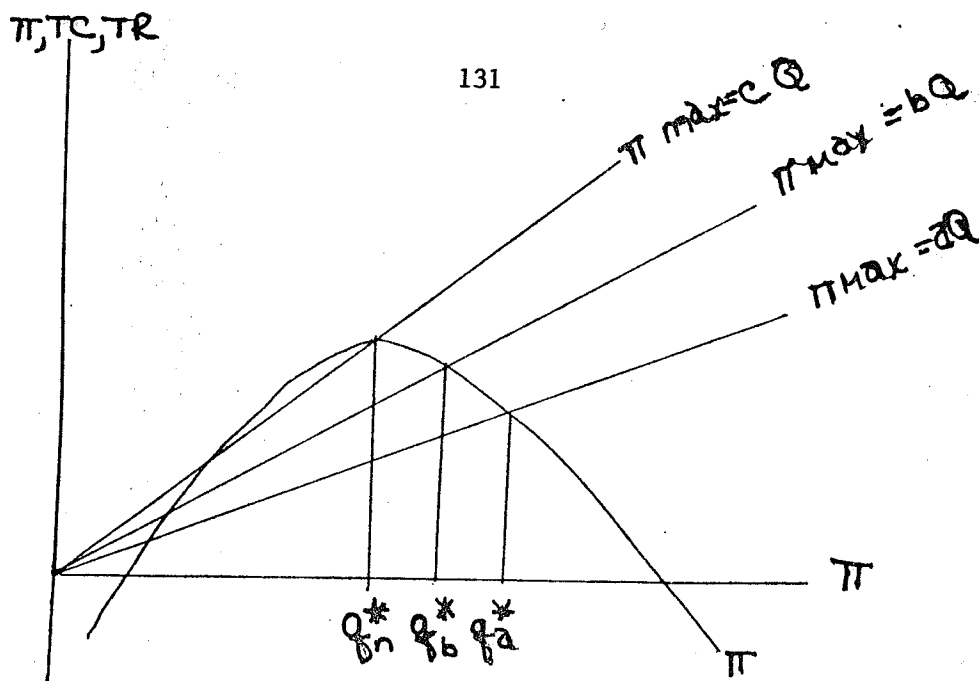
equilibrium point in this case is Q_2 , since in this case the minimum profit constraint is not binding.

In general, then the following points should be made relevant to the above diagram: (1) In the case where the maximum obtainable profit is zero, and if all firms are bound by the long run necessity to make at least zero economic profit, then all of the previous cases will converge such that in equilibrium, $Q_1 = Q_2 = Q_3 = Q_4$, which is also the case in long run pure competition. (2) Output maximization cannot be distinguished in equilibrium from average cost pricing under equivalent profit constraints. As such, it might be noted for regulatory purposes that the resource allocation implications are also identical.

(e) Rate of Return or Constrained Profit Maximization

A final type of pricing technique results from attempts to make a (constrained) rate of return on some variable, for example, per unit of output, per dollar of revenue, or on the cost of capital.

Initially, assume that the production functions are fixed and given. Figure XII below shows that the equilibrium quantity which will result with a given production function, can be adjusted by selecting the rate of return which is to be the constraining level.



RATE OF RETURN ON Q OR
RATE OF RETURN ON K if $Q = \gamma K$

Figure XII

In the first case, the production function is assumed to have a fixed capital: output ratio; that is it is of the form $Q = \gamma K$. (Alternatively, this could represent the case of a given rate of return on output). Note that for a profit-maximizing firm increasing the rate of return allowed will tend to shift the profit line left and up from the previous line, thus increasing the maximum allowable profitability and decreasing the optimal quantity, up to a level where profit is able to achieve a local maximum. Were the allowable rate of return non-binding, that is, were the profit constraint to cut the profit curve at or to the left of Q_n (the maximum obtainable profit given by the profit curve), the firm would continue to produce at Q_n .

A second, slightly more complex version of Figure XII is demonstrated in Figure XIII below. In this case, K is assumed to be a function of the quantity produced and to exhibit increasing capital intensity. In this case, the maximum profit obtainable under the constraint as in the case above is, Q_i where the "i" is determined by the constrained rate of return.

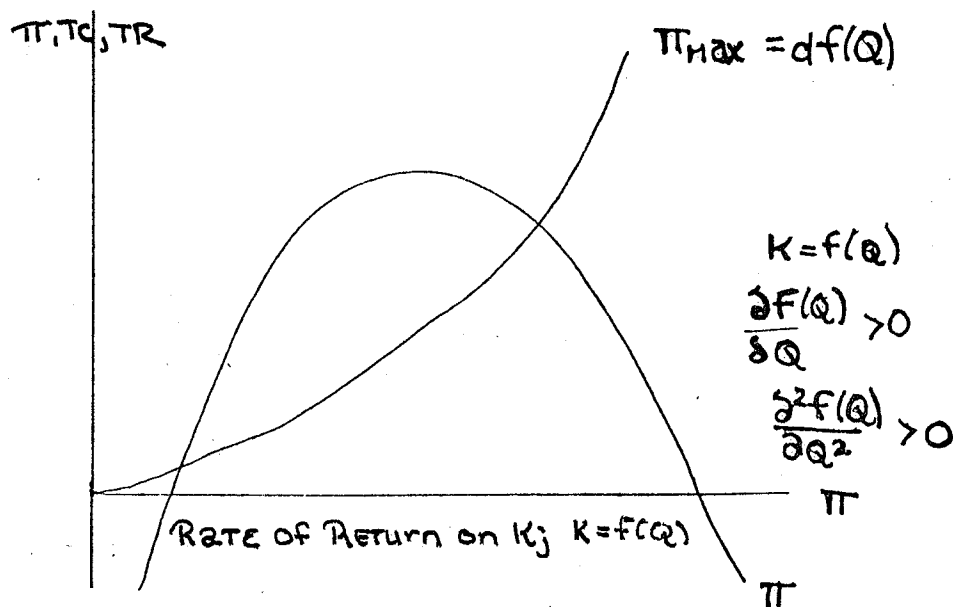


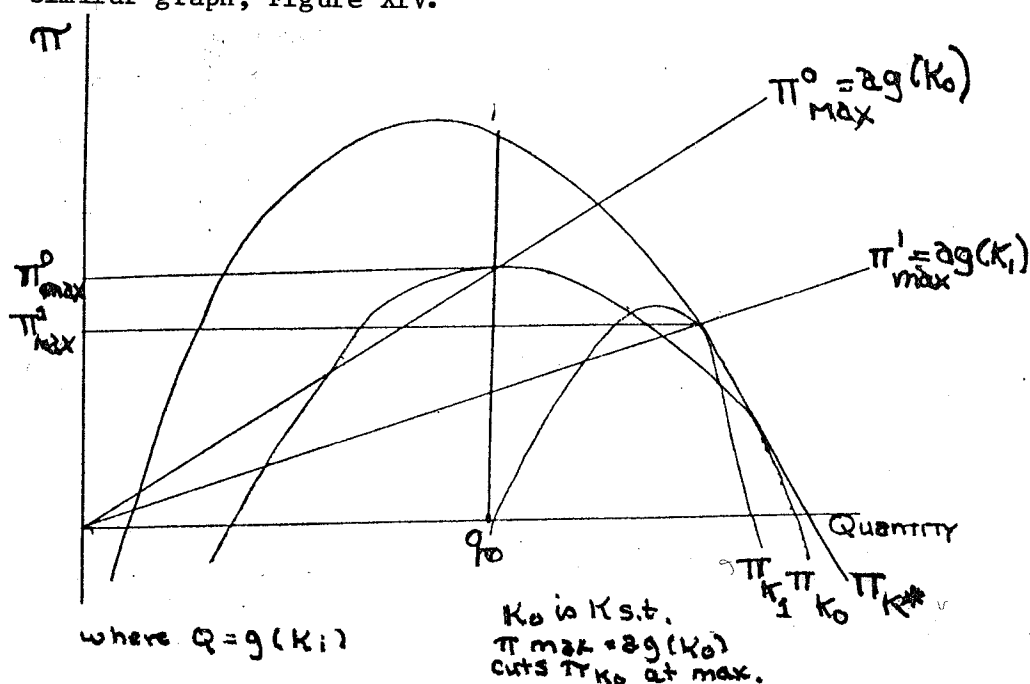
Figure XIII

In the above cases, the rate of return which is allowable is determined and represented by the lower case letter proceeding the Q or $F(Q)$, or the aQ , bQ , cQ and $dF(Q)$ in Figures XII and XIII. As pointed out, were c to be greater than that level necessary to allow profit maximization, it would be a nonbinding constraint. Given these diagrams and comments, the following can be concluded: The profit

maximizer, operating under an artificially constrained rate of return, can be forced to operate at a point which in equilibrium will not be differentiable from that of a sales or output maximizer. However, the constrained profit maximizer will arrive at this point by a different chain of reasoning. That is, he is making the maximum profit allowable, whereas the output maximizers select the same point because it represents a minimum acceptable profit.

(f) The Averch-Johnson Effect

The Averch-Johnson effect⁴ of overutilization of capital relative to output (for efficient production) can be shown on a similar graph, Figure XIV.



Note that in Figure XIV, the profit constraint, d is shown as a constraint of the form $df(Q)$ and is similar to that of Figure XIII, except that K/Q is not assumed constant. $K=f(Q)$ can be rewritten as $Q=g(K)$ if an inverse function exists, which will be the case if the relationship is continuous and monotonic. In Figure XIV the inverse function, $g(K)$ has been used. In this case, the assumption that capital can be used, (for any given quantity of output), in only one (that is fixed and given) proportion has been relaxed. The entrepreneur thus has a series of production techniques, any one of which can be used to produce a given level of output. The curve K^* is thus an envelope curve of the most profitable techniques. The curve K_0 represents the profit curve attainable with one level of capital stock, K_0 ; that is, with a fixed plant. The Averch-Johnson effect states that under rate-of-return regulation on capital, entrepreneurs will tend to overuse capital up to the point where allowable (and attainable) profit is maximized. In equilibrium, there will thus be overuse of capital by the choice of a plant which is too capital intensive -- judged by a minimum input cost standard -- for the quantity produced.

With the maximum allowable rate of return fixed at $a\%$, the "efficient" entrepreneur would operate with K_1 units of capital given $\mathcal{N}=ag(K)$. However, as a profit maximizer, in order to increase the amount of profit he could make, the entrepreneur would choose to

operate with plant K_0 such that the profit curve (from the short run, fixed plant implied by K_0) would be cut at the profit maximizing level. This is the plant which would be an efficient for quantity q_1 , however, not for q_0 , which would be the equilibrium quantity actually produced since it represents the plant with which he can maximize his total retainable profit, given the constraint implied by a maximum rate of return on capital of $a\%$.

The final dimension of pricing techniques to be dealt with here concerns multi-period pricing. The discussion so far has centered on single period pricing, and there has been no consideration of the possible impact of the pricing decisions of one firm on the other firms in the industry. If reactions are expected, what impact do these reactions have on the pricing policy which should be chosen by the original firm? This sort of question might be termed the question of multi-period or tactical pricing.

(g) Tactical Pricing

In those cases where there are sufficiently few firms as to induce rivalry on the part of those in the industry, and where no detente has been established, tactical or multi-period pricing of some form will commonly be used. In the case where some detente has been

established, such as in the case of cartelization of the industry, the appropriate model is likely to become one of profit maximization⁵ by a multi-plant monopolist (in the cartel case). Ignoring the reactions of the firm's competitor, or making a once-and-forever assumption about the competitor's reaction, similarly allows us to collapse our model to a single-period analysis⁶.

Tactical pricing is concerned with such reactions as pricing to deter entry, pricing to drive out the competition, and other game theoretic applications. First, for example, reconsider Figure X. Were the firm to set price at some point below c , then there would appear to be insufficient demand for entry of another firm to be profitable. This would far from maximize profit in a single period. However, the profit to the single firm would exceed that which it would receive in a single period duopoly with joint profit maximization. Assuming that no other firm or potential entrant is fully aware of the demand and cost structure of the industry, this might well be the constrained, multi-period, profit maximizing point for a single firm in this industry.

Pricing to drive out the competition encompasses the standard "cut throat" competitive tactics of selling below variable cost for short periods in order to drive out other firms in the industry. This encompasses the standard price wars of gasoline and even supermarkets,

but tends to be successful only if there exist some forms of barriers to entry.

Other game theoretic tactics encompass the myriad of reactions to price and quantity changes on the part of one firm by another, including assumptions dealing with the first, second, etc. round reactions of firm B to firm A's price and/or quantity changes. For example, were firm A to increase price by 10%, it might expect firm B to increase its price by 15%. However, were firm A to then decrease price by 5%, it might expect firm B to leave its price as it stands. Under a series of such anticipations (based, one can only assume on, some degree of knowledge of the competitor), firm A must make not only differing price changes depending on the degree to which it expects firm B to retaliate, but a diverse series of price changes depending on the actual actions of the competitor. It might be, for example, in the above case, that by two price changes as noted above, firm A will arrive at a net price increase of 5%, while firm B has a net increase of 15%. Assume this price differential to be optimum in the mind of firm A's managers, for profit maximizing purposes, given the market and the product differences assumed to exist. However, were firm A to move initially with a 5% price increase, firm B might only increase prices by $7\frac{1}{2}\%$, a suboptimal difference. That is, the path of approach to equilibrium may itself play an important role in the determination of that equilibrium outcome.

This example, while simplistic, serves to point out two things: (1) that competitors may have a series of reactions depending on the degree and directions of price changes; and (2) the estimation of the competitors' reactions may, if accurate, require some manipulation and, if inaccurate a good deal more. As time passes, however, one assumes that competitors will get to know (that is, have more accurate estimations of) their reactions to each other.

In all of the above cases, the government can intervene in a variety of ways: (1) it can make any of the above tactics illegal and enforce such laws as it deems necessary to guard against such actions; (2) it can provide information to potential competitors about the nature of the market, directly or indirectly; and (3) it can institutionalize such pricing into a regulatory context. The classic example of the latter case occurs in the factor market for labour, the study of which constitutes that branch of applied economics known as labour relations and labour relations law. The regulation of any industry by a quasi-judicial body provides, at a minimum, an arena for such games to occur, under the watchful eye of the regulators.

(1) THE PRODUCT POLICY

To the consumer of air transport, the product is the creation of

place utility. The product is difficult to define in terms of physical characteristics alone. Although the "passenger-rule" measure is used in this study as the single most useful measure, air transport service includes such dimensions of the product as: (a) the type of plane used, (b) the frequency of service, (c) the provision of extras such as stewardesses, meals, liquor, in-flight movies, etc., and (d) the provision of such surrounding amenities as prompt and efficient baggage handling and claim service, etc.

(a) The Type of Plane

Perhaps the most interesting and part of the product line is the first characteristics, the type of plane used. Throughout the history of air transport in North America, the provision of larger and faster planes has been an outstanding feature, with major transitions from propellor craft to turbo props, and from turbo props to jets (and perhaps ultimately to supersonic aircraft, or SSTs). These transitions, it can be argued, characterize the prime assumption about product quality in the air transport industries studied: the bigger and faster, the better. Particularly within the confines of the trunk-line passenger movement, this assumption about the views of consumers seems universal among the carriers⁷. Thus, the imperative to obtain "bigger and better" planes defines a prime characteristic of the product policy of the North American air transport industry as

part of competitive strategy. Theoretically, this imperative can be explained in the following manner.

Assume that there are three firms in the market in question, A, B, and C. Now, let A (or B or C) introduce a "bigger, faster" plane. If consumers are "progress-elastic", then they will prefer to fly on the new plane, *ceteris paribus*. Given this, all firms other than that which introduces the new plane will be faced with a choice: lose a large portion of their sales, introduce a fleet of the new planes, or allow prices of their service to fall *viz a viz* that of firms which introduce the new plane. Within a regulatory context (or a cartel context) of uniform price schedules along the same route, one would expect firms *ceteris paribus* to introduce the new service⁸. So, insofar as the regulatory agency enforces essentially uniform prices, it reinforces any imperative for bigger and better planes through the fostering of non-price competition.

The realism of this scenerio, of course, depends upon the continual development of new technology in the form of larger and faster aircraft. More will be said about this assumption later. Suffice it to note at this point, that within the context of the North American air transport industry much developmental work has been carried on under the auspices of defense and space research and development, with the resulting spin-off in technology directly

applicable to the air transport industries. (An interesting question, but one which will not be traced through for this work, deals with the implications to the air transport industry and its development, were the R and D expenditures of the defense branches not to have been made) .

The second condition required is that there is always at least one firm willing to introduce a new technique. Within a regulatory price constraint (or that of the class cartel constraint on price) there develops one form of increasing the share of the market, that is nonprice competition. One of the most obvious forms of this nonprice competition is through a development of the product line. Insofar as the airlines view the consumer then as being progress-elastic, it would be in the interest of one firm to introduce new technology (that is "progress") if it feels that the increase in demand which results will be sufficient to justify the expenditure involved. That is, if the expected marginal revenue exceeds the expected marginal cost, a firm will be willing to introduce new technology. This might come about in one of several ways. For example, there may be patent rights which effectively exclude other companies from introducing the new technology for sufficient time periods to compensate the firm for the production and introduction of the new techniques. However, given the assumption that the innovation occurs essentially outside the final goods industry, this form of tying up the market will not be likely in

the case of air transport. Alternatively, the firm might make the assumption that there will be some response lag on the part of rivals sufficient to recoup the expenditure. If this is the case, the firm need only wait until the time lag seems appropriate and the demand response sufficient, and new technology will be introduced.

An additional characteristic of the new technology which tends to encourage its introduction is the decrease in cost per passenger-mile which has been typical of larger aircraft. Although fixed costs tend to be higher for larger planes, the larger number of seats may result in an overall decrease in average total cost; even if average total cost is increased, however, there will be a reduction in the marginal cost of the $n + 1^{\text{th}}$ passenger, where n is the capacity of the previous (smaller) planes. Were the other firms (B and C in the above example) to collude in an attempt to lower their prices, the first firm could readily agree to such price reduction, knowing that it will be able to offer an expanded share of the market at the lower prices more easily than the firms not making use of the new technology. There appears to be fairly general acceptance that, except for the SST, at the given level of sales, unit of cost of the new planes were lower than the preceeding ones.

Further, of course, if allowable profit is tied to capital cost, the true opportunity cost of new investment (whether in the new or the

old technology) tends to be reduced for all firms, as mentioned above in discussion of the Averch-Johnson effect.

Given that new planes have been introduced by one firm, and insofar as the estimates of that firm are accurate with respect to consumer response, the remainder of the firms must follow in order to protect their market shares.

(b) The Frequency of Service

Consumers can be expected to be more responsive, *ceteris paribus*, to a firm which offers flights at times which coincide with other plans made by the consumer. This would be true with respect to starting, interchange, and final arrival times. However, frequency and timing cannot be finalized by the firm without reference to the requirements of the regulatory authority.

Given a price schedule authorized by a regulatory authority the profit-maximizing firm makes a frequency decision as follows: Assume that price is fixed at p_0 . Now, with each level of frequency of service, there is one demand curve for the firm in question. As the frequency increases, the demand for this firm's output increases. However, since the price is fixed at p_0 , only one point is relevant on each demand curve. As such, the firm has a unique point which, given the number of passenger-miles implied by that frequency will

give the firm the level of total revenue. Similarly, with each level of passenger-miles and the associated frequency, there will be a cost of supplying this service. The firm can then arithmetically determine the profit maximizing level of frequency. (A similar set of calculations would have to be carried out with regard to the pattern of flights, and account taken of interrelationships on both the demand and supply sides between the frequency and pattern of flights in order to determine an overall profit maximum).

It should be pointed out that: (1) any level of frequency is associated -- although typically not in a one-to-one relationship -- with a certain type and size of plane, and therefore with particular cost factors, maintenance requirements, speed, etc.; (2) the frequency of service may itself be regulated; and (3) this optimum level of frequency is not generally the optimum which would occur in the absence of price regulation. Each of these points is worthy of some additional comment.

A given type of plane can be said to require -- taking into account a combination of technological and economic factors -- a given length of time to complete a round trip journey between points A and B. Associated with this journey is a certain length of time -- generally established under safety standards by a regulatory agency -- necessary to perform maintenance work. Thus, for a certain type of plane and a certain number of journeys which could theoretically be

made within a day, there is associated a certain lump sum cost. Over a given range of passenger-miles, the average cost per passenger-mile can be assumed to decline as either the number of passengers or of plane-miles increases. However, after the maximum number of full trips which could be made by one plane with a 24 hour day, a new plane must be added. Thus the average and marginal cost curves would be discontinuous for a given plane type. Were one to consider a relatively small increase in frequency, it might be economically more viable to introduce a larger, faster plane than to increase the number of planes of a given size and speed. While this faster plane would typically have larger total costs, it would also have a larger range over which the diminishing average cost curve would be relevant.

Whenever frequency is itself regulated, a given cost of increasing frequency must be calculated for the costs associated with convincing the regulatory body that an increase in frequency is viable. Let us assume, however, that initially a given firm is in the optimum position for frequency of service, given the fixed price p_0 . If, then, as mentioned above, another firm in the market decides that the time is ripe for the introduction of newer, faster and larger planes, and if the second firm follows suit, it may well turn out that the new level of optimum frequency differs for this newer plane. Alternatively were the price level to be deregulated and therefore change, there would be a new level of optimum frequency, which would only correspond to the unregulated level at the unregulated price.

Finally, in the absence of any regulation, one would have the entire range of each demand curve relevant. As such, one would have a series of potential mini-markets, in which the firm could then calculate the profit maximizing position and compare the profit level in each, picking the maximum of the profit maximizing positions. It should be noted, however, that insofar as the regulated price is below the optimum price and insofar as costs increase with quantity, the regulated level of frequency would be lower than that of the unregulated. (Once again introducing pattern as well as number of flights requires the addition of an extra dimension to the analysis and the recognition of interrelationships between the two).

(c) Extras

As does advertising, the level of "extras" tends to increase both the demand for and the cost of the service. In a similar fashion to frequency of service, the optimum amount and mix of this type of non-price competition can be calculated. For every additional service, cost can be calculated, the resultant demand curve ascertained, and a profit level determined. The firm must then pick the level and combination of extras which is associated with the maximum profit of all the potential profit maximizing positions. Again, the level of these extras which might be desirable may differ depending on the type of plane used. It may very well be necessary to

provide inflight meals on a three hour trip, whereas on a two hour trip, this may not be so. As such, the optimum level of these extras may differ depending on the level of technology. Additionally, if the firm is rate of return regulated, "extras" which are allowable in the base would tend to be provided, while those which are not would, *ceteris paribus*, be relatively less attractive.

(3) SALES PROMOTION POLICY

Sales promotion policy within air transport includes such non-price competitive gestures as advertising and give-aways. As mentioned in the past section, a cost of each level and type of sales promotion can be determined and the maximum maximorum profit level determined. Additionally, factors such as the appropriate levels and combinations of advertising, the employment of external sales agencies such as travel agents, and other promotional policies must be determined. Again, the object of a profit maximizer can be best achieved by calculations of the relative costs and the relative profits associated with alternative methods, and once again the caveat must be added that in the case of a (binding) rate-of-return constraint, forms of sales promotion which add to the base will be incurred, if otherwise profitable, while those which do not will not.

In addition to the non-price competitive techniques, the air transport industry engages in two particular forms of promotion which are essentially price competitive. These are "freebies" and discount fares. In both cases the yield -- that is, the average return per passenger-mile -- is diluted. However, insofar as these sorts of fares stimulate demand they will be worthwhile under certain conditions. If there are unfilled seats on a plane, any increase in passengers at price(s) greater than marginal cost would be worthwhile, assuming these passengers would not merely have flown on other flights. Second, even with a net short-run loss, if demand is increased in the longer run, then the loss may be made up, and a profit secured over some time period. Finally, insofar as "freebies" tend to make people, for example, travel agents, better informed and better able to sell the product, the secondary increases in revenues may be greater than the cost of providing these "freebies". By encouraging or forbidding such promo fares, the regulatory agency may indirectly alter the final level of profit, the relative and absolute levels of demand for the firms involved, etc.

(4) COORDINATION OF SALES AND PRODUCT POLICY

A final decision involving the sales and product policies is the degree to which these decisions are made in isolation or the degree to

which collusion on these decisions occurs. In the case of a small number of admittedly knowledgeable firms, at a minimum one could assume that certain reactions must occur on the part of other firms. However, there is no reason to assume, within a regulatory or even cartel hypothesis, that joint actions must be the result of unanimity of goals on the part of all firms. In particular, consider such decisions as the optimum frequency determination. Insofar as all firms are looking at similar planes, *ceteris paribus*, they might well arrive at identical choices. Within the context of a regulatory body which involves itself in the details of many aspects of the industry's operations, and with a fairly small number of firms, collusion is difficult to separate from competitive reactions. Certainly, however, some authors, particularly Jordan⁹ have presented notable arguments in favour of viewing the industry as an essential cartel.

Similar comments can be addressed to the coordination of firm pricing policies. In an industry which has regulated prices along routes to be uniform, however, certain problems or patterns may be expected to emerge. If a group of firms approaches a regulatory body, *en masse*, and asks for a price increase, one might expect a greater likelihood of the price increase being granted than were one or more firms to oppose such a move. Even with some consumer reaction to price increases, higher costs which uniformly apply across all firms, for example, will lend credence to an argument by all firms to permit

an increase in fares. However, if several firms hold out against this price increase, a logical regulator's reaction would be: How is it that some of these firms can maintain lower prices in the face of rising costs? Over time, then, one might expect coordination of at least those aspects of policy which are deemed of significant proportions among the firms.

This sort of coordination, once developed as a pattern in a given industry might very well be difficult to break, even were deregulation to occur. Whereas, for example, the board was previously, the "enemy" in some game-theoretic sense, new or potential entrants, or other modes might develop in the same role, were such deregulation to occur. It would be imperative, therefore, to consider this occurrence as at least a potential reaction, were deregulation considered as a possible solution to future development of a given industry. This problem, one might argue, would be extremely acute in an industry, like that of air transport, which has essentially "grown up" under a regulatory constraint in both Canada and the U.S. Undoubtedly, the problem might be less in the case of Canada, as Air Canada is still a "government" firm, and thus will always carry, directly or indirectly, some of the "chosen instrumentality" which has characterized its past development.

(5) R AND D POLICIES

Some remarks were made above which directly bore on the research and development patterns which have emerged in the air transport industry to the present. These patterns have consisted of (1) initial research being heavily borne by "unrelated" sectors, in the sense of defense and space industries; (2) practical applications being developed in a related, but external industry to that of air transport; and (3) a minimum amount of "technological" research being carried on within the air transport industry itself. This leaves unanswered the following: (1) To what extent is there interdependence between the external R and D activities and the application and introduction of any resulting new techniques?; (2) Is this interdependence any guarantee of future technological advancement?; and (3) If new technological advancements were not forthcoming from external sources, what would be the impact on the air transport industry, that is, would it take over part of the developmental work?

Phillips argues that the separation of the "technology applying sectors" and that of the airline industry have had essentially no effect on the technological development of new techniques, but that the airlines probably instituted new technology more rapidly than they otherwise would have¹⁰. In addition, he argues that a regulatory lag has tended to increase the time lag between development and

introduction of new technologies and to "mediate differences caused by varying expectations of long-term and short-term gains."¹¹ In other words, he argues that by separating the development of technological applications to domestic air transport from the industry which supplies the final service, the following pattern, within the context of regulation has developed: (1) a cartel-like organization wherein a policy toward new technology can be jointly developed under the auspices of a regulatory body. This body, having the power to enforce changes or refuse changes, can thus enforce the decisions of the majority upon the minority. Combining this power with that of regulation of entry and exit, has insured that a cartel in fact exists. (2) Thus, any technological change which will clearly result in expansion of the total market through lower prices and increased quantity demanded will tend to be allowed. (3) Any change which will involve trade-offs will be a weighted decision and thereby applicable to game-theoretic analysis.

What seems to have been happening in this case is as follows. In its early years, mainline air transport was not successfully cartelized. "Official" separation of the development and marketing functions took place with the advent of regulation. Concurrently, technological change became available in an applied form such that any one of the transport firms, by using the new and better planes, could increase its share of the market. This firm thus introduced the new

technology resulting in both an increase in total demand and in the market share to the innovating firm. The rest followed, either to protect their share of, or get in on the new additions to the market. Insofar as the regulatory body was successful in "protecting the public interest" by preventing destructive non-price competition then this would tend to slow down the piecemeal institution of new technology and ensure that jointly profitable techniques (under certain assumptions about the behavioural patterns and degree of foresight of the winners of the game) would be instituted jointly.

If the above argument is correct, then, insofar as imperatives for technological innovation exist due to progress-elastic consumers' demand, a known, stable market exists for developers and producers of new aircraft; the cartelization described above, on the other hand, limits demand for new aircraft to those which are demonstrably more profitable. Consider, for example, the case of the supersonics. If consumers of air transport are known to feel that only minimal advantage can be gained from the introduction of such aircraft, and given considerable negative externalities so that, on balance, the costs exceed the benefits, then the final demand outlet for technological application may not exist. In such case, one would expect such external industries as the aircraft industry to continue working on such research and development only insofar as they have another guaranteed external source of funds -- a role often filled by

government. Depending on the degree to which these external support industries can determine the likelihood of any research being applicable, there will be incentive for such work. However, insofar as the introduction of a regulatory body creates lags and diminishes the likelihood of the introduction of a given new technique, the separation of these two industries is likely to reduce the amount of research and development, from previous levels, over time.

Let us assume that due to an advanced case of "rigidity in the cartel", the market for new technology essentially dries up, and the external firms dry up and blow away. Would new research and development occur within the air transport industry? The answer depends, among other things, upon the degree to which any given airline felt that it could develop new techniques which would be sufficiently rewarding to implement. Were there such a case, however, one would expect the cartel to break up over time, or at least, to alter in terms of the relative strengths of some companies, principally, those who win the game. Within the air transport industry historically, the costs of any significant development have been astronomical¹², and it seems doubtful that the air transport industry itself would have carried on either the level of the pace of R and D in the absence of significant government financing.

Additional factors, of course, could serve to increase the likelihood (assuming the demise of the present structure) of an internal technological emphasis, including: (1) the expansion of other means of transport, such as rail passenger lines, by breaking down the cartel and encouraging the application of known techniques to increase the individual firm's share of what may then be a stagnant or declining market; (2) the outbreak of war, which in the past has encouraged technological development under considerable government support, or expansions of such ventures as space programs; and (3) obviously applicable technological developments which occur independently outside of the transport industry.

(6) PREDATORY PRACTICES

Predatory practices include, among others, price discrimination violations such as those named in the Clayton act in regard to the market itself. Additionally, there are practices which have been discussed previously, including pricing below cost in order to drive other firms out of the market, advertising smear campaigns, and so on. Within the context of a cartel or quasi-cartel, one would expect there to be a minimum of such practices in terms of "insiders", and a maximum of such techniques toward "outsiders" or potential entrants. If entry can be effectively blocked, as by government regulation, then

such techniques should not be needed at all. As will be seen in the next part of this study, one of the major reasons why regulation was introduced in the first place was to remove tendencies toward "destructive competition".

FOOTNOTES

1. Bain, J.S. Industrial Organization, loc. cit. p. 9
2. Ibid, pp. 10-11.
3. Wilson, G. Essays on Some Unsettled Questions, loc. cit., p. 150-9
4. Averch, H. and L.L. Johnson, "Behavior of the Firm Under Regulatory Constraint", American Economic Review, LII (December, 1962) pp. 1053-1069.
5. The cartel goal may in fact be sales maximization, output maximization, or whatever else members agree upon. The key aspect, however, is agreement of firms and the consequent delimiting of possible ranges of action.
6. Consider, for example, the familiar Cournot and Edgeworth duopoly models in which identification of firms' reaction functions permits determination of a unique equilibrium solution resulting from competitive behaviour.
7. c.f. Capron, W. et al, Technological Change and Welfare in the Regulated Industries, (Washington D.C.: The Brookings Institution, 1971).
8. Under rate-of-return regulation, of course, the opportunity cost of new capital is reduced, relative to the costs of other inputs, and introduction of new aircraft is rendered more likely, ceteris paribus.
9. See W.A. Jordan, Airline Regulation in America, (Baltimore: Johns Hopkins Press, 1970).
10. Phillips, A. "Changing Patterns in the Cost and Benefits of Technological Change in Commerical Aviation," in W. Capron et al, op cit, pp. 141, 159-160.
11. Ibid, p. 141
12. Up to May, 1971, when Congress suspended financial support for the SST, for instance, over \$800 million in government funds had been expended in the United States alone. c.f. D.P. Locklin. Economics of Transportation, loc. cit. p. 771.

CHAPTER FIVE

THE NATURE AND MECHANISMS OF REGULATORY BODIES

Within the North American context, several types or mechanisms of regulatory intervention have developed over time. These include: (a) common law; (b) statute law; (c) special hearing bodies, such as Royal Commissions, and special or standing committees; and (d) quasi-judicial bodies.

Unlike the introduction of railroad regulation, the regulation of airlines cannot be tied directly to imperfect competition resulting from "natural monopoly" tendencies in a well-established industry. In fact, the major supporting arguments in favour of regulation of air transport were to encourage and promote development of a future industry¹ not so much in the sense of fostering the survival of "competing" firms, but of ensuring the very existence of such an industry in the first place. The development of a viable air transport industry was seen to be in the public interest. Given that the development of the industry was deemed to be in the public interest, the problem became: How should the growth be structured? After the background of experience in the rail industry, with its natural monopoly characteristics of high fixed to variable cost ratio and concomitant average cost curve decreasing over a large range of

output, it is not suprising that there was a great deal of concern about such potential difficulties as "destructive" or "cut-throat" competition in the air transport industry as well.

In the U.S. in particular, much of the intervention in rails and other industries was along "utility" lines. This intervention derives basically from a common law concept frequently used in the U.S. during the 1800's which held that regulation in the public interest required both entry and rate regulation. (While the concept can be traced back to the middle ages, its recent history will suffice for present purposes).

In the U.S., the direct application was from the English common law² and is similar to the concept as applied in Canada. Any common law concept merely describes certain principles of law which have developed over time as being the "thing which is done" in certain cases. It is not a written, legislated, principle, and thus: (1) is subject to certain discretion on the part of the particular judge in question; (2) is not "creative" in the sense that it deals in a time established manner with new situation which may be unique or in which the public interest might be promoted by a unique approach to the problem; and (3) is only an after-the-fact mechanism and, as such, is not directly concerned with the formation of institutions or conduct which will prevent abuse from arising, other than by, as mentioned,

the application of traditional principles and including, for example, such techniques as cease and desist orders³.

An alternative device to the common law "utility" approach was that of the charter, granting a monopoly with certain conditions on the part of the industry. The granting of monopoly charters in exchange for certain guarantees on the part of the industry or firm in question, popularized by Elizabeth I of England, would seem particularly applicable to utility cases, including transport, but this mechanism fell out of favour in the U.S. as the result of the Dartmouth College Case⁴. In this case the U.S. Supreme Court determined that a charter was a contractual arrangement and therefore not amenable to subsequent legislation. The common law and statute law, on the other hand, could always be reversed or altered by legislative action and thus provided a much surer form of control as circumstances and legislators' preferences altered.

By the time of the Wolff Case⁵, the utility regulatory concept had been institutionalized and developed to a point at which it no longer directly resembled the charter concept, under which the individual or individuals to whom the charter was granted were in fact granted monopoly rights at a price. With the utility concept, the impetus for intervention lay within the public interest invested in a business. In Taft's decision on the Wolff Case, he considers three

types of businesses which are invested with public interest: (1) the railroads and public utilities operating under grants of privilege which imposed affirmative duties of rendering service (at reasonable rates to all comers); (2) vestigial remnants of common law callings, such as inns, to which the common law still adhered; and (3) businesses which were inherently private but which had risen to public interest status, principally because of (a) the indispensable nature of the service, and (b) the exorbitant charges to which the public was subjected in the absence of regulation⁶. Since the airlines were clearly not in the second category, they had to be classified either in the first or the third if they were assumed to be an industry invested with the public interest.

In addition to the common law and its associated regulatory implications, all of which are principally judicial in nature, there is the legislative option of statute law. Charters, after the Dartmouth Case, became a non-viable option in the U.S. and led to the use of this option. In and of itself, however, statute law retains a degree of inflexibility, (although not comparable to the unamendable nature of a contract). Certainly statute law is limited in terms of (a) rapid policy changes, (b) flexible but enforceable alternatives which vary with differing situations, and (c) imaginative solutions to old problems or development of new solutions for new problems. On the other hand, there are advantages of this rigidity in the statute law

for (a) the outlawing or limiting of certain types of actions on the parts of individuals which are considered inherently or per se contrary to the public interest; (b) the setting down of broad semi-permanent policy statements or guidelines; (c) the integrating of previously diverse views into a consensus if one appears; and (d) the creating of special bodies, either short term or permanent to (i) gather and analyze data with respect to particular issues, (ii) introduce the element of expertise necessary to create workable regulatory policies from broad range goals or public policy, or (iii) set up a series of regulations to create the sort of industry or firm considered to be in the public interest, or at least to minimize deviations from optimal in the performance of the industry in question.

In Part II, statute laws in the Canadian and U.S. cases will be discussed in some detail. However, since both countries have permanent regulatory boards, the remainder of this chapter will be a discussion of the nature of regulatory boards.

THE REGULATORY BODIES

The main line air transport industries of both Canada and the U.S., in spite of its unregulated infancy, developed in

climates of regulatory constraint. In the previous two chapters, some implications of alternative regulatory actions have been considered. In this chapter, the consideration will be directed toward the regulatory body. This emphasis is premised on the following consideration. The fact that the air transport industries developed in a regulatory environment, it is hypothesized, will have had impact on the development of the industries in question. As such, to understand the present industrial structure, conduct and general climate of these industries, requires a knowledge of the construct and mechanisms of the particular regulatory boards. Similarly, as the development continues within the constraints of these boards, one must understand the mechanisms of action and the impetus for actions underlying the particular boards; thus the need to consider the board as being "within the market" as defined. Additionally, in order to consider the potential for policy changes, one must understand the alternative mechanisms and structures of regulatory boards. While there are a wide range of available alternative structures and mechanisms for policy application, this chapter will centre on those structures and mechanisms which seem particularly applicable to the North American air transport scene, and which help to "explain" the manner in which these boards have sought and will seek to intervene in the regulated industries.

THE "JOB" OF A REGULATORY BOARD

Within North America, the application of quasi-judicial Boards is highly developed. The principle characteristic of these boards is their "expert" evaluation of "fact", in the legal sense. That is, unless the Board errs in the application of the law, its decisions are final and binding. Within the discussion of "boards", however, a distinction must be drawn between those which act as arbiters of policy and those which merely judge after the fact. This distinction can be categorized as the distinction between (1) regulatory boards and (2) administrative tribunals.

The latter, that is administrative tribunals, function essentially as expert arms of the judicial process, and correspond most closely to the traditional nature of the quasi-judicial board. The function of such a tribunal is to make judgements after the fact as to whether or not a specific tenet of a specific relevant act was violated by a given agency or person in question. Consider, for an example, the National Labor Relations Board in the U.S. While it does have the power to make regulations, these regulations deal with the operation of the board, the mechanism of hearings, the rules under which field examiners operate and so forth, but not with matters of economic policy.

In some contrast with administrative tribunals, regulatory boards function to translate and implement public "policy" from legislation.

Boulding has defined policy as:

...the principles that govern action directed towards given ends. As such, any study of policy should concern itself with three things - what we want (the ends), how we get it (the means) and who are "we" that is the nature of the organization or group concerned.⁷

The pure regulatory board, is the organization which is implied in Boulding's "we", having the power to both make and implement policy.

The distinction in the real world between regulatory boards and administrative tribunals is--as we might expect--not always clear-cut. Both fall within the broad category of "quasi-governmental" board, essentially independent boards performing, within their areas of expertise, one or more of the legislative, executive or judicial functions normally carried on by the constituted government body. Thus, the quasi-judicial board serves to function, as experts, within the defined areas of this expertise, as a judicial body. The degree of its expertise and the degree of its independence will vary, dependant upon the wishes of the creators of this board, and the political interactions of the board, the members of the economy over which it has jurisdiction, and its creators.

The pure regulatory board serves, through the function of creation of public policy, as a quasi-legislative board. It interprets the wishes of, and means of obtaining the desires of, the writers of the original legislation, and thereby serves to create new "law". This is particularly the case where the legislation establishing such agencies makes use of terms like "the public interest" which are ambiguous under the best of circumstances. In order to implement "the" public interest, the regulatory board must first define or at least establish an agreed upon pattern of behaviour which will fall within the interest of the public as seen through its eyes. That is, this Board serves to fill the functions of the Boulding definition of policy by defining what it, the board, wants and the means it sees fit to achieve these ends. The board (subject always to the limitations of its creation and the inevitable review of its policies by those authorities to which it is responsible) is, in fact, the "we".

POLICY AND THE PUBLIC INTEREST

Fortman defines policy as:

A concrete plan of action consisting of ends and means which at the moment of its formulation is felt to be in accordance with the norms or ethos of the group.⁸

He then argues:

Policies may eventuate (sic) in regulations. Regulation means that the relationships between various members of the group are controlled by consciously formulated rules in order to facilitate fulfilment of the aims of policy.⁹

As such, within the context of a policy making and interpreting regulatory board, regulations are the mechanisms or means of achieving ends which may originate from some group outside of the board, e.g. from the legislative body. Some of these possible ends will be discussed in more detail in the following chapter. However, it should be pointed out that, in general, while boards may encourage specific economic action or performance on the part of the regulated firms, the North American quasi-judicial pattern has been regulation "in the public interest." The difficulty with this approach, of course, comes in (1) attempting to define what is meant by the term "public interest", and (2) devising mechanisms which will accomplish regulation in the public interest but which in themselves are not equally detrimental to that interest. The job of the regulatory board, then, is to develop and implement policy in such a manner as to develop regulations which are on the whole beneficial, given the "ethos" of the board. As such, it is necessary to consider the makeup of the board, the limitations on its authority in all phases of construction of and implementation of policy and regulatory measures,

and the implications of these factors in terms of the sort of regulations one would expect to result from a given board.

THE MAKEUP OF THE BOARD

In order to understand the "ethos" of a particular board, certain characteristics of the membership must be identified. These include: (1) who chooses the board members; (2) what qualifications are necessary for being a member of this board; and (3) how many members are there? that is, is the number of members sitting on the board large or small?

The question of who chooses the board members is important information for the purposes of identifying whom the board represents, legally and de facto. Given self-interested behaviour on the part of individuals appointed to various boards, one would expect their discretionary activity to reflect the wishes of their appointing constituencies. For example, are these members appointed by the party in power, and if so, are these appointments principally rewards for active support? Are they civil servants appointed by other career civil servants? Are they perhaps elected by the public at large? Might the board, once constituted, select its own members on a continuing basis?

In the case of political appointees, one would expect some degree of allegiance to the appointing party. In the case of civil servants, or meritorious moving-up-in-the-ranks of an established institution, one would expect representation to the ethos of the civil servant class. In the case of elected officials, the responsibilities would be to those who elected the official. Finally, in the case of internal selection, it would be dependent on the original ethos of the board. Were the original board essentially a class of experts (perhaps of university professors), one might for example, find a feeling of representing the "truth". Alternatively, one might find a representation of the public interest as enhanced by maximizing the individual welfare of the board members (since they might view themselves as perfectly normal individuals who happened to develop expertise in the areas in question).

A second general characteristic relevant to board decision making, is the qualifications of board members. Are they selected as, for example (1) experts in the area in question, (a) coming from within the industry itself, (b) coming from a class of regulators, such as within the CTC structure, (c) educators, (d) industrialists generally, or from some other identifiable source; (2) not essentially chosen for abilities which are essentially political, for example, non-partisan judgement, or, conversly, well-developed partisan strength; or (3) for individual characteristics such as a reputation

for wisdom, impartiality, imagination, etc.? One would expect differences in the manner and degree of originality in the handling of regulated sectors to flow from differences such as the above.

Certainly, for example, experts from within the industry will approach problems of pricing differently from those with strong civil service backgrounds.

A final significant characteristic deals with the number of members of the board. This would be particularly useful information for the determination of the appropriate type of decision making analysis. Large group and small group decision making processes differ in the nature of and paths to equilibrium, specifically, for instance, in their approaches to uncertainty. Since expected outcomes of collective decision making differ with differing group sizes, for the purposes of comparing the behaviour of regulatory agencies in similar decision roles, it will clearly be of importance to have information on the numbers involved.

In general, the following three-tier classification of board and board members' characteristics provides a useful taxonomic device:

I. Large group decision making

A. High degree of expertise

1. definite political leanings (to the party in power)
2. definite civil service bias
3. definite constituency leanings
4. internal, or esprit de corp bias

B. Highly judicial in leanings

1. through 4, as above

C. Low degree of expertise, but high degree of imagination, etc.

1. through 4, as above

D. No particularly outstanding qualifications

1. through 4, as above

II. Small group decision making, A through D as above.

Of these thirty-two potential classifications, some are highly likely, while others are at best implausible. That is, one would expect to find, by the nature of the meritorious rankings of the civil service structure in North America, that the members of a given board drawn from civil service ranks will possess a certain minimum degree of expertise. Certainly one would not expect to find civil servants with an absence of any qualifications as far as that expertise is concerned.

Second, regulatory boards in North America have typically consisted of few members, well-backed by research and support staff. The small group decision making model¹⁰ will thus be appropriate for an examination of the air transport regulatory processes in Canada and the U.S.

SCOPE OF THE BOARD: DUTIES AND POWERS

Given a duly constituted board, before one can draw implications as to probable policies, one must know (1) the legal duties and scope of the board with reference to actions which could or "should" be taken to complete its duties as a regulatory body; (2) the scope of action or development of mechanisms for the board; (3) the methods of enforcement of policies available for use by the board members or

other institutions which act in concert with the board; and (4) the degree to which the board centres on economic, and on what particular type of economic, activities.

(1) DUTIES OF THE BOARD

It is important to know the degree to which the board is operating under statutory obligations, the range of these obligations, and the general scope of the board's duties. Consider the case of a board which has as a statutory duty the obligation to "ensure efficient transport". The term "efficient" has, to an economist, several potential dimensions. Is this efficiency allocative efficiency? In that case, the board members will be attempting to ensure (a) that the cost curves used by the firms reflect true "economic cost", that is (i) include the opportunity cost of resources, and (ii) are as low as possible given the state of the arts; (b) that the firm or firms in the industry are operating at the minimum point on the average cost curve; and (c) that any externalities inherent in the operation of the industry are at least specified, with some attempt at measurement of their cost or value. However, unless the meaning of the term "efficiency" is specified, interpretations could range from the lowest possible costs as used by the firm for its average cost figures to full-blown allocative and distributional efficiency where the concern is not only the nature of

the partial equilibrium established within the industry in question but the achievement of a general Paretian optimum or at least a second best solution, viz a viz the rest of the economy, in the light of some social welfare function.

Additionally, to what degree, if at all, does the board evidence non-statutory obligations? That is, are there certain expectations of the board or its members which are not specified but assumed to be what is done or what is not done? For example, does the board assume an obligation to maintain allowable industry price increases in line with guidelines suggested by the party in power, or by an economic council?

(2) MECHANISMS OF ACTION? SCOPE AND LIMITATIONS

As in the case of board duties, it is useful to know which forms of action are specified, prohibited, and understood to be acceptable or unacceptable. That is, what are the powers of the board to set specific regulatory measures to achieve desired ends? If the board, for example, is allowed to use only suggestion and persuasion, one would expect compliance only if the costs to firms are low or zero, or if firms fear that non-compliance will ultimately lead to the establishment of stronger board punitive and regulatory powers. Alternatively, were the board empowered to implement original and

enforceable policy suggestions, one would expect that major adjustments could be made, to the structure, conduct and performance of a given industry. These mechanisms, could include: (a) the power of persuasion and suggestion; (b) the force of law through enforceable regulations, aimed both at economic and non-economic actions on the part of the regulated firms; (c) the control over entry and exit into and from the industry, as well as the ability to select individual firms as being "groomed for" the industry; and (d) the ability to take-over or start new firms which would be either owned and operated as government or crown corporations or controlled to some degree by the crown.

(3) METHODS OF ENFORCEMENT

Given that a board has a set of policies, and given certain mechanisms for control to ensure the development and implementation of these policies, the next question centres on the ability of the regulatory board to enforce such provisions as it deems necessary. standard Canadian procedure has been appeal from the board to, and enforcement by, the appropriate government department or ministry, with the ultimate appeal to the judiciary on matters of law rather than of policy, and enforcement of board rulings by the courts. Within the context of judicial enforcement, however, certain specific methods of enforcement may prove more or less valuable in certain

circumstances¹¹. The use of fines may prove highly effective, given a sufficiently impressive cost for acting in an illegal fashion. However, profit-oriented firms would, one assumes, continue to engage in a profitable, if illegal, operation, were the cost of the fines weighted by the anticipated probability of getting caught, sufficiently low. The addition of jail sentences might prove sufficiently embarrassing within the corporate ethic, however, to reduce the likelihood of contrary action, if a sufficiently high risk of being caught exists. Other forms of remedial action might include (a) the removal of a license to operate; (b) unspecified fines taking the form for example, of a lower allowable profit rate, higher taxes, etc.; (c) government control of certain or all aspects of the business; or (d) any other original form of punishment directed at the parties responsible for illegal action.

A choice of deterrent and punitive procedures can have the particular advantage of increasing the risks, and making unprofitable to the firms in question what might otherwise seem a particularly interesting method of bending the law to its advantage. However, a standard, guaranteed fine and jail sentence, unbendable and certain, may induce the compliance of certain individuals, depending on the likelihood of being caught, to the degree of risk aversion, and the relative profitability of the contemplated action.

(4) THE CENTRE OF CONCERN OF THE BOARD

For the case in question, it is particularly important to know whether the board is basically an "economic action" or "non-economic action" centered regulatory institution. If the bias of concern is toward such matters as safety, crash investigation, etc., one would expect less concern and probably less expertise regarding market oriented phenomena than if the principal authority and concern were directed toward such matters as fall within the scope of such market or economic phenomena, although there will be definite interrelationships between these "economic" and "non-economic" matters. The degree to which a particular mode of travel is, for example, an excessively safe or excessively dangerous one will be expected to influence the demand for this product over time. Insofar as a safety-oriented group is sufficiently powerful and accurate in the performance of its duties, one would expect the industry to produce transport of relatively more uniform safety, and thus this form of regulation will serve to minimize demand shifts over time.

One would expect the centre of concern of a board to stem from:¹² (a) the basic assumptions by the board about their "reason for being" or basic justification of the continuing existence of the board as a regulatory institution; (b) economic assumptions; and (c) legal and administrative assumptions.

In general, all regulatory intervention takes place "in the public interest". The area of regulatory concern, at its most basic level, must involve the belief that without some form of government intervention, socially unsatisfactory results would emerge. This area of concern, or "reason for being", might be non-economic, or what might be called "ecological"; or it might be economic, encompassing structural or anatomic reasons, conduct or physiological reasons, and performance or policy reasons.

Non-economic or ecological reasons encompass concern with unsatisfactory results in "basic environmental factors", including the state of the arts, technological and safety standards development, etc. An example of a regulatory board with this bias in the air transport industry in the U.S. is the Federal Aviation Administration (FAA) whose basic concern is the allocation of air space, the investigation of accidents, and the prevention of future accidents. This study will not dwell on such matters, since the concern is directed at an "economic" hypothesis. However, in the case of a regulatory board which sees itself to be constituted principally for "non-economic" reasons one would expect minimal direct economic policy to develop over time.

Economic reasons fall into three basic categories: structure, conduct, and performance. The degree of emphasis upon each of these

classes is directly related to the style of the regulatory board, the assumptions which are made by the board in question, and the directions of causality which are assumed to be in operation. These styles will be considered in more detail in the following section. In general, however, one would expect to find that a given board would make certain assumptions about the "ideal" nature of structure, conduct and performance and direct its regulatory activities accordingly. In the U.S., for example, one might expect to find boards viewing the "ideal" structure as being that of a purely competitive industry in long run equilibrium. If this goal is unattainable, secondary assumptions come into play: private enterprise is generally assumed superior to public ownership. Second, larger numbers of firms are preferred to smaller numbers. Similarly, certain types of conduct and performance are assumed to be optimal. Since the purely competitive equilibrium is considered optimal, the appropriate type of conduct is that which would be expected from a purely competitive industry. Similarly, the optimal performance is that of purely competitive long run equilibrium. Since the "ideal" is unattainable, it becomes a matter of determining (a) which of the areas of structure, conduct and performance are assumed dependent and which independent; (b) what deviations are considered optimal; and (3) what mechanisms assure that deviations are controlled within tolerable levels, and provide for feedback and checking the results of the controlled variables and for adjustments to policy actions which do not provide for the necessary adjustments.

not produce results within the acceptable norms.

Given the basic assumptions about the reason for its existence, and given the belief patterns of its members, the regulatory board will directly or indirectly develop a certain set of economic and administrative assumptions. Consider a board regulating an industry because that industry cannot--for whatever reason--be perfectly competitive. Given the assumption that pure competition provides the best of all possible worlds, one would expect economic assumptions and "acceptable" deviations which are somewhat close to this ideal.

STYLE OF THE BOARDS: IDEOLOGY

Regulatory boards can be categorized into three basic ideologies:¹³ (1) rationalist, (2) realist and (3) idealist.

The rationalist member of a board tends to view the regulatory process as part of the legislative or parliamentary system. As such, when pressed, the reaction of this sort of individual or group of individuals, is to use political and public pressure to achieve desired ends. In this case, the individual views the solution to a crisis as being something for which the party in power is responsible. As such, he is, if one can accept the term, one of the links in the chain of government.

The realist, in contrast, basically views the world as a series of power groups. As such, a crisis becomes the turning point for the creation of new power groups, the expansion of old ones, and the demise of the unsuccessful. A board made up of realists, in effect, becomes a competitor to other structures, not part of any other institution, but rather an institution in itself, existing not only in its own right, but for its own right. When pressed, the members of this type of board tend toward an all out power struggle, war if necessary, but definitely rivalrous action.

Finally, the idealist type of individual dislikes and mistrusts the members of any "in" group (realists) or party members. Rather they prefer the rule of philosopher kings. This is essentially a purely intellectual, logical approach, with a high degree of distrust of organized opposition. When pressed, one would expect reactions to range from disagreement to down-right enmity, depending on the source of disagreement. Basically, the ideology of this group might tend toward the attitude that "father knows best".

APPLICATION OF STYLE OF BOARD TO STRUCTURE, CONDUCT AND PERFORMANCE

The idealist school or approach is basically that of direct applicability of a particular ideal to the regulation of industry.

This grouping can be subdivided into two main classes: (a) the egalitarian school, which has as its basic tenet the assumption that all men are created equal; and the (b) Darwinian school, which assumes that some men are better than others and should thus be allowed to rise to their "proper" place.

In the view of the egalitarian school, with the assumption that all men are basically equal, in a properly constituted world there would be no reason for monopoly. Since all men have basically an equal amount of ability (though some are better at particular activities than others), only through inherited wealth or improper structuring of the world can monopolies or other concentrations of wealth arise. Of course, hard work on the part of one man may lead him to have advantages, but if all equal men work equally hard, in the long run, competition and a competitive outcome will result. Given this approach, monopolies can be viewed as bad, per se,¹⁴ and structural changes should be instituted to remove them.

In the eyes of the Darwinian school, all men are not equal; that is, some are destined by nature to rule others. These natural rulers are assumed to be those who will become philosopher kings, or benevolent despots. Having risen to the top, they can best watch out for others less able than themselves if they are given the rule of the world. (Additionally, a less competent man will assumedly profit more

from working in an efficient world as second man, than from being an equal partner in an inefficient enterprise). The task of the board, then, is to foster a structure which will allow exceptional men to both rise and rule without interference. Thus, within any particular industry one would expect monopolies to result, with the most competent of men in the given area to be expected to be heading the monopoly. Again, within the idealist constraints, however, merely the derivation of a proper structure, and with no further interference, will guarantee this result. The importance, then, of the idealist philosophy in terms of structure, conduct and performance, is as follows: The regulatory board consisting of idealists will be structuralists, concerned with developing the proper regulatory atmosphere to insure that a given structure will result, and then minimizing other forms of intervention once the proper structure has been developed.

One might view men as being basically equal, in some general philosophical sense but differentiated by the accumulation of power and the ability to hold same. As such, the development of monopolies can be described as the natural, although perhaps undesirable, result of the accumulation of power. This point of view might be characteristic of what has been termed the "realist" school. As such, the realist is essentially a cynical form of the egalitarian idealist. Given, however, that the basic assumption of equality of men remains,

the accumulation of power must be fought. There are various devices for doing so, such as the break-up of power groups by such techniques as the Sherman Anti-trust Acts. Alternatively, one may set up equally powerful opposing devices working "for the good of the common man", or "in the public interest". This notion of countervailing power represents, in some senses, a dynamic alternative to the alteration of structure, which, by the realist, will be deemed as a short run, perhaps futile gesture, since the men who hold power do so not by their abilities and superiority, but by exogenous facts of parentage or unscrupulous conduct. This philosophy, then, centres on conduct as the principle determinant of regulatory intervention.

Finally, one might define the rationalist school as the cynical form of the Darwinian idealist. Within this scheme, the movement of men to their proper places violates certain principles of "fair play"; some men will have, even when producing as much as they could be expected to produce, insufficient means to support themselves in some reasonable fashion. As such, those very institutions which serve to allow the development and rise to the top of the efficient and intelligent men, must also serve to protect lesser men. There is no reason to toy with an efficient structure, since there is nothing inherent in the actions of the efficient men which implies these unacceptable results, it is rather the performance itself which is unacceptable. As such, since an essentially competitive structure

gives a world which is fair for all men, what must be developed is results which are close to that of the egalitarian idealist world, or some form of performance, call it "workable competition" performance, which simulates the desired results.

These definitions of styles of board members are of course, extreme, and they are not exhaustive. (For example, one might discover an "artistic" school, unconcerned about relative performance, conduct and structure alterations except insofar as the result is "pretty" or symmetrical in terms of some preconceived pattern). Nevertheless, they do serve as useful conceptual constructs within which to view the behaviour of regulatory agencies within the air transport field.

Additionally, it must be stressed that regardless of the style of the individual or group of board members, all of them are assumed to be concerned ultimately with the performance of the regulated industry. The importance of the style of thought, however, is the isolation of what is viewed as the centre or the cause of the particular performance. As noted above, the idealist would argue that the appropriate structure will give, ultimately, the desired performance. He would probably admit that conduct is important, but only in the sense that certain types of conduct will inhibit proper performance, and that this is really an indication of some structural

problem. Similarly, the realist would argue that conduct is the principal question. To him, structure is important only in the sense of inhibiting certain sorts of proper conduct, and the real issue is the manner in which men conduct themselves. However, in all of these cases, performance serves as the test for the success or failure of a particular type of regulation; and ultimately, the realist, idealist and rationalist are all concerned with successful regulation. (The aforementioned "artistic" type, of course, might very well be unconcerned with performance, merely with the "beauty of the system"). The degree, however, to which a particular type of performance is indicated, and the acceptable degree of and type of deviations from perfection, however defined, of performance might be expected to vary within these groups as well as across these groups. In order to further a consideration of the sorts of performance standards which would be acceptable to each group or type of board member, a digression from our concentration on the board, and an examination of the concept of performance, is warranted.

MARKET PERFORMANCE

Bain defines performance as:

...the composite end results in the dimensions of price, output, production costs, selling costs, production design, and so forth, which enterprises arrive at in any market as the consequence of pursuing whatever lines of conduct they espouse. In other terms, market performance refers to the character of and adjustments to the effective demand for their outputs which are made by sellers.¹⁵

Since performance is basically the end result of economic activity stating the equilibrium relationships between various economic variables, it serves as the basis for judging the success of or failure of any given policy. Insofar as regulatory boards have differing standards, they will aim for differing performances. If regulatory boards do have an impact, one would thus expect, *ceteris paribus* to find differing industrial performance outcomes.

In this section, the emphasis will be placed on (1) the micro dimensions, or particular performance characteristics, of a given industry; (2) macroeconomic performance goals, or goals that are external to (or more general than) those of the particular industry under regulation; and (3) the ideals of, and emphasis on, particular characteristics of industrial performance. Given this background, one can then proceed to determine which emphases, within the assumed style variations, one would expect a given type of board to have.

(1) MICRO ECONOMIC PERFORMANCE: Principal Aspects of Market Performance

Bain lists the following as being the principal aspects of market performance:

1. The height of price relative to the average cost of production, and thus the size of profit.
2. The relative efficiency of production so far as this is influenced by the scale or size of plants and firms (relative to the most efficient) and by the extent, if any, of excess capacity.
3. The size of sales-promotion costs relative to the cost of production.
4. The character of the product including choice of design, level of quality and the variety of product within any market.
5. The rate of progressiveness of the firm and industry in developing both products and techniques of production, relative to evidently attainable rates and relative to the costs of progress.¹⁶

The following questions are relevant to these dimensions: (a) Why would one be interested in these specific outcomes? In other words, what information do they provide? (b) What are the expected performance outcomes given a particular type of structure and conduct? (c) What is the linkage through which the outcome works? Obviously, these three questions are far from independent; we turn now to consider each of Bain's five characteristics individually with reference to the above questions.

(1) Size of Profit

In a purely competitive industry, there will be a long run equilibrium level of zero economic profit, including, as part of the cost, a rate of return on the owner's (owners') investment equal to its opportunity cost. In the case of imperfect competition, however, one would typically expect to find a long run price greater, by some amount, than average cost.¹⁷ This implies among other things, the dead weight loss of consumer surplus inherent in a monopoly, subject to the assumption that a competitive equilibrium is attainable using the best available technology, an often unreasonable assumption in the case of natural monopolies, duopolies, or other forms of demand-deficient structures.

(2) Relative Efficiency of Production

Within this category, the concern is with (a) each firm operating at its minimum SRATC, and (b) the industry operating at the minimum point of the envelope curve, or industry LAC.¹⁸ This will, of course, occur in long run competitive equilibrium only, except by chance. In terms of optimal, general, resource allocation, one would find the ratio of $MP_{ix}/MP_{jx} = MP_{iy}/MP_{jy}$, where i and j are inputs, and x and y are outputs, so that there is no way in which inputs could be shifted from one to another industry to increase the production of either x or y without decreasing the production of the other. Additionally, for optimal output of a given commodity, we require that the ratios of marginal social costs to benefits for different goods be equal, or that $MSU_x/MSC_x = MSU_y/MSC_y$; that is, commodities must be produced in such quantities that society cannot gain utility by increasing the amount of one product and decreasing the amount of another. In partial terms, this implies that, *ceteris paribus*, $MSC_x = MSU_x$ (that is, assuming MSU_y and MSC_y to be constant and at the optimal level). In the absence of externalities, the demand curve may be held as a measure of MSU and the MC_x as a measure for MSC_x , and one would optimize at $P = MC$ or $P = MR = MC$. Given, however, that one industry is an imperfect competitor, the optimal solution, under the constraint of its continuing imperfection, will no longer be the general equilibrium one

noted above.¹⁹ Thus in the case of a natural monopoly, duopoly, or what have you, these rules must generally be broken all round in order to gain the advantages of a larger scale of production than could occur, given the state of present demand, were the industry organized in a purely competitive fashion. As such, the regulators are immediately faced with the dilemma of what output and price should be the desired outcome. Should, for example, the optimum configuration be that of a zero-profit firm, operating where the demand curve cuts the average cost curve, even though this may be at the expense of producing too large (or too small) a short run plant for either short or long run minimum average cost optimization? Should the plant be of the optimum size, with the implied profit and excess (shortage) capacity? Or, should the price be set at what might be thought of as a shadow competitive price, where price equals marginal revenue equals marginal cost, with the possibility of subsidization (which ultimately comes out of the consumers pocket, though less visably so)?

(3) Sales, Promotion and Cost of Production

For an unregulated market price-taker, there is no reason for expenditure on sales promotion other than on a purely informational basis. Insofar as products are identical and insofar as the producer can sell all he wishes at the going price, there is no reason for him to inflate his costs and thereby merely reduce his rate of return per

unit at any market price. However, insofar as products can be created or seem to the consumer to be different, and insofar as the seller has some degree of control over price, he would be expected to advertise to the extent which maximizes his profit. If competitive or price-taking behaviour is seen as a norm, therefore, one would expect a smaller proportion of selling costs to other costs, *ceteris paribus*. However, within the context of a restricted price, such as would be expected in the regulated industries, at least two reasons for advertising exist which differ from those of an unregulated or unrestricted (that is a market-induced) price-taker.

(a) A relatively small firm may hope to increase its share of the market, and thereby increase its profit, which may be expected to occur, at the going price, if the costs remain constant, decrease (as might be expected in a decreasing cost industry) or even increase, but by less than the increase in returns. (b) By increasing costs, via advertising, a firm or firms may hope to persuade the regulators to increase rates in order to maintain a constant rate of return on total cost or to "maintain operation" in the face of rising costs. Within the context of a regulated industry, the first reason might be considered admirable, while the second, deplorable. It would be necessary, then, for the regulatory agency to determine an allowable ratio of advertising to production costs in order to be able to differentiate between allowable and unallowable proportions.

(4) Product Diversity

It is no simple matter to determine the degree to which product differentiation is good, bad or indifferent. Similarly, one cannot easily rigorize the choice of an appropriate level of quality of service. Optimally, the product line should be such that consumers cannot be made better off by changing it in a costless manner. Similarly, it should be the case that no increases in costs resulting in greater diversity or better quality could be made which would increase consumer satisfaction by more per dollar than it would suffer from the per dollar loss of other products now produced in smaller quantity, with less diversity, or with a lower degree of quality (any of which may occur as a general equilibrium result of a shift of resources across product or industry lines).

(5) Degree of Progressiveness

This is essentially, as defined with respect to a given and known state of potential progress, a problem in capital theory. The relevant questions here are: (a) What is the present value of a potential investment in a new form of technology? (b) What is the time path of expected costs and returns as compared with the time horizons of the investors? A project which loses an investor 5% for the first 5 years, and returns 20% a year thereafter, profitable

though it will be given a time horizon in excess of five years, will not even be considered by an investor whose vision of the future extends only two years.

(2) MACROECONOMIC PERFORMANCE CONSIDERATIONS

In addition to those performance considerations of the particular firm or industry in question, macroeconomic objectives may intervene in the decision functions of the regulators. These include, among others, such considerations as (i) the effect of employment changes induced by changes in the particular industry on the general level of employment; (ii) the productivity of the particular industry in terms of the aggregate satisfaction produced by increasing or decreasing output or in terms of the increase in GNP generated by additional resources tied up in the particular industry; (iii) the relative stability of output, employment, etc. over time of the industry in question; (iv) the rate of growth of the industry in question with respect to general or anticipated growth in (a) other industries, (b) the general expected rate of growth of the labour force or of other significant economic variables; (v) the distribution of income resulting from the production of this industry's product; and (vi) other developmental policy objectives, such as regional or spatial development which might be encouraged as a result of the expansion of this particular industry.

(3) DEVIATIONS FROM DESIRED PERFORMANCE

In particular, a regulatory board must determine the particular objectives of its policy, that is, the industry performance it desires, and the degree and ranking of these goals in terms of (a) the extent to which deviations from particular goals will be considered acceptable and (b) which goals will receive the highest priority. The ranking of objectives can be expected to differ according to differing board styles. Even given the assumption that a perfectly competitive industry, were it attainable, would be "best", it is not obvious that the attainable, or second best form would be some sort of scaled down or "workable" competition. Let us consider this point in more detail.

Table I sets out a listing of what might be regarded as the key performance characteristics; it remains to rank these, along with other exogenous goals of regulation, in order of importance from the point of view of the regulatory authority.

TABLE 1

PERFORMANCE CHARACTERISTIC	DEGREE OF EMPHASIS OF CONCERN		
	HIGH (H)	MODERATE (M)	LOW (L)
1. size of profit-deviation from			
2. the height of price relative to MC (or deviation, P-MC)			
3. deviation of sales promotion to production cost ratio from optimal			
4. concern over product diversity or lack thereof; other product considerations including quality, safety, etc.			
5. introduction of new techniques, types of aircraft, etc.			
6. the existence of uncosted externalities			
7. factor market distortions			
8. macro considerations			
9. other considerations such as regional development and income distribution			

What orderings would one expect from differing types of regulatory boards, given their individual styles or belief systems? Certain expectations can be derived from each of the previously mentioned general styles of regulatory boards. As previously even with the limited characteristics which have been considered,

TABLE 2

Ideology (biases)	Principal Concern
1. Rationalist; regulation seen as part of the legislative function	Fulfilling the goals and the letter of the legislation, insuring that innocent parties are not harmed...
A. civil servant bias	...with particular emphasis on the legal interpretation and basic content.
B. party in power bias	...emphasizing the intent of the legislation as expressed in party policy.
2. Realist: regulation as an expression of power politics	Maintaining, creating, or destroying power structures in light of legislative and other imperatives; inhibiting the development of undesirable power bases...
A. party in power bias	...preventing the development of power groups antithetical to party interests
B. constituency bias	...defending constituency interests, fostering development of other power groups which will support those interests.
C. toward the organization	...strengthening its own power base, attempting to lengthen its life span, defending itself against attack from within and without the industry.
3. Idealist: regulation as an expression of some ideal world; represents a move toward that ideal.	Creating new structure, conduct, or both in order to achieve the ideal...
A. individualist bias	...with emphasis on the protection of individual rights
B. constituency bias	...with emphasis on the fulfillment of election promises.

thirty-two potential categories of board members exist. No attempt will be made to be comprehensive, but it is useful to consider some of the more prominent alternatives, which are summarized in Table II.

By subdividing the three ideologies in terms of the previously mentioned biases, the above table describes some likely alternatives. Having identified the primary board characteristics--an objective function and the behavioural traits of board members--we can begin to generate expectation about the relative importance of the previously mentioned performance goals. The predicted rankings of entries in Table I for any particular regulatory board will be based on certain assumptions about the goals of the regulation, nature of the power groups and ideal goals, respectively. Given these basic assumptions, or given an actual statement or observed set of goals, the priority rankings follow. It is worth considering each of the previous systems in some detail, in order to clarify the manner in which such rankings can be obtained.

Consider first, the rationalist school. Within this school of thought, it will be remembered, regulation is viewed as essentially a legislative or institutional process designed to insure the development of acceptable performance--meaning the prevention of harmful behaviour while fostering "progress". In the case of the

rationalist outlook with a civil servant bias, one would expect the attitude of "we are here to serve whatever party is in power by applying the laws and providing such information as desired, to the best of our ability". As such, one would expect the principal concern of such members to be the application of the letter of the law, unless otherwise specially directed. As an alternative class of rationalists, the party in power bias group would deal with the philosophy and interpretation of (and application of this interpretation) the law not only in terms of content but in terms of the intent of the legislation, drawn from such sources as debates on the bill, sources within the executive, and so on.

The realist school principally centres its concern on the power structure and the development of a "suitable" balance of power to ensure proper conduct, and thereby proper performance. Within the potential classes of realists are those who "owe allegiance to" the party in power, to various electorates, and to the organization or regulatory board itself. In the case of those who seek to enhance the power of the premier party, one would expect to find advocates of regulatory mechanisms which would, for example, (a) tend to follow through on election promises, both formal and to voters, or informal and to supporters of particular interest groups; (b) tend to weaken the power of interest groups which have refused to cooperate with the party in power; and (c) benefit various regions and social or economic

groups which have been particularly supportive of the party at election time. Similarly, those members who tend to represent a particular constituency, say the industry itself, or a particular region of the country would tend to support actions that increase the power of these regions or the pay-off to these regions or groups. Finally, the organization of the board itself, its continued health and well being, may be the goal of some members. As such, mechanisms which would be particularly supportable would include those which tend to make the board an obviously necessary structure on a permanent basis--such as the development regulations requiring an expert body to interpret and apply them, or the fostering of antagonism between the industry and the party in power at odds, so as to supply the board with a necessary adjudication function.

Finally, the idealist school tends to view regulation as a means of creating some form of ideal world. Among the possible ideal models are those of the purely competitive world; the regulated, but highly necessary and efficient natural monopoly world; and an industry-exogenous goal such as northern development. These three represent types of goals which might be classed as individual economic goals. Similarly, there can be a class of constituency goals, such as the development of a "model" industry, or the advancement of a particular region "through a new and modern transport system", and the like. In each case, the performance goals would tend to follow from

the structure which is most desired, and the necessary performance measures would be those which would demonstrate that the "model is working". For example, in the purely competitive structure case, one would expect, over time, to find the zero economic profit, minimum interference, minimum cost curve existence of the perfectly competitive model.

Table 3 summarizes some expected priority rankings in terms of the performance goals (from Table i) most likely to be desired by boards of the identified ideologies.

TABLE 3

IDEOLOGY	CONCERN	PRIORITY RANKINGS (Issues:1-9; Rankings: High, Medium and Low)
1. Rationalist:	Goals of Legislation:	1.(M); 2.(H); 3(L);
	"Economy, Efficiency,	4(H-M); 5(H); 6(L);
	and Adequacy", e.g.	7(L-M); 8(M-H); 9(H)
A. Civil	following the letter	...dependent entirely
Servant bias	of the law as spec-	on the statutory spec-
	ified by statute and	ifications and legal
	precedent...	precedents.
B. Party in	interpretation of	...based upon campaign
Power bias	"what was really in-	promises, legislative
	tended"...	debates, executive
		speeches.
2. Realist:	Goals of altering or	...depending upon who
	preserving the status	is perceived to hold
	quo in terms of bal-	power, who "should"
	ance of power	have power.
A. Party in	fostering support for	1.(H); 2.(H-L); 3.(L);
Power	the party in power	4.(M-H); 5.(M); 6.(L);
		7.(L); 8.(H); 9.(H)
B. Constit-	nurturing a particular	...depending upon prior-
uency bias	power base	ities of constituents
C. Organiza-	insuring the survival	1.(H); 2.(M); 3.(M-H);
tional bias	and increasing the	4.(L); 5.(M); 6.(L); 7.
	powers of the regula-	(L-H); 8.(L-M); 9.(L-M)
	tory board	
3. Idealist:	Goals of creating or	...depending upon the
	preserving a pure	perceived ideal.
	system.	
A. Individual	protecting individual	...depending upon what
	rights	is seen as best for the
		public at large
(i) pure com-	insuring equal market	1.(H); 2.(H); 3.(H); 4.
petition	power	(M); 5.(L); 6.(L); 7.(H);
		8.(L); 9.(L)
(ii) monopoly/	natural monopoly or	1.(H); 2.(L); 3.(M-H);
oligopoly	oligopoly on the basis	4.(L); 5.(M-H); 6.(L);
	of efficiency; regula-	7.(M-H); 8.(L); 9.(L)
	tion to protect indiv-	
	idual rights	
(iii) exogenous	evaluation of the sys-	1.(L); 2.(L); 3.(L); 4.
goals	tem in terms of extra-	(M-H); 5.(M); 6.(M); 7.
	system outcomes	(L); 8.(H); 9.(H)
B. Constituency	furthering the inter-	...depending upon what
	ests of the constit-	is seen as best for con-
	uency as the ideal	stituency members rela-
	locus of rights	tive to the ideal

The rankings of performance variables suggested in Table 3 deserve some additional comment. For example, in the case of the individual economic idealist, one would expect those concerned principally with such extra-industry issues as northern development, *ceteris paribus*, to rank the "normal" economic efficiency criteria of profit size, deviation of price from MC, and so on, lower than the specific factors concerning those external goals except insofar as they are relevant to the development of the region in question. For instance, if industry profits are already low relative to a desired or "normal" entrepreneurial view, then if northern development is a non-profit making venture from the point of view of the industry (at least in the relevant time range), regulators will be concerned with industry profitability as a derived interest, perhaps resulting in some form of *quid pro quo* arrangement with industry members individually or collectively. In the absence of this sort of interdependence, one might expect the objective function of regulators to be lexicographic in nature; that is, pursuing a primary goal or set of goals, and having achieved those ends, then and only then, turning to concern with other features of industry behaviour.

In Part II of the thesis, our concern will shift to an examination of the Canadian and U.S.' mainline air transport industries with particular emphasis on the behaviour of regulators and the results of their regulation in the light of the preceding analytic structure.

FOOTNOTES

1. For an expression of sentiment in the United States, cf. Senate debates on the bill introduced by Senator McCarren, S.2(1937), and House debate on Congressman Lea's bill, H.R. 5234 (1937). Discussions by the government with private carriers in 1936 and subsequent passage of the Trans-Canada Airlines Act (1937). 1 Geo. VI, c. 43; RSC 1952. c. 238, demonstrate a similar Canadian concern over the future development of transcontinental air carriage in Canada.
2. cf. Wolff Packing Company Case, 262 U.S. 522 (1914) for a discussion of the common law background to regulation.
3. Sampson, Roy J. and Martin T. Farris, Domestic Transportation: Practice, Theory and Policy, Houghton Mifflin (Boston, 1966) p 241.
4. Dartmouth College Case, 4 Wheaton 518 (1819).
5. Wolff Packing Case, op. cit.
6. Thompson and Smith, Public Utilities Economics, (New York: McGraw Hill, Inc., 1941).
7. Schubert, Glendon, The Public Interest, (Illinois: Free Press, 1966).
8. Fortman, Bastiaan de Gaay, loc. cit., p 138.
9. Ibid.
10. cf. James S. Coleman, "Foundations for a Theory of Collective Decision Making", American Journal of Sociology 71, pp. 615-627. Coleman argues that large-group decision-making can be handled by models similar to that of perfect competition, assigning levels of power to the individual actors and summing across interest to determine group power. More relevant to regulatory board decision-making is his small-group model, in which each member is willing to engage in vote-trading (logrolling) as a means to utility maximization.
11. Posner, Richard A., Economic Analysis of Law (Little, Brown and Company: Boston, 1972). Chapter 25 provides an excellent introduction to the incentive and disincentive effects of the law on the behaviour of "rational" (consistent) individuals. For more formal treatments, see Gary S. Becker, "Crime and

Punishment: An Economic Approach", Journal of Political Economy, 76 (1968), pp 169-181; and G.J. Stigler, "The Optimum Enforcement of Laws", Journal of Political Economy, 78 (1970), pp 526 ff.

12. Redford, E.S., The Regulatory Process (Austin: University of Texas Press, 1969), Chapter 2.
13. The application of Schubert's classifications to industrial organization were suggested by Professor R. Harris, but the author of course take responsibility for any errors in application.
14. That is, monopolies are bad because of their implications for the distribution of income and power, rather than because of their resource misallocation effects. Natural monopolies--as long as they are a consequence of purely technological and demand factors--may thus be acceptable as long as profits and power are dispersed.
15. Bain, J.S., Industrial Organization loc. cit., p 11.
16. Ibid. p 12.
17. There is, of course, no guarantee that even a monopolist will be able to make long-run supernormal profit, depending on demand and cost conditions. Without freedom of entry, however, there is no mechanism by which monopoly or oligopoly profit, if it exists, will be bid away.
18. Bain, op. cit., p 16.
19. Cf. R.G. Lipsey and K. Lancaster, "The General Theory of Second Best", Review of Economic Studies, 24 (1956), pp 11-32 for the seminal work on general equilibrium efficiency conditions under an inefficiency constraint in one industry.

PART II

STATUTORY FRAMEWORK

Part one dealt with the various levels or points of potential regulatory intervention, some theoretical implications of alternative regulatory practices, and a mechanism for classifying the various styles of intervention for differing regulatory boards; that is, some 'hows' and 'whys' of regulatory intervention. The analysis to this point has been basically general. While the examples have been from air transport industries, the analysis of the basic mechanism of intervention and the various styles of regulatory boards could be applied through any industry, and through any geographical location.

In this section, two particular cases will be considered, the Canadian and the U.S. air transport industries. It should be reiterated at this point that the basic hypothesis of this thesis is that the regulatory practices and policies of a given regulatory agency (that is, a specific matrix of regulatory actions) creates a regulatory environment which, to a significant degree, "explains" differences in the performance of the regulated industry. The two industries have similar potential technological development, sufficiently similar types of routes to permit the use of identical equipment, and (yet to be demonstrated) similar exogenous regulatory constraints. It will be argued in Part two that: (1) the official goals of regulation in Canada and the United States are similar; but that (2) the regulatory practices and policies of the Canadian

Transport Commission and the Civil Aeronautics Board, respectively, are different. Because (3) the performance goals of the two regulatory boards are different, (4) the patterns of intervention within Canada and the U.S. have differed, and (5) thus the performances of the two industries have differed.

Chapter six will discuss the legal and institutional setting, including the statutes dealing with air transport regulation in the U.S. codified in terms of structure, conduct, and performance. Chapter seven will do the same with respect to Canadian law. Chapters eight and nine deal with the U.S. (CAB) and Canadian (CTC) regulatory boards, respectively, and seek to determine their performance goals as revealed in stated policies and actual intervention with respect to structure and conduct. The expected economic implications of these policies will be noted as they become relevant. Chapter ten will conclude the analysis with a summary of each country's performance, concentrating upon the reasons for differences between the two, and upon those differences which can be ascribed to regulatory board actions.

CHAPTER SIX

THE LEGAL AND INSTITUTIONAL SETTING: U. S. A.

In the first chapter, the market was defined for the purposes of this thesis as the scheduled, passenger, trunk line movements, a definition strongly conditioned by the existence and workings of the CAB and the CTC. While the nature of passengers (as a subset of freight) might serve in and of itself to create passenger movement as a distinct class of air carriage, the separation into scheduled and trunk or mainline carriage is conditioned by the regulatory agencies. One would expect that size, number, share of the market, and other such structural variables might very well differ without the regulatory agency. The existence of differing policy goals with respect to different classes of carriers on the part of the regulatory boards in question have certainly served to institutionalize, if not to create, a set of trunk or mainline carriers which operates under a distinct set of policy priorities.

To demonstrate that regulatory bodies have some performance impact, one may approach the question in the following manner. Given two markets, both of which have a regulatory body as part of the institutional structure, and if the underlying economic substructures are essentially equivalent, then if the performances of the carriers

differ substantially, at least one of the regulatory agencies has had some impact on the operation of the industry. This chapter and the next seek to demonstrate that the Canadian and U.S. air transport markets, and the structure of the regulatory agencies are sufficiently similar in terms of the underlying legal and institutional settings to permit comparison. Insofar as they are, differences in performance can be "explained" as the result of the differing practices and policies of the CAB and the Air Transport Committee of the CTC.

The legal and institutional setting consists of the framework in which the regulatory body must operate. This setting provides a set of parameters over which the boards have essentially no control; that is, a set of constraints under which the board must operate. The legal constraints deal with the limitation on the boards imposed by statute law. These limitations will be considered later in this and the next chapters. "Institutional" constraints consist of limitations imposed by the economic substructure, and will be examined first in order to demonstrate that the assumption of comparability is not an unreasonable one.

THE MARKETS

(1) THE SUPPLY SIDE

In the case of the supply side, two industries or firms will be

assumed comparable if each has access to applied technology of the same vintage at essentially equivalent cost. For the purposes of comparison, therefore, it is appropriate to investigate the respective levels of variable or operating costs, principally attributable to (a) right of way and landing costs; (b) the operating characteristics of the types of aircraft utilized (that is, the applied technology); and (c) other marginal right of way maintenance costs; and the level of (d) fixed or ground costs.

(a) Right-of-way and landing costs:

Airports and flight control in both Canada and the U.S. historically have been provided by non-carrier, in both cases government, bodies. In the case of the U.S. domestic carriers, terminal facilities must be constructed by the carriers, whereas in Canada these are constructed by the government. In the U.S., local ownership of airports may lead to competitive inter-airport bidding, thus lowering the price of using the airport. When the full cost of landing fees, user costs, etc. are added up, the Canadian figure for use of right-of-way and landing costs is generally somewhat higher than in the United States¹.

(b) Aircraft:

One of the most significant costs of a variable nature is the cost of the plane and fuel. While the amount of fuel does not vary greatly over the number of passengers (and even, within bounds, over the distance flown once the plane has attained cruising altitude) the cost of fuel until recent times has been higher in Canada than in the United States. This situation has altered somewhat over recent times, to the extent that during the winter of 1973-4, the Canadian domestic operators were in a preferred position, certainly to the extent of being guaranteed fuel for their operations. In respect, however, to the type of plane used, there is substantially no difference in the operation of the Canadian and U.S. trunks ². Over a trunk haul, with a given passenger capacity and a given load factor assumption over a given time period, there will be generally at most a few planes which could economically be utilized. Thus the cost per potential passenger mile attributable to the airplane will be relatively the same in the U.S. and Canadian trunk lines; the actual operating cost per passenger mile will, of course vary over the stage distances and the load factor.

Additionally, the utilization of planes may vary between carriers, given the length of the stage haul and any seasonal variations, both of which differ drastically among and between classes

of trunks. Air Canada, for example, operates a relatively short stage haul on average as compared with the domestic U.S. trunk operations, while C.P. Air operates on a relatively large stage haul on average. However, (the average figures are biased somewhat, insofar as they include both domestic and international operations for the Canadian carriers³.

(c) Maintenance Costs:

Maintenance costs in Canada may be higher than those of the trunks in the United States due to the relatively poorer weather conditions. However, insofar as wage rates have tended to be lower in Canada, some of this increased potential cost has been mitigated.

(d) Fixed or ground costs:

As previously mentioned, wage levels have been generally lower in Canada than in the United States. As a result, ceteris paribus, one would expect lower costs for the total of the wages and salaries portion of the transport operation. Within Air Canada, at least, a certain portion of this advantage is mitigated by the relatively larger number of small stations requiring service personnel. As such, Air Canada has maintained a larger than average staff in order to ensure staffing for service which, in the absence of a regulatory

network, might well be abandoned.

In total, one might find, as Mr. Pratte (President of Air Canada) has argued⁴, that it costs more to run an air line firm in Canada than in the United States, but the degree to which these costs are higher is not clear. Terminal costs aside, one might expect to find these costs to be roughly equivalent, while the provision of aircraft and terminal facilities, being provided by the government, is in and of itself, of course, a policy decision. Insofar as the differences in costs represents a difference purely in policy, then the supply curves of the two firms will be assumed close enough for comparative purposes.

(2) THE DEMAND SIDE

The most recent study and certainly the best, on the demand side of the Canadian air travel market, is that of S. Rajani⁵. It is worth noting his conclusion:

The analysis indicates that Canadian per capita trip generation rates will continue to be lower than those of the United States in the foreseeable future as long as the United States incomes and GNP per capita remain higher than those in Canada. City-pair air traffic in Canada will remain at a higher level than in the United States due to concentration of population and industrial activities in a relatively few centres.⁶

Rajani dealt with growth trends in air passenger trips (annual total) in Canada and the United States for the periods 1960-1971 and

1950-1971 respectively⁷. It is interesting to note the following points about Rajani's figures: (1) For a given level of per capita income, the Canadian trips generated per capita are everywhere higher than in the U.S. However, assuming air transport has become, *ceteris paribus*, a more popular travel mode over time (and certainly the advantages of speed have made it likely that this would be so) part if not all of the difference must be attributed to the overlapping but not coincident time periods under examination⁸.

(2) In terms of the calculations, there was no attempt to correct for exchange rate differences.

(3) During the early 1960's the Canadian GNP and population was growing at a more rapid rate than that of the U.S., but the Canadian trip generation over the same time period grew less rapidly. This would suggest a higher income elasticity of demand in the United States, but the trend weakened during the period from 1966 to 1970 and reversed itself entirely during 1970-74, suggesting other forces at work. (For instance, during the latter periods considerable Canadian emphasis was placed on the development of a transcontinental policy for air transport, along with the rationalization of regional markets). Table 4 provides figures on the growth rates of revenue passenger miles in Canada and the United States.

TABLE 4

GROWTH RATES OF CANADIAN AND UNITED STATES REVENUE PASSENGER-MILES				
Year	Air Canada ^a	C.P. Air ^b	A.C. + C.P. Air	U.S. Trunk ^c
1967	26	(01)	24	16
1968	2	48	4	25
1969	4	88	9	14
1970	11	24	12	9
1971	(02)	3	(02)	(01)
1972	14	18	15	4
1973	27	11	25	10
1974	7	45	12	7
1966-70	10.1	35.8	12.1	16.6
1970-74	11.0	18.2	12.1	4.9
1966-74	10.6	26.7	12.1	11.0

source: Percentages calculated from data from Bekooy, Jan. Op. cit.

a. RPM's in the North American market

b. Transcontinental RPM's

c. Domestic RPM's of the trunk carriers.

(4) The city pair data referred to in the conclusion supra indicates that within a city of a given size, the Canadian market would generate more trips than the U.S. market. Thus an air carrier in Canada would tend to expect city pair demand levels reasonably comparable to those between U.S. trunk city pairs served, which movements tend to be between larger cities. This implies that for the purpose of this study it can reasonably be concluded that the demand side characteristics are similar in both markets, as well as the cost side characteristics, and therefore that the economic substructures are sufficiently similar for the analysis to proceed.

The next question to be considered is that of the legal setting. To what extent do the regulatory agencies exist within similar legal frameworks? In order to analyze this, one must look at the U.S. and Canadian statute law and at the various regulatory "actors".

THE ACTORS

The broad constraints on regulation are established by bodies exogenous to the regulatory agencies, bodies which are thus indirect actors in the regulatory scene and whose influence is felt directly only under particular crisis circumstances. That is, one would expect bodies such as the legislature, save in exceptional cases, to set out regulatory goals and limits and to eschew direct intervention.

With respect to the U.S. trunk carriers, there are two major federal agencies with which a carrier may be expected to deal regularly. (1) The Civil Aeronautics Board (CAB) and (2) the Department of Transport (DOT), which includes the National Transportation Safety Board (NTSB) and the Federal Aviation Agency (FAA). The indirect actors consist of (3) Congress, (4) the Courts, and (5) the Executive.

(1) THE CAB

The Civil Aeronautics Board had its origin in the Civil

Aeronautics Agency (CAA) created by the Civil Aeronautics Act of 1938. In 1958, the CAA was divided into the FAA, which was to be responsible for air safety regulations, and the CAB, to be responsible for the economic regulation of the industry. The CAB was established as an independent agency, no longer tied--as the CAA had been--to the Department of Commerce. As a result of the DOT Act (1966) those air safety investigatory and developmental functions remaining under the CAB were transferred to the National Transportation Safety Board (NTSB). This left the CAB as an independent economic regulatory board, quasi-judicial in status, having statutory powers with respect to air transport to regulate rates, allocate routes, to subsidize to a certain extent, and determine the developmental and other policy of air traffic as a modal participant.

(2) THE DOT

With the creation of the DOT in 1966, the FAA was transferred into the substructure of a government department, and the NTSB took over the remaining safety questions dealt with previously by the CAB. AS a result, federal airport spending, the air navigational and regulatory function, and the safety investigatory and developmental functions were all consolidated under the auspices of the Department of Transport. Theoretically, the Department of Transport is encouraged to make broad range policy determinations. However, since

there is no direct responsibility of the executive branch to the legislative branch (as in Canada through the party in power) policy can only be implemented through the executive (as per executive order) or through the Congress. Section 4 of the DOT Act states that no major policy change can be instituted except through the Congress. Thus, DOT, if it wishes, may devote time, energy and resources to the development of policy actions, but there is no reasonable guarantee that such actions can be instituted. Under certain political configurations, the DOT could play an active policy making role; however, in the absence of a healthy working relationship between the department and the Congress, CAB remains the lone policy instrument. Since the CAB is an "independent" regulatory agency, it is responsible only to Congress, and that rather indirectly (excepting control via direct legislation) through financing requirements.

In the absence of some sort of intermodal conflict, there is no reason to expect Congress to utilize the suggestions of DOT in the face of active resistance from the CAB, which is defined as a board of experts with respect to air transport matters. Congressional financial authority for the funding of independent agencies such as the CAB, however, does give the opportunity for the exercise of a certain amount of influence.

(3) THE CONGRESS

As the author of the statute law, and thus as the ultimate reviewer of any and all regulatory actions, the Congress is theoretically the most important regulator. As previously noted, however, the Congress has delegated the economic, regulatory and promotional policies in air transport to the CAB, largely eschewing active intervention.

(4) THE COURTS

Any matter of law, including the jurisdiction of the CAB, is subject to interpretation by the appellate Court system. As such, the courts may, by definition, limit the actions of any quasi-judicial board. In fact, of course, the limits of the power of the CAB have, over time, developed into a well defined set, so that the role of the courts has been a background one.

(5) THE EXECUTIVE

The President, by executive order, may direct any agency within his power to act in a certain manner. One of the principal reasons, it would appear, that the CAB was not integrated into the DOT structure, and that the Department was not allowed to create policy in

the absence of direct legislative approval, was concern that power would, potentially, be shifted more heavily to the executive branch than would be desirable. As such, the CAB is not responsible to the executive branch, but only directly to the Congress⁹.

The Legal Framework

In order to justify the assumption of reasonably comparable Canadian and U.S. legal settings, it must be demonstrated that the constraints imposed upon the respective regulatory bodies are similar with regard to powers, responsibilities, and limitations of action. If this comparability does exist, then given similar institutional settings, different board objective functions will result in differing performance goals and thus regulatory practices and policies.

The constraints imposed by statute laws will be analyzed by means of a codification which will collate the Canadian and U.S. statute interventions within the industrial organization context of this study.

U.S. STATUTE INTERVENTION

The equi-power United States division among the legislative (the Congress), judicial (the Courts), and executive (the Presidency)

branches of government was intended to serve the political needs of the country while minimizing the centralization of power.

Quasi-judicial boards, while creations of the legislative branch, have historically been assigned considerable autonomy; the Civil Aeronautics Board is no exception. The constraints on that independence will be discussed in some detail below.

(1) STRUCTURE: DEMAND SIDE

Market structure has been defined as: "...those characteristics which seem to influence strategically the nature of competition and pricing within the market."¹¹ This section concerns itself with the limits on intervention imposed by statute, not with the mechanics of intervention per se. In fact, very little intervention occurs (nor has it a solid legal foundation) on the demand side of the market, and is generally confined to the supply side, but there may well exist induced demand side responses to various supply side policies.

(a) There is no solid legal foundation for direct intervention into buyer concentration. The only intervention, if it can be called that, in terms of entry and potential entry into the buyers' side of the market is via the development and fostering of air commerce¹² and the concomitant implications of airport and landing facilities construction. Certainly the development of airports will make it

easier for any given person to utilize air trunk operations, even if these airports are designed principally as feeder or regional stops¹³.

(b) Alterations of the income distribution are not directly related to the air transport market through the linkages of air transport regulatory practices and policies. While changes in the distribution of income may be expected to influence demand, the regulators have neither the legal nor the practical power to do more than take that distribution as a given.

(c) There is considerable potential for intervention with respect to information. All basic rules, rates, including changes or potential changes of rates, must be made public knowledge¹⁴. Additionally, connecting air lines are required to make available on request the times and availability of schedules and rates for these connecting flights.

(d) In regard to the tastes for, or in this case, potential fear of this mode of transport, the development of the FAA, and the later transfer of the safety monitor function to the NTSB within the Department of Transport can serve to diminish fears. This could result either by effectively reducing the number of accidents or by being seen to be actively concerned with safety, thereby generating the assumption is made that there will be fewer accidents.

(e) Insofar as it can allow or deny discriminatory pricing¹⁵, the CAB can also encourage or discourage the sale of differing products, such as coach versus economy versus first class service. In this sense, the CAB has the power to encourage or discourage actual differentiation within the mode. As far as the creation of perceived product differentiation, generated by advertising, is concerned, there is no direct Board intervention. However, the CAB can indirectly influence this through the power to disallow rates (for instance, on the grounds that a reasonable and prudent management would not have required an increase, as the airline need not have spent so much on advertising); and through the allocation of mail payments. For example, ruling that while a carrier may need this money it was only because the management "wasted" advertising expenses. It should be noted, however, that in both of the foregoing cases, excessive advertising might in fact serve to encourage the Board to allow fare increases or allocate to them a higher percentage of the mail subsidies. As such, the effect would depend on the action of the particular board in question, a topic for later discussion.

(f) Finally, there are a number of general encouragements to demand for air transport as a derived demand.

Demand for air traffic is encouraged, directly by Section 323

(b) which allows federal employees to use air transport without direct cost comparisons to other modes at public expense.

More indirectly, the considerations of the promotion and development of air transport¹⁶ by the CAB and the full consideration of the needs of the national defense¹⁷ by DOT could serve to increase demand in the following manner. If excess capacity must be held for military or potential developmental needs, and if the cost curve is declining, in order to induce the quantity demanded to increase, a firm might be allowed to lower its prices to a level which would (with a smaller plant) be below the level of cost prior to building the larger plant. When operating under a rate of return constraint, with a hill shaped profit function, given that excess capacity must exist, if two equally profitable points exist (both at the maximum acceptable rate of profits, but below that of profit maximum maximorum), one would expect that the air carriers would operate further to the right (that is, at the higher level of quantity) particularly if demand is expected to increase over time.

The supply decisions taken with regard to the provision of complementary facilities (airports, rapid transit airport access, and so on) have obvious potential for influence on the level of demand for air travel, and upon the elasticity of demand, at the margin in terms of their relative prices, and in a discontinuous fashion as a function of their existence or non-existence, but the Board has no direct power to operate on these variables.

(2) STRUCTURE: SUPPLY SIDE

As noted in Chapter 3, intervention could occur through control over those characteristics which "strategically influence the nature of competition and pricing within..." the air transport scheduled passenger carriers. The characteristics which were mentioned were:

(a) degree and ease of entry and exit of firms, including concern over existing barriers to entry and exit; (b) seller concentration; (c) interlocking directorates; (d) product differentiation, including quality differences; (e) unique factor market considerations; (f) peculiar marketing techniques; (g) information availability and (h) organizational characteristics resulting from particular objective functions of the producers.

(a) Entry and Exit:

There are generally two ways for a firm to enter an industry: start a new concern or purchase, merge with, or in any other way acquire control over, a going concern. The CAB has control over both of these methods; the statutes¹⁸ clearly lay out the necessity for obtaining a certificate of public convenience and necessity from the Board. Similarly¹⁹, the Board has vested in it the power to allow or prevent any merger or other means of obtaining control over an air carrier. Finally, exit is controlled by the Board²⁰.

Consider, first, the legal position of the Board in dealing with entry of a new concern into air transport. It should be noted that the Board must grant the prospective operator a certificate to engage in air transport, and must specify the terminal and intermediate points where the airline can operate.

The statutory requirements involved in the granting of such transport certificates include the Board's determination the the applicant is "fit, willing and able" to perform its duties, will conform to the rules, regulations and requirements of the Board, and that the operation to be approved be required by the public interest. Thus, barring any other legal or institutional barriers to entry, if it is the opinion of the Board that sufficient numbers of carriers are already in operation, the Board can refuse entry on the grounds that additional carrier participation is not in the public interest.

The finding that an applicant is "fit, willing and able" consists of a Board judgement that the new firm is capable of operating with plant which will be in the economic range of production overall, and, given that firm's specific plant, presumably at a level of output (given demand conditions) in the neighbourhood of minimum average total cost.

The firm must be seen to be willing to obey present and future Board rules and regulations, including particularly those related to safety.

Determination of whether a particular firm entry will be in "the public interest" cannot be accomplished without an explicit or implicit Board view of the optimal market structure. The following questions about the objectives of the Board are relevant: (i) Does the Board have a conception of the short and long run cost structure of the industry? (ii) Does the Board have some view of demand patterns in the industry? (iii) Does the Board have some view of the optimum number of firms in the industry, within submarkets disaggregated along routes, or on some other bases? (iv) Does the Board have some particular distributional considerations either on the factor or product, user or carrier, sides? (v) If so, what is the linkage between these considerations and the choice of carriers to fly particular routes or within the industry as a whole? These considerations will be examined in the chapter on the objective function of the Boards.

A final question which must be considered is the nature of barriers to entry other than those imposed institutionally by the Board itself and those imposed institutionally by agencies not within the purview of the Board, for example by DOT. The Board may wish to

fulfill certain characteristics of operation by selection of the numbers and the particular carrier(s) to operate along a given route or within the market as a whole, but will find itself limited insofar as there are technical or demand-induced barriers to entry. Given the existence of such barriers, there emerges a trade-off between larger numbers of producers and lower with the ultimate outcome influenced by the objective functions of the Board, Congress, and DOT. It is clear from the relevant statutes, however, that no such trade-off is envisaged, given that these potentially conflicting goals are to be pursued simultaneously²¹.

It is worthwhile considering in turn each of the subsections of Section 1302 with respect to the implications for the entry of new firms. The Board, in the public interest, must when evaluating the application for a new certificate, consider: (a) the encouragement and development of an air transport system properly adapted to the present and future needs of the users²². Roughly translated, this might be taken to refer to the fostering of enterprises of sufficient number and size to ensure that at expected prices, there will be a given minimum amount of air transport capacity provided. Thus one would expect the Board to consider whether demand is expected to increase through time. If not, then adequate present capacity would presumably be a sufficient condition for the denial of the application. If so, or given current over-utilization of plant (or

given expiry of a certificate accompanied by application by a lower-cost carrier than that currently certified) then further consideration is warranted. Given the desirability of expansion, the Board must then choose between permitting entry of new firms and the expansion of present carriers.

The Board is further required to conduct (Section (b)) "the regulation of air transportation in such a manner as to recognize and preserve the inherent advantages of, assure the highest degree of safety in, and foster sound economic conditions in such transportation, and to improve the relations between and coordination by air carriers". Safety aside, this directive can be translated with respect to its implications for entry as follows: There should not be more air carriers within the market than it is anticipated will be able to survive over a reasonable time. Similarly for an individual carrier, there should be some reasonable expectation that the management, financing, and expertise of that carrier be sufficient to ensure that it can survive and continue to operate within the foreseeable future. The Board must also be concerned with the existing carriers, and the economic impact of the diversionary implications, if any, engendered by the new entrant. The "sound economic development" question aside, "the concern with the inherent advantages of air transport" follows directly from the regulation of rates. Insofar as air carriers compete as a group with other transport modes, "inherent

advantage" must be taken to mean the set of characteristics in which the air transport industry has (at least) a comparative advantage²³ over alternative modes, such as the rapid movement of passengers and freight. Under Pareto-optimal general equilibrium conditions, the prices associated with various output characteristics such as speed of movement would reflect the relevant marginal social benefits. In the real world of market failure²⁴ and regulated prices there is no certainty that rates charged by this mode viz a viz other modes will be at their optimal (efficient) levels. Insofar as prices and outputs of other modes are regulated by exogenous agencies in order to offset some of the problems of market failure, the socially desirable set of prices and quantities of air transport can generally be expected to differ from those which would be optimal in a world of free competition²⁵. The CAB must thus concern itself with the failure of success of the other regulatory institutions in achieving 'first best' solutions.

In section (c) the Board is ordered to promote (i) adequate, (ii) economical, and (iii) efficient transport without allowing (i) unjust discrimination; (ii) undue preference or advantage; or (iii) unfair or destructive competition. The exact interpretation of these terms is open to some question, but it is possible to interpret them within the context of standard economic theory. Let us assume that 'adequate' refers to the provision of capacity of sufficient quantity and quality

to serve the present markets; 'economical', to the provision of that capacity at the lowest possible average cost curve consistent therewith; and 'efficient', to being at the lowest point on the average cost curve and at the point where $P = MC$. (This latter, of course, is not one condition, but two, and may require the joint regulation of cost and demand factors).

The implications for entry would be to insure that airlines which are allowed to operate are those which (a) have the lowest possible cost curves (if there are any differences) and which (b) operate at load factors which are consistent with the minimum AC. Consider Figure XV, which displays a horizontal long run average cost schedule²⁶:

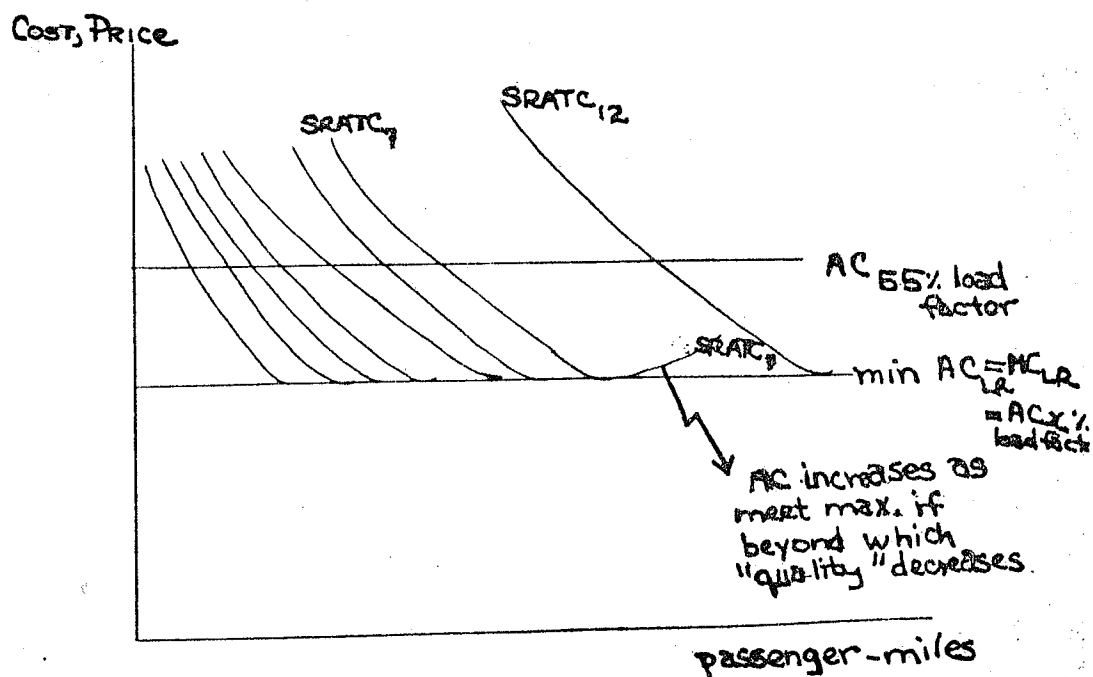


FIGURE XV

The horizontal average cost curve implies constant returns to scale at any given load factor while the relevant short-run schedules exhibit low marginal costs (rapidly declining average costs) up until a critical load factor is attained, at which point quality of service declines and the marginal cost of a unit of output increases²⁷, generating a rising short run average cost. Thus the job of the Board

is to ensure the operation on $\text{Min AC}_{\text{LR}}$. Insofar as this requires a movement to increase capacity by the addition of a different number of planes, the Board could either allow expansion of given carriers or the entry of a new carrier. The statutory constraint on the Board's ability to institute capacity regulation of carriers²⁸, however, renders the process of fostering minimum average cost performance somewhat more complex²⁹.

Finally, insofar as conduct variables such as discriminatory pricing, undue preference or advantages, or unfair or destructive competition can be altered or discouraged by entry or exit, the impact on the conduct of the particular number and mix of entrants to a market might well be a topic for the consideration of the Board.

The fourth major consideration of the Board for entry in the public interest is the mandate for "competition to the extent necessary to insure the sound development of the air transport industry"³⁰. This constraint can be viewed as ensuring that the industry is so structured that firms will be induced by competition (or the threat of competition) to adopt, through time, the lowest-cost form of technology. Consider Figure XVI.

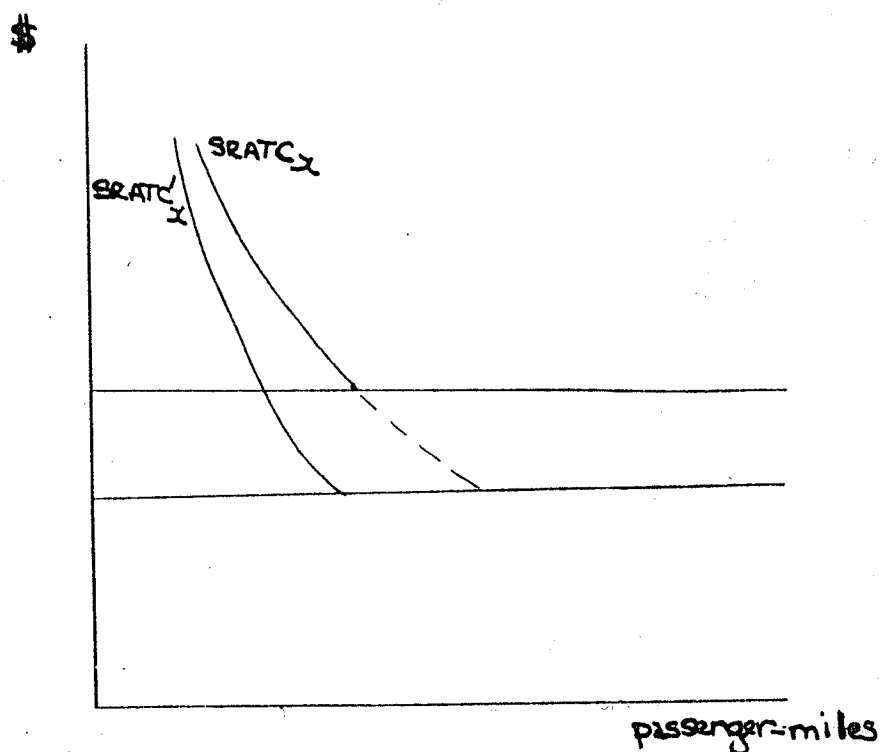


FIGURE XVI

Were the firm(s) able, by introducing a new type of plane, to lower the cost curves from $SRAC$ to $SRAC'$, this will be done only if:

- (i) there is an increase in the allowable profit margins; or (ii) firms are not currently operating at the maximum allowable profit; or (iii) there is some degree of competition or potential competition such that profit will decline if the new lower-cost techniques are not adopted.

Since the promotion of safety is principally the occupation of the FAA, the only relevant consideration of the Board with respect to entry is whether or not there is some reason to expect that expansion of a present, experienced carrier might provide the user with safer transport than that which would be provided by a new entrant.

Finally, the CAB has been specifically instructed to recognize that the expansion and development of civil aviation is per se in the public interest, and hence is to be encouraged.

To remain in operation, airlines must be able to earn at least a minimum rate of return. Hence the goal of lower costs, which might be fostered by entry, must be weighed against the lower profits and increased uncertainty which might mitigate against the development and encouragement of the airline carriers which are presently in the market.

Similar considerations apply in regard to exit. As the Board has total control over entry, so it has total control over exit. Theoretically one would expect two distinct classes of exit: (1) carriers being told to leave because the Board feels that the removal of a particular carrier, or a decrease in the number of carriers in a specific market, is desirable given changes in demand or technology; (2) carriers wishing to abandon service in a market in which they are

losing money, (or are at least failing to cover their opportunity costs). As with entry, the Board may allow exit if it is in the public interest. Suppose that the CAB determines that there is excess capacity in a submarket. The certificate, however, can not restrict the right of carriers to change schedules or equipment and facilities in regard to the trunk common carriers. The Board has the power to alter, modify or suspend a certificate after hearing, but it may not revoke a certificate unless the carrier has failed to comply with the rules and regulations of the Board or the conditions of its certificate³¹. Similarly, each certificate is in effect from the date specified on the certificate until it is revoked or suspended, unless it is originally issued with a specific time limit. As such, it is a somewhat open question whether or not the Board can directly remove a carrier from the market. Such tactics as lowering the allowable fare, upon appeal from interested parties, and thereby inducing a loss to a high cost carrier, or other such similar forms of driving a carrier to request permission to abandon the market might have to be utilized.

The final question which must be considered is entry or exit through merger, with purchase of, or acquisition of, a going air transportation concern. Each of these methods of entry/exit is regulated and controlled by the Board. Consider the following areas in which the Board has control regulations: limiting transfer of a

certificate to that approved by the Board as being consistent with the public interest³², and, unless approved by the Board, it shall be unlawful³³ for two or more carriers or foreign air carriers or any other common carrier or person engaged in aeronautics to consolidate or merge, purchase, lease or contract to operate a certificated air carrier³⁴. Similarly, the statutes control such consolidations, contracts, or acquisitions through merger, purchase, control or contract of carriers³⁵; and finally, preclude the retention of an officer, director or member holding a common interest in carriers or aeronautical operations to be retained as an officer or director of an air carrier, without the permission of the Board³⁶. The Board can grant permission for such mergers, consolidations, interlocking relationships, etc., only when it determines such to be in the public interest and then, under the proviso that no such merger, acquisition of control, consolidation, purchase, lease, or operating contract be approved, were it to result in creating a monopoly or monopolies and thereby "restrain competition or jeopardize another air carrier not a party to the consolidation, merger, purchase, lease, operating contract or acquisition of control..."³⁷ This provision aside, the previous discussions on entry apply mutatis mutandis to exit. The addition of the clause dealing with restraint of competition really adds no new information, since the Board is already constrained to provide competition "to the extent necessary". Similarly, the merger of two previously competing carriers, resulting in a monopoly in one

submarket, could only be seen to restrain trade insofar as the Board does not compensate by allowing the expansion of another carrier presently operating, or entry of a new carrier. Where this is not possible in light of the demand situation and the cost conditions which would hold given that the carrier has reasonable and prudent management, one would presume that the optimal number of firms would be precisely one. Insofar as the merger served to allow continued service in this submarket, there should be no problem. There are, as precedents, several submarkets in which trunk carriers now face no competition from other trunks. The only additional piece of information which might add a constraint on the Board's actions is the condition that a merger should not "jeopardize another air carrier not a party to this merger...". Insofar as the CAB views the mandate to encourage civil aviation as requiring either some minimum rate of return or "immunity from jeopardy" for the currently operating carriers, this does not add any additional constraint. However, it automatically serves to make any carrier a party directly interested in discouraging mergers or the like unless it is likely that that company is anticipating such a merger in the near future. This passage tends to encourage the belief that the writers of the legislation did in fact have in mind the protection, at least when possible within the confines of necessary competition, of the operating carriers from unpredictable tactical intrusion.

(b) Seller Concentration:

Seller concentration within mainline air transport is basically limited by two factors, both broadly under the control of the Board. These are: (i) the granting of certificates of public convenience and necessity by the Board; and (ii) traffic generated in the monopoly markets and market shares resulting from competition in the submarkets, along routes. Since a certificate of public convenience and necessity must include all terminal and intermediate points, granting of entry gives the carrier the right to participate in a particular submarket, or set of submarkets. Seller concentration figures are usually calculated by taking the participants in the market and then ranking (for example) the share of the market sales (in terms of the number of revenue passenger-miles, perhaps) generated by the largest, two largest, three largest, etc., firms. If one firm should be particularly successful in pricing, scheduling, and other forms of product differentiation along a particular route (submarket), market shares calculate on the basis of aggregate market data might well understate the effective degree of concentration. On the other hand, if firms' cost curves are reasonably similar, we would expect to find such a situation only in the case of a natural monopoly along a given route, or given carrier collusion.

Consider the case in which the Board regulates (only) entry, and assume that carriers' cost curves are roughly similar and U-shaped³⁸. In the case of natural duopoly or small numbers oligopoly, and in the absence of an external price constraint, we would expect carriers' recognition of interdependence to lead to non-price, rather than price, competition. (If the Board also regulates price, of course, it is evident that all competition must be non-price). Thus, since the expansion of capacity may be a tactic adopted in an effort to capture a larger share, concentration measures based on share(s) of capacity and share(s) of sales may yield different results.

(c) Interlocking Directorates:

The concern about interlocking directorates is a concern over the degree of potential influence of one firm over the decisions of another. The regulatory constraints, as have been mentioned, expressly forbid this sort of interaction, unless the Board finds it 'in the public interest'. The Board might, for example, permit such a relationship in the interests of restraining interfirm rivalry, or of utilizing scarce managerial expertise in order to achieve the lowest possible output cost levels.

(d) Quality and Other Forms of Product Differentiation:

The existence of product differentiation by air carriers illustrates the attempt to use non-price competition, in a price-regulated environment, to influence carriers' demand schedules. Product differentiation within air transport, as previously mentioned, can take several forms: frequency and time of flights (thereby according more closely with the desires of a consumer for a particular movement between particular points at a particular time); service differentiation (including such considerations as the number of stewards or stewardesses per passenger, quality of meals, availability of movies or morning papers, and the like); an increase in safety or comfort through the introduction of new airplanes or better maintenance of currently used planes; the availability of space in terms of the square footage per passenger in coach and in first class; and the guarantee of, or lack of guarantee of, a reserved seat.

As previously mentioned, the Board does not have the right to regulate directly the timing or frequency of service offered by a particular carrier. However the Board does have the right to pick a price level at which the carriers may operate, and assuming Board knowledge of firm cost curves and non-price "quantity" competitive strategy, it will be able to induce carriers to adopt desired frequency levels.

As regards the number of stewards, quantity and quality of meals, the provision of in-flight entertainment and other amenities, these factors are at the discretion of the carriers³⁹, and thus the Board has at best indirect influence in the matter of product differentiation.

Since safety is, at least to a minimally acceptable base, regulated by the FAA, it is under the auspices of exogenous, but distinct, regulatory control. However, with the increase in demand and usage of air transport, and given that the number of accidents is already reasonably low, one would presume that safety is not a highly useful differentiation tool. Additionally, since the cost per accident including the impact on total demand is high, it is likely in the interests of all carriers to maintain fairly high standards in regards to the maintenance of the carriers' aircraft.

The coach versus first class service differentiation represents one of the first significant forms of product differentiation in air transport. In quantity adjusted terms, first class can be viewed as some percentage of coach service based on square footage and other amenities. If cost differentials are proportional to space differences⁴⁰, then whether or not 'real' product differences exist, the Board will have an indirect influence on services offered via control over the fare structure. Previous to the time period which

marked the introduction of coach as a common means of transport, the Board did not look kindly on the introduction of such service at lower fares. The principal concern was whether passengers using the lower priced service were the result of traffic diversion from other firms as opposed to new traffic creation. The new service represented a larger number of seats available per flight, and hence a lower marginal cost per passenger mile. Thus it was predictable that this new service category would be utilized as a competitive device by being offered at a price lower than that of first class passenger service. With an improvement over time in carriers' total profit pictures, the introduction of increased numbers of coach flights at coach fares became an extremely valuable competitive tactic. The Board, for example, went so far as to award additional routes to airlines in large part on the basis that this particular carrier was offering a coach service⁴¹.

Insofar as the costs are proportional and prices charged for the service are proportional, no price discrimination exists between coach and first class. There is, indeed, under such circumstances, a question about the degree to which the product should be described as differentiated; the description is appropriate only in the light of indivisibilities which prevent consumers from purchasing non-integer multiples of a unit of coach service except in proportions chosen by suppliers. It is this fundamental indivisibility which permits

carriers to use non-discriminatory 'quality' differences as a competitive tactic, subject, of course, to Board regulation of fare schedules.

The sale of reserved seat space as opposed to stand-by space is another form of product differentiation. Again, considerable caution must be exercised in determining whether or not quality adjusted price discrimination is built into differing prices for these different products as at first glance appears to be the case. Whether or not the Board would allow fare differences other than for promotional reasons, the relative range of these differences will determine the popularity in practice of such product differentiation.

Certainly it is to be expected that some increase in demand would be generated by the offering of reduced fares. The offering of coach class served to lower the 'average' fare, even given that that fare reflected precisely the carriers' cost savings, since space and other amenities are a relatively minor component for most passengers, of the total transportation package, and hence served to encourage air travel. In addition, of course, the lower fares might well be expected to influence the types of passenger and passenger demand, as well as the absolute level of demand.

(e) Unique Factor Market Considerations:

Several factor market conditions are of particular interest in terms of differing performance variables which would be expected to result if these factor market conditions were altered. These include: (i) the regulation of vertical integration; (ii) restrictions on hiring of particular types of trained or highly skilled employees; (iii) restrictions on the payment for these types of employees which alter the marginal cost of providing the final product; and (iv) unique bargaining or negotiation mechanism (such as a guarantee that the government would intervene in the case of a dispute), which alter the cost of providing the service or the expected level of demand.

As was previously mentioned in the section on mergers, there is particular concern over any degree of vertical integration within aerospace industries. The Board is directly responsible for finding a public interest argument in favour of allowing such integration; under the "usual" U.S. anti-trust procedures, the responsibilities would lie with the judicial agency to find cause why such integration should not be allowed. There appears to be substantial reason for assuming that vertical integration will not be allowed in fairly concentrated industries. However, since the Board is at least partially responsible for any degree of concentration there is no reason to presume that this must be a concentrated industry. In the absence of

governmental control over entry, indeed, there is very little reason to presume air transport would be a concentrated industry⁴².

Certainly insofar as the safety regulations deal very much with the character and minimum requirements of hiring certain key individuals, such as pilots, copilots, etc., one would expect that the cost of labour, at least this particular component of labour, would be higher than in the absence of such regulations. The impact on total cost depends on the degree to which minimum safety requirements are necessary to insure that the number of accidents is acceptably small. If the restrictions tend to correlate one to one with the cost of, and, (implicitly) the number of, such accidents, one might expect there to be no change in the costs to the airlines, although the relative cost of labour to capital might change. However, the effects of a large number of crashes, though in total not adding to the cost of providing transport, might be expected to have an impact on the number of passengers who in the future would consider riding on airplanes. Given that there is a positive preference for increasing the safety of air transport and for increasing the demand for same, one would expect that ceteris paribus, the equilibrium costs of operations will be at least as high, and probably higher, than they would be in the absence of such safety regulations. Further, insofar as there is a declining marginal return to increased safety, one expects that there will be more safety generated than in the absence of such

encouragement. As such, one would expect that there would be relatively larger increases in cost to increased demand, and therefore, that the price would be relatively higher and the output lower than would be the case were there no statutory dedication to such regulations.

Similarly, the Board may determine levels of service at given load factor standards on the basis of an assumed number of stewards and stewardesses, the present level of support staff and the like, and assume that prudent management should be able to make a reasonable rate of return therefrom. Insofar as this estimation is in error, that is, were the carrier to hire an additional stewardess on certain flights, there would be an increase in the utilization possible before the quality of service declined sufficiently to cause an increase in "cost". Such calculations would tend, as a result of the regulation, to cause a lower quantity at a higher cost to be offered for sale, than would otherwise be the case.

Section 1371 (k) (1) - (5) adds additional restrictions on the minimum level of pay for certain sorts of personnel. Whether or not this will imply any restriction on the performance of the industry depends on whether or not the market price for such labour is higher than or lower than this minimum price. Insofar as it is higher, of course, these regulations offer no binding constraint.

Insofar as one or more of the groups of employees mandatory to performance up to the minimum safety standards tend to engage in periodic strike action, one would expect costs to be higher, demands for air transport to be lower, and the equilibrium quantity lower than would otherwise be the case. Secondly, insofar as this industry tends to be regarded as an essential industry, one would expect government intervention, and/or, different bargaining characteristics to result. This would, for example, tend to encourage the use of rotating or single firm rather than industry-wide strikes. Insofar as the union(s) continually concentrated on one particular carrier, there would be a tendency for the Board to respond in some manner, depending upon its objectives and subject to the "need" clause regarding air mail transport, to the resultant (possibly asymmetric) costs which would emerge.

(f) Marketing Characteristics:

Some particularly interesting marketing characteristics within the air transport industry are tickets available through external agencies such as travel agents, and write-your-own-ticket campaigns.

While there is not a formalized restriction or encouragement of ticket sales through other than airport offices of the air lines, there might be a direct linkage to its encouragement or

discouragement. The sales of tickets through travel agencies, would tend, *ceteris paribus* to increase the demand for air transport by offering a passenger an entire trip plan, including, for example, arranged transport from an urban airport to a rural final destination. Additionally, since the ticket agent would be able to track down an optimal schedule in terms of minimum waiting time at airports, getting the information on the cheapest ways to arrange a trip, etc., and thereby minimize the time and inconvenience costs of a trip, demand would be expected to increase, *ceteris paribus*. Again, insofar as promotion is part of the duty of the CAB, this marketing strategy would be expected to gain approval even at a slightly higher cost (but some cost less than or equal to that which would just offset the gains from increased demand) than would otherwise be the case. Similarly, such schemes as allowing exogenous firms or individuals to write out their own tickets and mail or call in for confirmation (not incidentally reducing carrier costs) would tend to increase demand *ceteris paribus*. In both cases, however, in the absence of direct governmental encouragement of such techniques (and particularly in the case of travel agencies which obtain a fee for the service performed), there is reason to expect that the pattern of utilization might be different. Were the carriers certain that the cost of service would be lower and were the Board willing, a price competitive tactic of 'we sell our tickets exclusively and save passengers the costs of paying for a middle man' might be profitable. Insofar as previous wide-spread

usage of travel agents existed, this campaign might be seen as an attractive strategy, particularly in the absence of expected retaliation from other carriers. Further, since such a policy would not in effect, be price competition, the likelihood of direct retaliation would be reduced.

(g) Availability of Information:

The impact of information availability was discussed previously in terms of its impact on performance characteristics. Within this section, then, the question to be answered is, what legal restrictions are statutorily imposed on information about supply-side considerations to (i) the buyer or potential buyer; (ii) other carriers; and (iii) the Board.

Information available to the demand side of the market has already been touched upon in the section dealing with market structure, intervention, on the demand side⁴³.

There is no particular statement in the statutes governing the direct exchange of information by carriers. However, the carriers must give notice of any change in fares, which must then be approved by the Board⁴⁴, and carriers must file and keep for public inspection, tariffs between points served by itself and any other carrier when through services and rates have been set⁴⁵. This

insures that all carriers will know at least the prices charged by all other carriers. Additionally, since any interested party has a right to appeal a rate proposed by any carrier at the hearing, it is reasonably certain that carriers will be knowledgeable about the basic cost conditions of other carriers in the market. Similarly, they have the right to know which carriers have been granted access to which submarkets. Finally, insofar as joint fares must be jointly applied for, any amount of exchange could take place as regards information of substance on any carrier with which it has such joint fares. As such, unless the Board makes no requirement for economic input in re fares and entry, there will be a highly developed information network through which facts about all other carriers' operations can be obtained by any one carrier. This sort of interchange would be furthered insofar as the Board encourages and allows joint presentation for purposes of fare discussions and interchange of equipment, etc., discussions on how to reduce cost of fuel or some other matter of concern.

The last area of information flows is between the Board, and the carriers and buyers. There is no reason to expect the Board to be better informed than the carriers about the demand side as a result of statutory restrictions, since there are none. However, there is a guarantee of considerable information flow from the carriers. In the first place, there is the class of voluntary information regarding costs, etc., enhanced by the Board's ability to require factual

evidence for the estimates of economic market characteristics from the carriers. If any carrier wishes to make an application for entry into a particular market, or for a fare change, the Board could presumably gain such information as whether or not there is sufficient demand to justify such entry and whether or not costs are low enough to allow reduction of fares.

In addition to such 'voluntary' information, the Board has a statutory right to gain information of certain types from the carriers. Among these types of information are: (1) monthly, periodical or special reports on all questions the Board deems important⁴⁶; (2) the names of stockholders of more than 5% of the capital stock⁴⁷; and (3) information on management necessary to exercise and perform its function. Thus, the Board can, in fact, acquire from any of the carriers any information it deems necessary, subject only to possible restrictions from the courts on the grounds that since a particular methodology of regulation is improper, therefore the information requested by the Board should not be of its concern. Further, the board can provide information to the carriers and the public, if it chooses to release such statistical and accounting information about the carriers.

(h) Particular Objective Functions:

Other than the provisions that the carrier must be (1) fit,

willing and able to perform transport; (2) willing to accept all reasonable requests therefore; (3) no party to unfair competitive methods; and (4) have the proper sort of management in terms of being able to convince the Board that it is capable of continuing adequate performance, there are no direct restrictions on the carriers' objective functions. For example, there are no direct requirements that a carrier must be a profit maximizer, as opposed to a net revenue maximizer, as opposed to an output maximizer, etc. However, insofar as the Board regulates the results of such objective functions, carriers with certain objective functions may be more likely to survive within the industry in question.

A great deal of concern will be directed to the objective function of the Board and the implications for the various aspects of market structure, conduct and performance. The statutory limitations on the objective function of the Board are found in several sections of the Act. It has been noted that the Board must (1) encourage competition to the extent necessary for the development of civil aviation⁴⁸; (2) regulate to preserve the inherent advantage of each mode⁴⁹; (3) improve relations between carriers⁵⁰; (4) promote the civil aeronautics industry; (5) consider the need of each carrier in the allocation of mail revenue⁵¹; and (6) ensure that the public interest is enhanced by any potential change in fares; change in number of carriers serving a particular submarket, or the total

domestic trunk market; or change in pattern of fares, service, or number of firms. Each of these has been discussed previously. Regardless of the Board's true objective function, these goals must appear to be Board pursuits. The objective function, then, serves to distinguish the way in which the Board seeks to assure that these imperatives are met, while pursuing any other goals which it has in mind and in ways consistent with them. The manner in which these actions have been carried out in the past, and a determination of the objective function which appears to be consistent with the Board's action, will be discussed in the chapters 8 and 9.

(3) CONDUCT: DEMAND SIDE INTERVENTION

As mentioned in Chapter 4, there are assumed to be no major aspects of conduct of buyers which differentiate them from the atomistic, demand side, market conduct assumptions of normal micro theory. Therefore, we are solely concerned with the restrictions that the statutes impose on the response of these price-taking individual consumers in the manner in which they adjust to changes in the market, in terms of prices, quality, availability, and the like.

In particular, since it is the onus of the Board to concern itself with considerations of the public interest, the demand side considerations are the direct consideration of the Board. However,

insofar as any member of the public considers itself to have a particular interest in the decisions of the Board with respect to a particular item of business, they may present a brief to the hearing examiners. With respect to any submarket decision, such as a discontinuence of service or the adding of service to or from a community, wherein the local business groups, or other civic organizations have a particular set of preferences which they wish to collectively express, it is the responsibility of the Board to hear them. It is difficult, but necessary from the legal framework, to make the assumption that the Board is both a neutral observer, passing judgement over diverse desires (diverse not only within groups but between carriers and the public) and, concurrently, the guardian of the public interest. However, insofar as the buyers have not achieved a sufficiently large collectivity to induce changes in the patterns of demand, sufficient to insure that alterations in consumer responses are noticeable, the normal individual consumer-theoretic responses will be assumed. (This does not deny that the Board could in theory respond to the impact of, for example, the income effect of a higher price of air transport by selective subsidization, and, thereby, operate on the basis of income compensated demand curves. However, there is no statutory mechanism, or requirement, for such compensation of buyers).

(4) CONDUCT: SUPPLY SIDE INTERVENTION

As mentioned in Chapter 4, the particular areas in which regulatory intervention could occur with respect to supply side conduct are: (a) the principles and methods employed by the firm (or group of firms) in determining the price-output configuration, including the existence of discriminatory pricing, if any; (b) the product policy; (c) the sales promotion policy; (d) the means of coordination and cross-adaptation of sales, price and product policies, if any; (e) the level of R and D expenditures; and (f) the extent of predatory practices, if any.

(a) Pricing Policy:

The statutory regulation of rates can be divided into those regulations which deal with the carriers' duties with regard to the filing and maintaining of rates, and those regulations which deal with the Board's powers in respect of these rates.

The first groups of regulations include those providing that:

- (i) the provision of necessary and adequate facilities for mail carriage⁵²; (ii) carriers must file and keep for public inspections tariffs between points served by it and any other carrier when through rates and services have been established⁵³; (iii) carriers cannot

charge different fares from those stated in these tariffs, but are allowed to give free or reduced rates for certain individuals⁵⁴; (iv) notice must be given of changes of fares⁵⁵; (v) carriers must establish observe, and enforce just joint rates with equitable divisions of the returns⁵⁶; and (vi) carriers cannot give preference to particular individuals in any unjust discriminatory manner or to unreasonable prejudice or disadvantage.

The second category of regulations includes the duties and limits of the Board in regard to rate regulation. They include statutory obligations to air mail carriage, the "need" clause, which requires that rates be set subject to: (i) the condition that air carriers must provide for mail carriage only by providing necessary and adequate facilities and services for said transport; (ii) the standards respecting the character and quality of service; and (iii) the need of a carrier for compensation for the transportation of mail, sufficient with reasonable and prudent management to maintain such transport, subject to any conditions prescribed by the Secretary of Transport⁵⁷. A separate section deals with the power of the Board with respect to any individual or joint fare, or any classification affecting such rate or fare if it finds such fare to be unjust, unreasonable, unjustly discriminatory or prejudicial, to determine and prescribe the lawful rate or fare (or the maximum or minimum therefore) to be charged⁵⁸. The Board must take into account, among

other things, (i) the effect of such rate upon the movement of traffic, (ii) the need of the public interest in rates at the lowest cost consistent with furnishing adequate, efficient, transport; (iii) such quality standards as may be prescribed; (iv) the inherent advantage of transport by air craft; and (v) the need of each carrier for revenue sufficient to enable such carrier under honest and economical management to provide adequate and efficient service⁵⁹.

Whenever the Board is of the opinion that the divisions of joint rates are or will be unreasonable or unfair, the Board may prescribe the equitable division⁶⁰. The Board, upon determining it in the public interest, may establish through service and joint rates for interstate transport, providing only that the Board shall set just and reasonable maximum, minimum, or maximum and minimum rates, fares or charges⁶¹.

Within the U.S. regulatory framework, therefore, the Board establishes the going market price or prices, including the allowable type and degree of price discrimination, if any, subject to the following constraints: (i) any type or amount of price discrimination must either be justifiable in terms of [1] cost or [2] promotional tactics, (subject to a demonstration that this type of price discrimination will not result in an unreasonable degree of diversion of traffic between carriers); (ii) there must be some reasonable rate of return; and (iii) carriers should not use efficient movements of traffic to subsidize inefficient ones.

(b) Product Policy:

As was mentioned in Chapter 4, one potential point of Board intervention is in regard to product policy, including; (i) the type of plane used; (ii) the frequency of service; (iii) the provision of extras such as drinks, food, etc.; and (iv) the provision of ancillary services.

As previously noted, the type of carriage and the frequency of service is a right left solely to the carrier, although the Board, via pricing policy, can influence the choices of carriers. The degree of effective Board control via this mechanism will at least partly depend upon the shapes of carriers' cost functions, and will in particular be limited in the short run if carriers are operating on a declining marginal cost curve segment.

If the Board attempts, in the absence of the expressed statutory right, to regulate via pricing the type and number of aircraft in each market, it will not concurrently be able to regulate price at that level where efficiency (in the sense of $P = MC$) is achieved, except in rare circumstances where the two policies coincide. The provision of 'extras' can be regulated through the pricing mechanism to the extent that the Board may allow or disallow a particular expense in the determination of carrier operating costs. However insofar as a

particular carrier has lower costs than his competitors, and as long as carriers are required to charge the same fares, it would be rather difficult to do much about his provision of 'extras'. Again, it should be reiterated that there will typically exist a trade-off between price as an "economy" goal, and price as an instrument for the control of the remainder of the conduct variables⁶².

(c) Sales Promotion Policy:

For the profit maximizing firm, the level of expenditure on sales promotion will be that level which generates the maximum maximum firm profit. However, within the constraints of a regulated rate of return there could be highly different rates and types of advertising and other sales promotions. The Board, in approving rates, must decide which advertising and sales promotion expenses are "legitimate costs of an honest, economical, and prudent manager". Since it is the responsibility of the Board to promote the industry, one would expect to observe at least the unregulated level of sales promotion, including free, reduced-rate, and package fares. (In addition, of course, the absence of direct carrier price competition makes it more likely that non-price competition will take the guise of industry promotion policy).

(d) Coordination and Cross-Adaptation of Sales, Price, and
Product Policies

There is no direct regulation with regard to cross-adaptation of the sales and price policies. Certainly, however, such interrelations are within the Board's regulatory abilities under a variety of circumstances. For instance, insofar as the means of coordination and cross-adaptation of sales, price and product policies serves to enhance or create predatory policies, the Board has the power to disallow such action⁶³.

Further, carriers are required to notify and have approved any rate or fare changes, and the Board has power to investigate past, present, and future fares on its own initiative, so that any sales promotion, price and product interlocks will be subject to the scrutiny of the Board. As previously mentioned, the Board is constrained, *ceteris paribus*, to consider sales promotion a good thing. As such, sales promotions may be permitted which indirectly or directly affect product quality. The selling of tickets on a standby basis at a reduced rate, for instance, might generate increased load factors on some flights beyond the level which causes product quality to deteriorate, in turn affecting basic fares and promotions proposed by the carriers. Similarly, the removal of such promotions might tend to substantially alter rates of return which were previously

acceptable to those which are now unacceptably low. In order to now cut costs of operation carriers might find it necessary to reduce staffing or other extras in ways which implicitly lower product quality. These trade-offs would implicitly or explicitly have to be considered by the Board.

In regard to coordination external to the firm but internal to the market, one would again expect to find a significantly higher degree of coordination insofar as the Board encouraged joint presentations, to insure, for example, that there is minimal diversion of traffic; and because all hearings are public, carriers not participating have an equal access to information on the mechanism and expected gains of this strategy. As a purely protective measure, any promotion or product technique which appears profitable will rather rapidly be adopted by all carriers, or be disallowed.

(e) Research and Development (R and D)

The Secretary of Transportation is directly responsible for the rationalization of R and D expenditures within the aerospace industry⁶⁴. As previously mentioned, however, a substantial portion of the R and D within air transport has been expended outside the defined market, primarily by the government for the development of arms and defense work, not directly related, but ultimately applicable

to domestic air passenger carriage. There seems little prospect for the altering of the pattern, within the present regulatory framework, although this could change, were the Secretary, with the approval of Congress, to encourage R and D within the industry.

A second consideration centres about the introduction of new technology into the industry. Again, although the carriers theoretically have the ability to alter the technology at their will, the Board's power to control prices and entry gives it indirect control over the degree to which carriers will find it profitable to introduce new techniques. Permitting entry into a market or submarket, for example, might induce a present carrier to forego the introduction of larger aircraft appropriate given its initial market share. Similarly, insofar as other carriers can convince the Board that a new technique is merely traffic diverting, the Board may, via regulation in other submarkets, offset the potential profitability of such a move. Alternately, the appropriate pattern may be encouraged more directly by setting non-cost-based fares for different types of aircraft.

(f) Predatory Practices:

As mentioned in Chapter 2, one would expect to find a minimum of predatory practices internally, and a high degree toward outsiders,

within the quasi-cartelized association of air carriers. Certainly the Board has the power to deal with predatory practices⁶⁵. The manner in which the Board deals with other issues, and therefore the cartelization or joint decision-making which is allowed and encouraged between the carriers in the presentation of other issues to the Board, will likely affect the extent of such practices with which the Board has to deal.

THE STATUTORY FRAMEWORK: THE BOARD

In Chapter 5 it was argued that certain dimensions of the structure of a regulatory board will directly influence its conduct. These dimensions included: (1) the "job" of the regulatory board; (2) the makeup of the board, including (a) who chooses the board, (b) necessary qualifications for members, and (c) the number of board members; (3) the scope of the board, including (a) the duties of the board, (b) the scope and limitation on its mechanisms of action, (c) the methods of enforcement, and (d) the centre of concern of the board. These dimensions of structure can serve to help classify the "style" of regulatory interaction, and thereby to develop a set of performance goals which the board considers important. Within the context of the regulatory framework, certain pieces of the above structure are given, and will be outlined with respect to the CAB.

(1) THE JOB OF THE REGULATORY BOARD

While the Board is constrained by certain goals it must pursue⁶⁶, these goals are fairly broad in construction. It is clear that the CAB, while not 'pure', is more a regulatory body than administrative tribunal. There can be no change in "policy", other than that approved by Congress, and therefore without a change in the statutory framework, other than by the Board itself. As mentioned, and will be seen further in Chapter 8, the CAB has, within the broad guidelines of the declaration of policy, a great deal of leeway.

(2) THE MAKEUP OF THE BOARD

The five members of the CAB are appointed "by the President, by and with the advice and consent of the Senate, for terms of six years and subject to removal only for inefficiency, neglect of duty or malfeasance in office⁶⁷. Note more than three shall be of the same political party"⁶⁸. The President is instructed to give "due regard to their [members of the Board's] fitness for dispatch of the powers and duties vested in and imposed upon the Board by the Act"⁶⁹. From this, it is clear that the CAB fits into the small group category with potential political leanings, and possessing some degree of expertise. It should also be noted that while remaining a Board member, an individual may have no other occupation, nor any pecuniary interest in any civil aeronautics enterprise⁷⁰.

(3) SCOPE OF THE BOARD

(a) The duties of the Board are in general specified in the declaration of policy, and have been discussed elsewhere in this Chapter. Similarly, specific duties such as the considerations of need have generally been specified elsewhere.

(b) The scope of the mechanisms of action by the CAB are fairly broad. The Board may, with the force of law, issue orders for compliance⁷¹, may prescribe, within limits, such things as rates and practices⁷², issue certificates of public convenience and necessity (without which no mainline air carrier may operate), specify routes, etc. The Board, however, is constrained in that it must work with the context of the "free" market; that is, in essence, it cannot directly regulate carrier responses to prices established by the Board.

(c) The methods of enforcement of CAB rules and regulations are those of the judiciary, as is characteristic of quasi-judicial boards. The Board has the power to find fact, issue orders, take evidence and deposition, issue subpoenas, levy fines, and generally act as a court. Its findings are subject to appeal on matters of law; however, it is assumed to be an expert body with ability to determine fact (subject only to the availability of new evidence).

(4) CENTRE OF CONCERN OF THE BOARD

The statutory centre of the CAB's concerns is economic. While the declaration of policy⁷³ does stress regulation to assure, and the promotion of, safety in air commerce, the "safety functions" of the CAB were transferred to the National Transportation Safety Board (NTSB) with the formation of DOT.

More specifically, there is statutory concern with various dimensions of market action. There is, for example, concern that a sufficiently competitive structure be maintained; similarly there is concern with such performance variables as the cost of service. Title IV, however, the heart of the statutory framework, places a great deal of emphasis on the structural regulatory powers of the Board. The Board is therein given complete control over entry and exit, and authority to regulate mergers, interlocking directorates, and indirect control⁷⁴. (The section dealing with the rate control powers of the CAB appears under Title X, tellingly entitled "procedure").

FOOTNOTES

1. House of Commons Standing Committee on Transport and Communications Hearings, 29/1, 21:78 (29/1/73).
2. Baldwin, John R. The Regulatory Agency and the Public Corporation, (Cambridge, Mass.: Ballinger, 1975), p. 123.
3. During this period Air Canada's stage length varied between 493 miles (1968) and 613 miles (1975) while CP Air's varied between 769 miles (1968) and 1022 (1970). c.f., Dhruvarajan, P.S. and R.F. Harris, et. al. "A Productivity Study of the Canadian Airline Industry," Canadian Transport Commission Research Branch, Report No. 10-78-03. (Ottawa: March, 1978).
4. Ib id.
5. Rajani, S. "Comparison of the Growth of U.S. and Canadian Domestic Air Travel", Canadian Transport Commission Research Publication Report No. 58, (Ottawa, 1972).
6. Ib id., p. 21.
7. The Canadian data for 1950 to 1960 was not reported in a manner comparable with that of the later period.
8. The time periods are such as to generate roughly comparable per capita figures for the two countries.
9. Locklin, D. Philip, Economics of Transportation, 7th ed., (Homewood, Ill.: Irwin, 1972) pp. 288 and 393.
10. United States Code, Annotated, (U.S.C.A.), various sections and subsections.
11. Bain, Joe S. Industrial Organization, loc. cit., p. 7.
12. U.S.C.A., s. 1346.
13. U.S.C.A., s. 1349.
14. U.S.C.A., s. 1373 and S. 1324 (d), respectively.
15. U.S.C.A., s. 1374.

16. U. S. C. A., s. 1346.
17. U. S. C. A., s. 1653 (b) (3).
18. U. S. C. A., s. 1371 (a), (d) (1), (e) (1), (c) (6) and (g).
19. U. S. C. A., s. 1371 (h), s. 1378 (a) (1-5), (b), and s. 1379 (a) (1).
20. U. S. C. A., s. 1378.
21. U. S. C. A., s. 1302 (c), (d).
22. Defined to include the Post Office and Defense users.
23. Wilson, G. Some Unsettled Issues, op. cit., pp. 5-12 provides useful discussion of this matter and a proposed interpretation of "inherent advantage".
24. Bator, F.M. "The Anatomy of Market Failure", QJE, 72 (August, 1958), pp. 351-79.
25. Lipsey, R.G. and Kelvin Lancaster. "The General Theory of Second Best", REStud., 24 (1956-57) pp. 11-32.
26. Miller and Douglas, op. cit., propose that this is the real-world case.
27. In order to obtain precisely homogeneous units of output, one passenger-mile would have to consist of a passenger occupying a specific amount of space, subject to a given level of noise and vibration, a given time lag between the request for and the provision of service, and so on. It is to be expected that as the number of passengers increases, the marginal cost of that standardized vector of characteristics increases.
28. U. S. C. A., s. 1371 (e) (4).
29. Consider the Board's use of allowing entry to provide capacity for excess demand. The determination of points at which entry should be encouraged thus becomes dependent upon load factor (or an alternative standard) as an indicator that the minimum average cost curve has been achieved by the current set of carriers.
30. U. S. C. A., s. 1371 (j)
31. U. S. C. A., s. 1371 (g)
32. U. S. C. A., s. 1371 (h)

33. U.S.C.A., s. 1378 (a) (1-5)
34. U.S.C.A., s. 1378 (b)
35. Ib id.
36. U.S.C.A., s. 1379 (a) (1)
37. U.S.C.A., s. 1379 (b)
38. Although Miller and Douglas, op. cit. argue in favour of horizontal average cost curves, their findings are not irreconcilable with U-shaped schedules, particularly given that their observations are for an industry which has been both entry and price regulated and in which product homogeneity is lacking.
39. The Board might, of course, intervene under U.S.C.A. Section 1374 (b), which prohibits unfair price discrimination, or Section 1381, which prohibits unfair competition. (The former might be claimed, for example, were a carrier to offer 'free' drinks to passengers, thus subsidizing drinking passengers at the expense of non-drinkers).
40. c.f. Miller and Douglas, loc. cit.
41. c.f. "The Denver Service Case", 22 CAB 1178, (1955).
42. Jordan, op. cit., suggests that at any given instant there might well be precisely the same number of carriers in the industry, but that the average rate of turnover would be higher.
43. U.S.C.A., s. 1373 and s. 1324 (d); *supra*, p. 199.
44. U.S.C.A., s. 1373 (c).
45. U.S.C.A., s. 1373 (a).
46. U.S.C.A., s. 1377 (a), (b).
47. Ib id.
48. U.S.C.A., s. 1302.
49. U.S.C.A., s. 1303.
50. Ib id.
51. U.S.C.A., s. 1376 (b).
52. U.S.C.A., s. 1371 (e).

53. U. S. C. A., s. 1373 (a) .
54. U. S. C. A., s. 1373 (b) .
55. U. S. C. A., s. 1373 (c) .
56. U. S. C. A., s. 1374 (a) .
57. U. S. C. A., s. 1376 (a) , (b) .
58. U. S. C. A., s. 1482 (d) .
59. U. S. C. A., s. 1482 (e) .
60. U. S. C. A., s. 1482 (h) .
61. U. S. C. A., s. 1482 (i) .
62. Such a trade-off can be expected unless the optimal pricing policy happens to be average-cost pricing .
63. U. S. C. A., s. 1381.
64. U. S. C. A., s. 1303.
65. U. S. C. A., s. 1381.
66. U. S. C. A., s. 1307, including the encouragement, development, and regulation of air transport.
67. U. S. C. A., s. 1321 (a) (1-2) .
68. U. S. C. A., s. 1321 (a) (1) .
69. U. S. C. A., s. 1321 (b) .
70. Ibid. It is interesting to note that members are not prohibited from owning, for example, railroad stocks .
71. U. S. C. A., s. 1482 (c) .
72. U. S. C. A., s. 1482 (d) .
73. U. S. C. A., s. 1302 (d) .
74. Federal Aviation Act, 1958, op. cit., Title IV, *passim* .

CHAPTER SEVEN

THE LEGAL AND INSTITUTIONAL SETTING: CANADA

In the previous Chapter, statutory intervention in U.S. air transport was considered. It was concluded that in the U.S., the Civil Aeronautics Board is granted considerable power, by statute, over the structure and conduct of the air transport of passengers on domestic scheduled trunk operations.

This Chapter is concerned with the degree of intervention, and the extent of that intervention, granted by the Canadian statutes to the Canadian Transport Commission and the Ministry of Transport in the same market within Canada.

THE ACTORS

In the Canadian air transport regulatory setting, the two major agencies are the Canadian Transport Commission (CTC), and the Ministry of Transport (MOT). In addition to these two agencies, the role of the courts and of Parliament must be noted.

(1) THE CTC:

The CTC and its subsidiary body, the Air Transport Committee

(ATC) were created in their present form by the National Transportation Act, 1966-1967¹. Within the field of air transport regulation, the creation of the new CTC was more than merely an expansion of the previous Board of Transport Commissioners, which had not had the power to regulate air transport. Generally, the CTC is a court of record, consisting of not more than seventeen members, only three to five of whom sit on the ATC, however. The Commissioners are appointed by the Governor in Council, and the President and Vice-Presidents of the Commission are similarly appointed. At least one of the Vice-Presidents must be a barrister or advocate of at least ten years standing, and he is charged with superintending the work of the committees. In addition, one of the Vice-Presidents is charged with supervision of the programs of research and study which are, as will be discussed later, part of the function of the CTC.

The basic duties of the CTC are the enforcement of the provisions of the Railway Act, the Aeronautics Act and the Transport Act, only the latter two of which are particularly relevant to this work. In addition to the later specified powers under the Aeronautics Act, the CTC is expected to:

- (a) inquire and report to the Minister upon measures to assist in a sound development of the various modes of transport under Parliamentary jurisdiction;
- (b) undertake studies and research into the economic aspects of all modes of transport;

- (c) inquire into and report to the Minister on the relationship between the various modes and upon the measures that should be adopted in order to achieve coordination, development, regulation and control of the various modes;²

These duties, it should be noted, are similar to those imposed on DOT in the U.S. situation, particularly in respect to the achievement of coordinated development. While the statutory duty is thus delegated in Canada, as in the United States, to one of the two regulatory bodies, in the Canadian case it is to the day-to-day regulator rather than to the Ministry (or its counterpart) as is the case in the U.S.

In addition to the above mentioned duties, the CTC is expected to:

- (d) perform other duties with respect to a transport mode including administration of subsidies, regulation of rates, and regulation and licensing of modes;
- (e) inquire into and report to the Minister upon possible financial measures required for assistance to any mode;
- (f) establish general economic standards and criteria to be used in the determination of federal investment in equipment and facilities as between the various modes and within individual modes and in the determination of the desirable financial return therefrom;
- (g) inquire into and advise the government on the overall balance between expenditure programs of government departments or agencies for the provision of transport facilities and equipment in various modes of transport, and on measures to develop revenue from the use of transport facilities provided or operated by any government department or agency;³

In general then the CTC is responsible for, in addition to its direct regulatory powers under the various Acts, the development of the necessary data and the sufficient interpretation of that data, to allow the Ministry to make any policy decisions which it so desires with an understanding of its costs and implications.

In the case of the Canadian division of labour, the CTC then, emerges as the day-to-day regulator, the research arm for basic transport matters, and a main source for information for government decisions on transport-related matters. More will be said later with regard to the regulatory functions per se.

(2) THE MINISTER AND THE MINISTRY OF TRANSPORT

The Minister is obliged, under the terms of the National Transportation Act to:

- (a) supervise all matters connected with aeronautics;
- (b) undertake and to cooperate with persons undertaking research which in his opinion will promote the development of aeronautics;⁴

In addition to the research and promotional duties above, the Minister must:

- (c) prescribe aerial routes (that is, the Minister has the power to define the submarkets which, when aggregated across distance, provide the bases for the market);
- (d) investigate, examine and report on the operation and development of commercial air service;
- (e) draft and consider and prepare for approval...such regulations as may be considered for the control or operation of Aeronautics.⁵

Some of the relevant subjects for regulations are listed in 6(1):

- (i) licensing of pilots; (ii) registration of, certification of, and licensing of, aircraft; (iii) licensing, inspecting, and regulation of air-stations; (iv) conditions under which aircraft may be operated; (v) conditions under which goods and passengers may be transported; (vi) prohibition of navigation over prescribed areas.

From the above list it is clear that in addition to its other powers and duties, the MOT must provide for and supervise the facilities (such as airports) for the actual operations of the airways. That is, the MOT is responsible for the functions which are those of the FAA in the United States.

Unlike the FAA, however, the Ministry has substantial regulatory powers by the nature of being a ministry. The role of the Ministry is twofold: (i) as part of the cabinet, and in concert with

the remainder of the cabinet, the minister is responsible for the development of the basic policy and any changes therein with respect to each of the several modes of transport; and (ii) after the CTC has interpreted this policy into the day-to-day workings, the minister serves an appellate function so that any conflicts of interpretation can be resolved.

(3) PARLIAMENT

Naturally, any changes in the statute law must be approved by Parliament. Certainly the Minister would be responsible for, and be expected to defend, any change in policy under the Acts. In addition, there are permanent (standing) committees on transport in both the House of Commons and the Senate. As such, there is a regular review of the spending allotted to the various transport sectors.

(4) THE COURTS

As in the U.S. case, any matter of law is subject to judicial review. There have been instances where the courts have revoked orders of the CTC⁷, and there will undoubtedly be such instances again. In general, however, the courts have not entered the regulatory picture. This does not mean that the courts have no review powers. These powers are traditionally limited to findings of law (rather than fact) and are defined by the Federal Courts Act.

(5) AIR CANADA

While not a regulator in the traditional sense of the word, the crown corporation, as a "chosen instrument" can have the effect of altering the performance of the other carriers in the market. As was noted in the preceeding Chapter, the actions of airlines in small numbers of oligopolies are dependent upon the actual or expected reactions of competitors. If, for example, a company which is a profit maximizer is faced with (say) a crown corporation which is, for policy reasons, pursuing some goal other than profit maximization, then the former must be prepared to take into account the expected actions of the crown corporation, not those of some hypothetical profit maximizer. Suppose that a crown corporation is instructed to 'increase service to a specified minimum level' in a particular market where, given the present traffic, there is insufficient demand to ensure a profitable operation for both carriers. In this situation, it is clear that the crown carrier will, as long as the policy is in operation and the government stands willing to finance the resultant losses, be the one to continue to operate. (The profit-seeking carrier might presumably shift its expenditures toward lobbying for a change in policy!) Clearly the limits of the crown corporation's actions and the policies under which Air Canada is expected to operate will alter the type of competition, the performance of the carriers, and perhaps the performance of the purchasers of transport in the

Canadian market. Air Canada is a creation of the Air Canada Act⁶, and is, presently, a corporation wholly owned by the Canadian National Railroad. (There is very little equity, and none outstanding. Most of its financing is, therefore, debt, a fact which will become significant later when the performance of the carriers is discussed).

CANADIAN STATUTE INTERVENTION

The reader is assumed to be familiar with the structure of Parliament, the role of the Ministry of Transport and its Minister, and the basic structure of the civil service. While the CTC is a commission created independently by Parliament under the National Transportation Act, it serves to enforce and interpret, on a day-to-day basis, the policies laid down by the Minister. The statute intervention which is particularly relevant in this case, consists of the National Transportation Act and the Aeronautics Act. These Acts will be considered in light of the structure, conduct, performance breakdowns, and will be codified on that basis.

(1) STRUCTURE: DEMAND SIDE

Structural intervention can occur on either the demand or the supply side of the air transport market. On the demand side, the

areas of potential intervention include: (a) the degree of potential entry into the market; (b) the income distribution of the buyers of transport; (c) the effective or potential degree of information dissemination in regard to quality or cost of service; (d) the buyers taste for or fear of the product; (e) the product differentiation in the minds of the consumer; and (f) any other variable relevant in the determination of the derived demand for air transport including: (i) the availability of substitutes; (ii) the elasticity of supply of compliments; (iii) the elasticity of demand for the "goal" of the trip; and (iv) the percentage or relative importance of the cost of air travel to the total cost of the trip.

(a) There is, as in the U.S., very little intervention by the regulatory agencies on the demand side of the market. The buyers of air transport are generally viewed as atomistic. Insofar as a genuine group interest is present, buyers are allowed to form charter groups and purchase transport at cheaper rates. As such, the CTC tends, as in the U.S. case with the CAB, to ignore the demand side of the market, regulating only the supply side, and that in the "public interest". As such, there is no direct regulation of entry on the demand side of the air transport market. Expansion of airport facilities from the late nineteen-fifties onward did encourage buyer entry. Similarly, subsidizing of regional carriage to insure "feeder" service, and the use of the chosen instrument, Air Canada, to insure

service to the Atlantic and other parts of Canada both encourage ease of entry. However, there was no direct intervention, other than for direct security precautions, in the entry of any buyer into the market.

(b) The importance of the level of income in the demand for air travel has been explicitly noticed by the CTC research staff⁸. However, the CTC has not the power to alter the income distribution of the Canadian people for the purpose of altering the demand for air travel. Certainly, however, the Minister of Transport, through the Cabinet, can encourage alterations of the income distribution which would contribute to the expansion of transport either as a whole or by individual means⁹.

(c) Information dissemination in air transport can be fostered by the industry in the form of advertising, or by the regulatory bodies, directly or indirectly. There is direct control by the CTC of any false or misleading advertising¹⁰, insofar as such advertising would be contrary to Section 3 of the National Transportation Act, that is, insofar as it would be deleterious to competition. Indirect control, through disallowance of rates as being based on costs inflated by unreasonable advertising expenses, also exists. The Parliament has, over Air Canada at least, some degree of control over the amount and style of advertising, insofar as it can refuse to cover any outstanding costs which it sees as unreasonable¹¹.

(d) There is, given the abundance of concern with safety in transport, a large amount of legislation directed at quelling buyers' fear of the product. The Minister and his department are generally responsible for the provision of safety in air transport. The relevant statutory provisions deal with prescription of routes¹², licensing of aircraft¹³, the licensing of pilots¹⁴, the inspection of aerodromes and aircraft¹⁵, the specification of the conditions under which transport of persons and property may occur¹⁶, and the areas and times during which flights will not be allowed¹⁷.

More directly, in order to deal with potentially hazardous situations, the Minister has the power to restrict the maximum number of flying hours for pilots¹⁸, the placement and height of buildings near airports¹⁹, and inspection of aircraft manufacturing facilities to allow for a determination of the air-worthiness of the planes manufactured in such plants²⁰. Finally, the Minister has direct responsibility for dealing with actual accidents²¹, as well as insuring that any carrier, person, plane or situation is not potentially hazardous.

The only direct intervention by the CTC in this area is the specification of minimum insurance provisions. While this does not directly alter the fear of the product, the knowledge that the air carriers can and will be required to insure the cargo against potential damage is possibly reassuring.

Again, insofar as the CTC and Parliament are able to influence the level of advertising, they have control over the degree to which carriers can influence directly the preference of individuals for one form or carriage, or one carrier over another. Unless such an advertisement is injurious to competition, however, the only control over it is the indirect control granted in the power to refuse to allow a given rate or tariff.

(e) There is no reason why the CTC could not, if it so desired, add a rider to any licence specifying that a certain class of carriage will or will not be operated. This has not generally been done; however, unlike the case in the United States, Canadian carriers do not have exclusive jurisdiction over equipment selection and usage. Indirect control potentially exists, as in most cases, through the rate approval/disapproval powers. The CTC also has power over scheduling²², and can thus theoretically determine the exact mix of products to be offered by any carrier or group of carriers. In fact, there tends to be a fairly common North American pattern of service.

(f) Finally, consumer demand will differ depending on those other factors which are important in the construction of a derived demand. These include the availability of substitute modes of travel, the elasticity of supply of such complementary goods and service as

lodging, meals and entertainment at the other end of the trip, and the elasticity of the demand for the final goal or purpose of the trip. The CTC does have power over the availability of substitute modes of travel, as well as the rates which are charged for competitive service. As a result of Ministerial policy, there is a concomitant level of service which the other modes are expected to offer to passengers wishing to purchase inter-city or mainline transport in Canada. There is, at present, quite serious concern, for example, over the optimal provision of transcontinental railroad passenger service. The direct involvement of the CTC, albeit through the Railway Committee, and the unified research staff will theoretically serve to insure that there is potentially a strong degree of intermodal intervention.

It is not clear that the CTC or the Minister generally have any real control over the elasticity of supply of complements or the elasticity of demand for the trip in question. It is certainly the case that MOT has direct control over the provision of such on-line complements as airport facilities, and by encouraging the construction of more and more modern airports is therefore likely to have some control over the demand for air travel.

Finally, insofar as air travel is cheap relative to the total cost of the trip, there will tend to be a larger demand for air

travel. Thus, insofar as CTC allows only those fare increases which it considers mandatory, one would expect to find a higher demand, *ceteris paribus*, than were it to allow all increases in all circumstances.

In summary, then, there is some potential intervention on the structure of the demand side of the air transport market. However, since it is assumed that buyers within the domestic trunk or mainline market tend to be, and be viewed as, atomistic, there is very little direct intervention encouraged by the Acts.

(2) STRUCTURE: SUPPLY SIDE

As has been previously mentioned, intervention with respect to the structure of the suppliers of air transport is much more likely and much more common in practice, and could potentially occur within the following dimensions: (a) the degree and ease of entry/exit into or from the market including the nature of any barriers to entry/exit; (b) the seller concentration resulting from the above mentioned entry/exit situation and the patterns of competition which develop among those sellers in the market at any given time; (c) the existence of interlocking directorates and/or other interest groups within air and other forms of passenger transport; (d) the degree of product differentiation offered by the sellers, including quality differences;

(3) any unique factor market consideration; (f) peculiar marketing techniques; (g) the availability of information about the competitors in the market, and (h) organizational characteristics resulting from the particular objective functions of the carriers.

(a) Entry and Exit

One of the prime responsibilities of the CTC and the Minister is the control of entry and exit into the market and along particular routes within the air transport market. In general, there are two ways to enter a market, that is, to start a concern or to purchase, merge with, or in any other way acquire control over a going concern. With the basic exception of Air Canada²³, the CTC has the power and responsibility for granting licences, subject to appeal to the Minister²⁴. Under the provisions of the Aeronautics Act and the National Transportation Act, the CTC has the power to issue such licences to any person who, in the opinion of the CTC, will operate in the public interest, and given that such air service will be required in the future by the public convenience. The Commission similarly has the power to cancel or suspend these licences²⁵. Finally, there can be no operations of air service without such a licence. Therefore, new entry is completely controlled at the initial stages by the CTC. As mentioned above, there is a provision for appeal to the Minister, but there is no direct statement as to what the Minister ought to

consider in regards to such an appeal. Clearly, if the Minister felt that some policy action would be furthered by allowing the applicant to have (or not have) such a licence, or by amending any condition of the licence, he has the power to do so.

Entry by merger is similarly controlled by the CTC. In general, merger will be allowed if it is consistent with public convenience, subject to the caveat that the Commission (CTC) may disallow any merger which is in any way prejudicial to the public interest, including the restriction of competition²⁶. It is, as noted in the Act, not the duty of the CTC to replace the actions of the Combines Investigation Director, since, in any relevant case, he is to be given notice by the CTC. However, the CTC has the power to grant a licence to any newly merged unit or to remove an existing licence from a firm which merges with another, acquires or is acquired by another firm, directly or indirectly. Additionally, any such proposed action as merger, acquisition, purchase, or consolidation must be reported to the CTC so that it can alter the licence, suspend the licence, grant a new licence or, in the extreme, refuse to allow the merger, acquisition, purchase, consolidation, lease or other direct or indirect action.

Thus, potentially, the CTC in concert with the Minister has complete control over entry and exit. A firm which does not choose to

operate a section of its authorized routing may find its licence for that section or other sections removed, so that there is potentially complete control over who will provide what service, with the aforementioned exception that there will be a licence automatically provided to Air Canada.

In summary, a licence will be provided if the applicant is fit, willing, and able to provide such transport (as determined by the Ministry of Transport), and if such operation is generally held to be required by the present and future public convenience and necessity. This clearly serves to erect an absolute sine qua non for entry. As mentioned in Chapter 6, there is some question about the nature and extent of any "natural" barriers to entry. One of the particular problems of the Canadian case is that while high-frequency operations can be justified across what is referred to as the transcontinental route--that is, Vancouver to Montreal via Toronto--it is not clear that this level of operation is economically justifiable in other areas, such as from the Atlantic provinces to Montreal and/or Toronto. Also, the service to such points as Calgary, Edmonton, and Winnipeg might, for maximum profit, be less regular than is presently the case. Thus one of the conditions for entry into a particular market might be that one is willing to and will provide service in other areas not necessarily profitable. This form of extension of service is not really possible under the U.S. regulatory set-up and Air Canada as the

chosen instrument makes the most noteworthy and obvious difference between the two regulatory structures. These inherent differences having been noted, it still remains to consider whether the Canadian regulatory authorities, like their U.S. counterparts, are bound by any legislative conception of public interest, and if so, the extent to which this would be expected to influence the entry/exit condition.

Section 3 of the National Transportation Act lists the goals of the Act, including such desirable ends as,

an economic, efficient, and adequate transportation system making the best use of all available modes of transport at the lowest total cost...²⁷

The implications of this directive for entry might, by an economist, be interpreted as follows: As in the case of the U.S. regulatory situation, the term "economic" is assumed to refer to the lowest possible average cost curve, given that some set of ranking is made for determining which is "lowest" in all modes. In the U.S. case, there is no problem determining the "lowest" average cost curve, because the appropriate model is partial. That is, the other modes of transport, being regulated by other agencies not within the purview of the U.S. act, are assumed to have a given behavioural and cost pattern. In the Canadian case, each mode is assumed part of an overall transport system which in the aggregated should generate the lowest average cost in terms of some (unspecified) general unit of

"transport" of some (unspecified) general cargo over some (unspecified) distance or time or weight unit. Were it feasible to define such a cost curve, one would presumably then determine which air service would achieve that cost schedule. Not only is this impractical in any meaningful way, but it is highly unlikely that Canadians would be interested in spending the money or time necessary to find such curves.

Naturally, the lowest cost service would be no service at all. However, the further requirement that the service be adequate, clearly insures that this is not the meaning of the legislation! In any case, it is assumed that, in the absence of evidence to the contrary, Parliament wanted the regulatory authorities to attempt to minimize the cost of air transport subject to a consideration of the effect of any such cost minimization on the cost of supplying other modes of transport. Thus, *ceteris paribus*, one would expect to find some larger degree of concern with the effect of regulatory decisions in air travel on the cost of, for example, rail, or on the provision of same. As such, air carriers which might be "uneconomic" in the sense of generating slightly higher cost curves than other airlines, might be allowed to enter because they would be willing to provide service which would otherwise have to be provided at higher cost by other modes. Clearly, for example, one might expect to find higher subsidies in (say) northern air service than might be the case were

Canada to build highways which would in fact cost the citizenry far more than the air service²⁸.

There is a clear question as to what is adequate service. Again, there must be a slightly different interpretation of the term "adequate" in that a sufficient amount of air service, as mentioned above, depends on the existence and the quality of other modes of transport available to the residents. As such, any determination to allow or disallow entry or exit would be altered by the existence of other forms of transport. Presumably, the term "efficient" is assumed to be the operation of the air network such as to provide allocative efficiency where price equals marginal cost. As pointed out in Chapter 6, in the case of pure competition, these points will be coincident. Were this not the case, the regulatory board ought, in consideration of entry/exit questions, to be concerned with such issues as:

(i) the number of flights which will provide the maximum load factor possible without causing a decrease in the quality of service to such an extent as to cause the average cost of providing one uniform unit of transport to rise;

(ii) the number of carriers who ought to provide this service, and who they are to be;

(iii) the implications of any change in the service pattern in terms of the service of the other modes;

(iv) and the cheapest possible way to provide the minimally acceptable quality of service.

In addition to this goal, there is the suggestion that this goal will be achieved only insofar as this regulation:

(v) does not limit the ability of any mode to compete freely with other modes;

(vi) insures that each mode bears a "fair" share of the economic costs which are incurred by the public in order to provide this service; and

(vii) provides compensation for the provision of service which is imposed on the carrier.

The latter two regulatory constraints are aimed clearly at the pricing of the service. However, it would certainly alter the number of actual and potential entrants, were the CTC to, for example, refuse to allow compensation for imposed duty service above that which the carrier could generate and, further, were it to impose such traffic on

all air carriers. Similarly, the degree to which the carriers are forced through pricing mechanisms to recover the costs of publicly provided services will be a pricing phenomenon in the main. Generally however, as prices are higher than they would otherwise have been, there will be a slower traffic growth over time, one would expect. The encouragement of competition, particularly between modes, does imply that in the absence of other constraints, there is an impetus for entry insofar as there must be a carrier of each mode in the market in order to so compete.

(b) Seller Concentration

Seller concentration is a measure of the degree to which a single or few carriers have control over the market. If there are, for example, only three or four firms controlling 75 or 80 percent of the market, the industry would be said to be heavily concentrated. Clearly, air transport is a concentrated market. In Canada, the exact degree of seller concentration in the domestic mainline market is a matter of public policy; in this case, Ministerial order. Under the statutes, the CTC is empowered, through its ability to licence, to enforce any increase or decrease in the number of flights, type of planes, and service to any city or set of cities, determine the share of the market to any air carrier. It is a matter of policy that Air Canada will serve 75 percent of the domestic market, at a minimum.

There is only one other mainline carrier, CP Air, and it is, obviously, allowed to serve 25 percent, at a maximum. The exact definition of the market, a matter of some concern, is attached to CP Air's licence, and refers to a share of the available seat-miles²⁹. Thus seller concentration is, in terms of the ASM's, defined by policy. This does not mean that there must be quite such rigid percentages in terms of other concentration measures, of course. The percentage of CP Air's revenue passenger-miles (RPMs) to total RPMs could be higher or lower than 25 percent as the load factor of CP Air changed relative to that of Air Canada. Similarly, percent of total sales, transcontinental sales, etc. could alter. However, a much smaller area of variation would be likely than might be the case given, for example, an unregulated duopoly.

The degree of seller concentration has been declining over time in Canada, again as a matter of policy. The original intentions for Air Canada, that is as a national air carrier which will guarantee that all major parts of the country will be served at "reasonable" rates, continue as policy goals of the present service³⁰. The extension of CP Air service, that is the decrease in seller concentration, was allowed only after a study by S. Wheatcroft convinced the government that it was possible to allow increased service by CP Air in the profitable transcontinental service without reducing Air Canada's cross-subsidizational abilities to such an

extent as to render Air Canada incapable of performing its chosen instrument duties³¹. It has generally been considered that any change in the allowable service of the two carriers which may alter the basic shares of the market will be a matter of policy subject to the discretion of the cabinet or the Governor in Council and enforced through the ACT of the CTC.

This regulatory constraint clearly fosters a certain pattern of competition between the two major carriers. Where the market is explicitly cartelized, certain sorts of tacit agreements are not necessary. It may not be, for example, in Air Canada's best interest to pursue an extension of the number of flights into or out of a particular city in order to gain a larger share of that market, since as Air Canada extends such service, it extends the number of flights which can be offered by CP Air, in the total market. That is, since there is a guarantee that by extending its service, Air Canada will face potential increases in competitive flights in the most lucrative portion of the market, Air Canada must choose carefully where it wishes to request such service extension. Notice also that since any such service extension must be approved, it is unlikely that Air Canada and CP Air will be driven to operate at break-even load factors as a non-price competitive technique, as is possible in the U.S.³². Similarly, any extension of service through increased overall carrier size will almost certainly bring a response from CP Air to maintain the 25 percent market share.

(c) Interlocking Directorates and Other Close Relationships

As previously mentioned, the National Transportation Act gives the CTC the power to disallow any potential acquisition, either direct or indirect of any other transport business by any carrier (rail, water, pipeline or air) and requires notice of any such potential interaction³³. Thus it is expected that any change in ownership will be noted by the CTC. Further, the Commission has the instruction that it shall give such public or other notice as it wishes including notice to the Director of the Combines Investigation Act³⁴, in order to inform any person who might be affected by such change in ownership. This power theoretically allows the Commission to allow or disallow any close relationships which it feels would be detrimental to the development of Canadian air transport consistent with the policies of the present government. The CTC does not have any direct control over interlocking relationships based on "management skills" rather than ownership. It could be argued, however, that Sections 27(1), (2) and (3) apply to such relationships under the clause which deals with indirect extensions by methods other than purchase, lease, or merger. It is not clear, however, that upon appeal such application of the relevant clauses would be supported. Further, the abovementioned powers clearly apply only to extension of relationships from carriers to other carriers or to principally transport-offering companies. The inverse of this clause, whereby the CTC may disallow

the acquisition of an interest in any carrier by merger, consolidation, lease or other means³⁵, would be of more importance were it not for the extreme unlikelihood a significant change in ownership of CP Air. Ultimately, however, the CTC would have the power, through revocation and amendment of licence, to enforce against any close relationship which would be demonstrably against the public interest, however difficult it might be to demonstrate conclusively that such a relationship would in fact be detrimental.

(d) Quality and Other Forms of Product Differentiation

The major forms of product differentiation which one might expect to be controlled would be: (i) the frequency and timing of flights; (ii) service differentiation, including such issues as the number of stewards and/or stewardesses per passenger, the quality of meals, and the availability of in-flight entertainment; (iii) changes in the safety or comfort of passengers through the introduction of new planes or the maintenance of old fleets; (iv) the distinction of classes of service; and (v) the offering of such conveniences as reservations and advance bookings at zero charge.

One of the major differences in power between the CTC and the CAB is that the former has the power to regulate the frequency and timing of flights. As noted in Chapter 6, the absence of this power

made it necessary for the CAB to allow intercarrier 'discussions' aimed at the reduction of the number of flights, in order to generate sufficiently high load factors to allow carriers to make a "reasonable" rate of return. Were load factors on Canadian routes to fall below profitable levels, the CTC would have the power to order a reduction in the number of flights. Similarly, were load factors to increase an unreasonably high level, the CTC might allow CP Air to extend its flights, if it were not already serving its maximum allowable number of seat-miles. Herein lies a potentially tricky issue, rather opposite of the U.S. case, wherein the CAB, by virtue of its statutory make-up, could easily solve the problem, but the CTC would have to wait for changes from the policy makers. That is, were Air Canada to refuse to extend the number of flights offered, the CTC could not, assuming the 25% maximum is already in operation, allow CP Air to further extend its share of the market. However, in such a case, it is quite clear that the Minister would be concerned, as would Parliament, particularly if such a situation were to continue over a reasonable length of time, and Parliament has, in the past, demonstrated concern when the public carrier has operated at what might be termed excessive load factors³⁶. As such, were such an issue to become of major importance to the Canadian travelling public, it would be expected that the policy would be changed to insure such a dilemma would not be a long-run phenomenon, if changes could not be indirectly brought about in the national carrier's policy.

The number of stewards, stewardesses, the quality and quantity of meals, and the provision of in-flight entertainment have been matters of concern to the members of Parliament in the recent past³⁷. As regards matters which increase the cost of and thus the prices of air transport, the CTC is at least indirectly concerned. Were Air Canada to request increases in tolls resulting from an unreasonably "padded" increase in in-flight labour costs, it would be likely that the CTC would refuse the request. It would certainly have the power to do so³⁸. However, such forms of non-price competition are not directly controlled. (The quality of meals on Air Canada flights, for instance, appears to be a regular matter of concern³⁹).

Safety, as previously mentioned, is the direct concern of the Ministry. However, the introduction of new planes is controlled by the CTC and thus the use of such a technique as a non-price competitive mechanism is potentially controlled. Thus, these aspects of product differentiation are theoretically regulated.

The coach and first class distinctions are potentially of major importance as a means of product differentiation. Since the CTC has the power to regulate the fare structure⁴⁰, and insures that the two services are priced such that first class service costs a fixed multiple of coach service (typically one and one half times coach fare⁴¹), it could be argued that this is not really a viable area

for quality differentiation. On the other hand, the fact that two classes of service are currently available where only one (first class) was once offered suggests that at least at some time in the past, there was some attempt made at such quality differentiation. The division of the plane into any number of first class versus coach seats is theoretically under the control of the CTC⁴²; but were one of the carriers to approach the CTC with a request to change the percentage upwards (because statistics showed a continual overflow from first class on an otherwise half-empty flight), or downwards (because of an overflow into first class from coach sections), it is unlikely that the Commission would stand in the way of such a change.

The provision of reservations is assumed to be part of a standard service package; if a person is willing to fly stand-by he may expect to do so at a reduced rate; similarly, if a person is willing to make reservations a long time ahead, he may expect to do so at a lower rate. The offering of such reservations without charge, and the allowing of cancellation of such reservations also without charge have, in the past, caused some problems in the airline operations of both Canada and the United States. The problem of the so-called "no-shows" and the problem of over-booked flights are the two extremes which result from offering such a service "free"⁴³. Clearly, if the airline only reserves as many places on a given flight as there are seats, then the airplane will never operate at capacity,

requiring more planes and more flights than would be necessary to generate the given amount of business; i.e. there would be higher costs per passenger-mile and per passenger, unless everyone who reserves shows up or cancels and his place is re-assigned.

Alternately, if too many places are sold, there are more bodies than space and the reservation turns out to be no reservation at all. This problem, like that of lost luggage and other such service problems has a long history of public concern⁴⁴. The fact that the airlines within the regulated sectors continue to operate such reservation schemes, implies that the net cost of so doing is either less than that of not offering such a service, or that the profit is greater. If the airlines were to attempt to charge for the reservation service, such toll would have to be approved by the Commission. Since cheaper fares are granted, however, for reservation free youth and senior citizen travel, it is unlikely that the Commission would favour increasing the charges for this service alone.

(e) Unique Factor Market Considerations

Of particular interest in the air transport industry are such factor market conditions as: (i) the regulation of vertical integration; (ii) the hiring of particular types of trained and highly skilled personnel; and (iii) any unique bargaining or negotiation mechanisms which alter the cost of service provision.

As previously mentioned, the CTC is expected to outline the rules which govern merger, lease, acquisition, or any other form of control of the airlines from other transport, transport related industries, or other industries for that matter⁴⁵. Thus any change from the present situation must be approved by the CTC. Certainly the fact that the CP system and the CN system as a whole are engaged in such services as hotel operations would make the provision of packages much more profitable, *ceteris paribus*. The degree to which "packaging" will be allowed, and the extent to which such packages will reduce rates, at least in terms of the air fare portion, would be a matter of concern for the CTC. Similarly, were there any attempt by the airlines, or by the larger companies to involve themselves in air transport related operations, the CTC would be involved. Finally, any change in the "relationship" of the internal parts of CP Air or Canadian National would be of concern to the CTC, particularly in respect of any undue restriction of competition.

Certainly the business of providing air transport requires the combined operation of some highly skilled personnel, including such individuals as pilots and controllers. Thus, any regulation of the number of flights will be expected to alter the number of pilots hired, and the number of controllers needed in the towers, and will therefore influence the total labour costs. More importantly, government policy toward such issues as the linguistic background, the

number of and specification of which language(s) will be used in air-to-air, air-to-ground and ground-to-air communications, can have drastic impact on the operations of the aircraft, the actual safety of air travel and the travelers' view of his safety⁴⁶. The development of such policies will generally be at the Cabinet level, will be implicitly supported by Parliament, and must be put into effect by the staff of the MOT and the CTC, since the actions of and response by these trained personnel can clearly have significant impact on the present and future development of the Canadian air travel scene.

Finally, any shut-down of one portion of the air travel work force will close down the entire operation, at least within a relatively short time. As such, as the importance of air travel to other modes grows, inconvenience so generated also grows, and the more likely the government is to intervene. This intervention is probably less likely in Canada than in the U.S., for several reasons. One of these reasons is the existence of rail travel, at least on the transcontinental routes, as a sometime alternative to air travel⁴⁷. Another is that the east-west settlement pattern in Canada is such that much of the Canadian population could be served by relatively short train, bus or auto drives to locations south of the border, by air travel across the U.S., and then by another short bus or auto or rail trip to the ultimate destination in Canada. Also, for perhaps not unrelated reasons, there is the relatively more common experience

of usage by Canadian workers of rotating strikes which, while causing inconvenience to and pressure from passengers, do not debilitate the airlines to such an extent as to totally shut down the air networks and justify full scale government intervention. While the government as a whole has power to intervene in such disputes, the CTC and MOT lack the power to direct such intervention.

(f) Peculiar Marketing Characteristics and Techniques

As in the U.S., there are significant numbers of travel agents who will put together an origin-destination ticket for an individual, including making the airplane reservations at apparently zero price. This implies that they must either be sold the tickets at a lower price than ordinary citizens, or (as is the case) be paid a commission for the sale in which they act as agent⁴⁸. Insofar as the rate or toll for traffic charged is a concern of the CTC, it has indirect control over the commission levels. If, for example, the airlines were to give the agents 5% commission when other modes were selling their tickets with a 2% commission, such sales might be held to be acts which are unfair to the non-air travel modes, and thus illegal⁴⁹. The extent to which travel agents ought in general to be utilized is a concern of the CTC insofar as it is concerned with the development of the transport network in general and the air travel business in particular⁵⁰. Finally, it would undoubtedly concern the

CTC were one air carrier to provide travel agents with a significantly higher commission than the other mainline carrier, on the grounds that such practice was unfair and would hinder the interchange of commodities within Canada⁵¹.

(g) Availability of Information

The concern of the regulatory bodies with respect to the structural aspects of information dissemination on the supply side of the market includes such issues as: (i) the availability of information about the sellers' policies to the buyers or potential buyers; (ii) the availability of information about the other sellers and their policies to a given seller; and (iii) the information about sellers' policies available to the regulatory bodies, in order that it might effectively perform its functions.

The first consideration, information provided to the buyer, has been dealt with in the section dealing with the demand side of the market.

The CTC is not under any direct statutory obligation in regard to information exchange. Certainly any violation of the Combines Investigation Act would remain a violation and were the CTC to discover same, it would be expected to report such violation to the

Director. In general, however, in regard to any action which involves any order or regulation of the Commission, it must be published in the Canada Gazette, allowing concerned carriers a chance to appeal any change⁵². It is also the case that any complaint involving the actions of the suppliers must be heard in open court⁵³. are some particular upcoming actions whereunder the CTC must give notice. In particular, the CTC must give notice when any carrier within any major mode proposes to acquire any other business or person whose principal business is transportation⁵⁴ and the CTC may, as it holds convenient, inform and request the evidence of any third party which it feels may provide it with valuable information⁵⁵.

In addition, under Rule 320 of the CTC, the Commission states that it may give notice to whomsoever it feels it wishes, of any application which has been made to it. There are no other general mechanisms for providing information about the policies of carriers to second parties, except upon complaint by either the carriers, some interested third party, or the Commission itself.

Since the Commission may act upon its own to lay an action, however, any statutory claim to information from the carriers by the CTC puts the CTC in the position whereby it can, if it desires, "inform" the other carrier, by acting on an action and calling the other carrier as an interested party. Since the CTC has the power of

a court in the obtaining of evidence⁵⁶, it can, as it suggests it will do under Rule 430, request any information in regard to any formal proceeding which it desires. Finally, under the Aeronautics Act, the Commission is empowered to make regulations regarding the (i) forms of accounts and records kept by carriers and their access thereto⁵⁷; (ii) the carrier's "assets, liabilities, revenues, capitalization, expenditures, equipment, traffic, employees and any other matter to which this Part applies relating to the operation of commercial air services"⁵⁸; and (iii) necessary information about licence applicants in regard to their financial position, relation to other common carriers, proposed tariffs and routes, and other relevant issues⁵⁹. In general, then, the CTC has, at least theoretically, the power to obtain all information which it feels might be necessary for the rendering of any opinion or to carry out its duties. Needless to say, however, unless the CTC is aware of any proposed actions or of any past actions on the carrier's parts, it can not request any enlightening information.

(h) Particular Objective Functions

Section 3 of the National Transportation Act states:

It is hereby declared that an economic, efficient and adequate transportation system...is essential...and that these objectives are most likely to be achieved when all modes of transport are able to compete under conditions ensuring that

having due regard to national policy and to legal and constitutional requirements

(a) regulation of all modes of transport will not be of such nature as to restrict the ability of any mode of transport to compete freely with any other modes...⁶⁰

There is clearly an assumption that the carriers are expected to want to "compete". It is nowhere specified, as should hardly be a surprise, what the meaning of the term "compete" is, particularly on the intramodal level where there are only two carriers, one private and one public. Insofar as this is taken to imply profit maximizing firms, certain implications could be drawn. Certainly, since CP Air is restrained as a matter of policy in the share of the market which it may serve, and since its fares are subject to regulation, one would expect a totally different series of actions than were it free to increase its market share at will. The actual performance which will result from this set-up is hypothesized to depend on the interpretation which the CTC puts on the term compete, as well as the interpretations of the Minister and of Air Canada, plus the response of the objective function of the Air Canada executive, in terms of balancing any profit-seeking activities against the obligation of serving unprofitable sectors of the country. Clearly, however, the actions of the chosen instrument are potentially circumscribed to the extent that they must not interfere with intermodal competition, although this is not a necessarily major concern with long-distance inter-city passenger travel by common carrier.

(3) CONDUCT: DEMAND SIDE

As previously mentioned, the consumers of trunk-line air transport are assumed to be atomistic. Therefore, it would be unrealistic to assume that the regulatory body could easily influence their conduct. Nor, for that matter, is it likely that they would be concerned with any such conduct as resulted. It is with no surprise that we find, therefore, that there is minimal regulation in regard to the manner in which consumers adjust to changes in the market price, the quality and availability of the product and other such variables.

As in the U.S. case, the economic regulatory body has, as one of its duties, to insure that the actions in which it indulges are in the public interest. Some examples of this concern are found in the sections which allow new licences to be granted when the Commission is satisfied that the present and future public convenience will be served⁶¹, and where the Commission is given jurisdiction to inquire into, hear and determine any matter where it appears that there are actions contrary to the public interest, or where remedial action by the order of the Commission ought to be instituted in the public interest⁶².

While the CTC must, in order to fulfill its duties, concern itself with the public interest, the parameters of the present or

future public interest are not spelled out in the statutes. Neither is there any directed method for determining this interest at any time suggested. Any matter of sufficient import as to be classified as a policy, however, is presumably forth-coming from the Ministry. Since the Ministry represents the elective side of government, however, it is presumed that the public will transmit any general discontent with a given regulatory line through the political process.

(4) CONDUCT: SUPPLY SIDE

Those areas of conduct in which one might expect to find regulatory intervention include: (a) the principles and methods employed by the firm or firms in determining the price-output configuration, including the existence of discriminatory pricing, if any; (b) the product policy; (c) the sales promotion policy; (d) the means of coordination and cross-adaptation of sales, price and product policies, if any; (e) the level of R and D expenditures; and (f) the extent of predatory practices, if any.

(a) Pricing Policy

The regulation of prices is the job of the CTC. The policy of Parliament in regard to pricing is stated in the third section of the National Transportation Act, and consists of:

(the desire that transport will be provided) at the lowest total cost consistent with an adequate, efficient and economic transport system...

...each mode, as far as practicable, receives compensation for the resources, facilities and services that it is required to provide as an imposed duty; and⁶³

...each mode of transport, so far as practicable carries traffic to or from any point in Canada under tolls...that do not constitute: (i) an unfair disadvantage in respect of any such traffic beyond that disadvantage inherent in the location of, volume of the traffic, or service involved; or (ii) an undue obstacle to the interchange of commodities between points in Canada or unreasonable discouragement to the development of primary or secondary industries or to export trade in or from any region of Canada or the movement of commodities through Canadian ports⁶⁴.

This is, in fact, a rather intimidating set of restrictions on the tolls or prices of air transport. It is, in the first part, clear that the Parliament envisages if not pure competition, at least sufficiently close as to be called 'workable' competition in the transport sector as a whole, such as will generate prices which are as low as possible given the cost curves, and cost curves which are as low as possible given the present state of technology. Given these cost curves, in order to offer the lowest possible price, it is clear that some sort of cost pricing, probably average cost pricing, is envisaged, given the possible necessity of subsidy to guarantee that the carrier will make, if practical a zero economic profit even on runs which are serviced only because they are required. While these stated desires of the Parliament do not encourage cross-subsidization,

it is not explicitly forbidden, although from the closing Section any such cross subsidization would be ruled out were it to generate any unfair regional or local disadvantage. For example, were longer routings to be priced lower than shorter distances, it is reasonable to assume that the CTC, *ceteris paribus*, would find these fares as providing an unfair disadvantage to the shorter run. However, if a fare structure, charging, for example, the same fare per mile, were to result in a profit in one part of the market and a loss in another, it is not clear that the CTC would, in support of the Section Three goals, disallow such a fare structure.

Similarly, it is not clear what the response of the regulatory commission ought to be with respect to cross-subsidization over commodities. From the final sentence, it is clear that a series of rates which allowed for international trade development, for example, rates which allowed for the transportation of commodities at the same rate as the U.S. competition might be encouraged, even though it might be necessary to internally cross-subsidize these with other commodities moving at higher prices. This would of course, only be applicable to the topic at hand were passenger fares used to cross subsidize commodity movements or vice-versa.

In addition to obligations placed on the CTC by Parliament, there are those imposed by the Minister. These obligations can take

direct form, as in a statement that a certain tariff structure ought to be allowed or encouraged, which might be done as a matter of response to an appeal. (Alternately, this might result from a matter of contention which the CTC has not yet handled). The Minister indirectly intervenes in the pricing structure when he suggests that the role of the chosen instrument ought to be, for example, sales maximization or, alternately, profit maximizing. There would quite possibly be differing pricing structures were Air Canada trying to make a positive economic profit over its entire operations, maximizing profit subject to a minimum service constraint, or trying to maximize some sales unit such as number of passenger-miles or number of passengers, subject to a profit constraint.

Within the above limitations, the CTC has the power to regulate rates⁶⁵. This power is vested in CTC only in terms of the outcome of rates, rather than in terms of the pricing policy, per se. In addition to its concern with potentially unfair aspects of any given rate, the CTC is ordered, without limiting its ability to consider other aspects, whether or not the joint ownership of more than one transport mode or facility in any way influences the rate⁶⁶. This is presumably with a view to stopping any pricing policy from generating unreasonably high rates in one section of the operation in order to cross-subsidize low rates in another as a means of driving out competition.

Finally, the CTC is given power to regulate the allocation of tolls when two or more carriers are involved in the joint movement of a single commodity. As such, the portion of the price as a whole which is charged for any part of the movement must also be reasonable.

While not directly concerned with the end product of the pricing policy, the CTC and MOT have one final, significant interest in the pricing policy. This is the area of the allocation of the costs of airports and other publically provided goods and services and the purchase and charge for the use of government supplied equipment⁶⁷. These costs and the time period over which they are to be recovered will influence the level of the carriers' cost curves, and this in most cases the prices which will be charged.

Other than the aforementioned restrictions on price, a final concern of the regulatory bodies is with discriminatory or reduced rate transport. It is a violation of the statutes to offer discriminatory prices⁶⁸, or to offer free or reduced rate transport except as approved in writing from the CTC⁶⁹. The latter provision allows for the offering of such fares as excursion or senior citizen fares. Thus potentially, the CTC has a wide range of interest in the price levels and to a certain extent in the pricing policy of the air carriers.

(b) Product Policy

Product policy deals with such dimensions of the choice of 'the product' as the type of plane used, the frequency of service, the provision of such "extras" as free drinks, foods, etc., and the provision of ancillary services.

The first three of these dimensions have already been discussed. It was noted in those discussions that the CTC has the power within the power to licence to provide for which type(s) of plane(s) will be used, the frequency of service and, via control over prices, an indirect control over the level of extras.

The provision of such ancillary services as baggage handling, reservations, special meals available by phoning ahead, pre-boarding for families with young children and all the other such extras will naturally add to the cost of production. Like advertising, they are expected to add to the demand for the individual carrier, and probably also to the total demand for air travel. The carrier, in the absence of regulation, (assuming he is a profit maximizer) would be expected to find the profit maximum maximorum with respect to the appropriate level and mix of these extras, and offer them only to that extent. Indirectly, of course, the pricing regulation wherein the CTC would allow a given tariff only if, for example, such costs could be

"justified", allows the Commission control over these extras. This might be particularly applicable to the chosen instrument in respect to its service into the "duty" areas.

(c) Sales Promotion Policy

The type and quantity of advertising would be expected to change the demand curve both for air travel as a whole and for the particular carrier. One of the major expenses other than operating are those for advertising in various forms. This is, again, not directly regulated by the CTC, although the pricing regulations once more allows some indirect control. Particularly in the case of Air Canada, insofar as it requests loans or other financial help through Parliament and during such time periods as the annual report, Parliament exerts perhaps a stronger impact, if only to the degree that the carrier feels it may have to justify some particular expenditure. Since Air Canada is expected to offer service which is price-competitive with similar North American transport service⁷⁰, any large expenditure would undoubtedly be called into question by some Honourable Member.

(d) Co-ordination and Cross-Adaptation of Sales, Price, and
Product Policies

There is a high degree of similarity in the air transport service offered in Canada, and to a not much smaller extent, across North America, in terms of sales, price and product policies. While any collusion with respect to any of these policies might not be viewed kindly by such entities as the Director of the Combines Investigation Act, it is most likely a fact of life under a regulated industrial structure. In the case of any significant change in price or product, most of which would be subject to CTC approval, the other carrier would generally be notified. When such notification is given, it is reasonable to expect the other carrier to either respond or to consider what its reactions ought to be. If the carrier initiating the change must justify the change, then the information so received will provide the other carrier with sufficient information about the expected profitability of the change as to generate what would appear to be a collusive response without further investigation.

In the final three chapters, it will be investigated whether or not any changes were instituted by one carrier, both carriers jointly, or alternately. If, for example, only one carrier ever asked for a change in rates, and the other carrier always followed any granted increase, there would be a pattern of cross adaptation with regard to

pricing policies toward which the CTC might very well wish to respond. Is the Commission, for example, willing to encourage joint presentations? While the CTC could not directly order the carriers to develop coordinated policies, it could implicitly do so by refusing to approve any other forms.

(e) Research and Development Expenditure Policy

The CTC is vested with the responsibility to:

...undertake studies and research into the economic aspects of all modes of transport within, into or from Canada.⁷¹

The Minister is adjured to:

...undertake and to cooperate with persons undertaking such projects, technical research, or study or investigation as in his opinion will promote the development of aeronautics in Canada.⁷²

Since the majority of R and D within the aerospace industry is presently carried on by individuals other than carriers, these provisions are generally relevant to this topic only in the final stages of the application of current knowledge to the use of air passenger service in the purchase of that new technology in the guise of a new plane.

Certainly the above statutory provisions allow for a change in the policy toward R and D, were the Ministry, for example to encourage a shift in research into the carrier sector. If this policy was instituted and Parliament willing to back it up, the carriers could be actively encouraged to enter into or cooperate with the CTC in any such research as appeared to have potential economic returns.

The application of the technology in the form of new planes is, of course, directly under the control of the CTC with its licencing provisions.

(f) Predatory Practices

Given the regulatory situation, the intrusion and potential for intrusion into the carriers' affairs by the CTC and the size of the carriers which exist within the Canadian market, one would expect a minimum of predatory practices. The CTC can deal with the more minor forms of these practices, if through no other grounds than their being contrary to the public interest. If the situation were to become intolerable, the CTC has powers, as previously mentioned, to revoke or alter the licence of CP Air. Were such conditions to be caused by Air Canada, the Minister, the Governor in Council and ultimately Parliament might have to intervene. However, given the situation where entry/exit and pricing decisions ultimately rest with a third

party, covert predatory practices are probably less likely than in the unregulated situation.

(5) THE STATUTORY FRAMEWORK: CTC and MOT

In Chapter 5, certain dimensions of the structure of the regulatory institutions were held most likely to influence the conduct of a regulatory agency and thus the carriers' actions. These included: (1) the stated job of the board; (2) the makeup of the board including the choice of members, the necessary qualifications for membership, and the number of members; and (3) the scope of the board's activities including its duties, the limitations on its methods of action, methods of enforcement, and its centre of concern.

The job of the Ministry, as stated in the Acts, is to supervise all matters connected with aeronautics⁷³, undertake to maintain the basic structures which allow aeronautics to occur⁷⁴, and to have general responsibility, as is the function of the government, for the development of policy, upon the advice of the CTC⁷⁵. The CTC is responsible for the day-to-day regulatory operations; that is, it applies policy. The goals of the regulations, that is, the limits placed upon the Minister and the CTC, subject always to amendment, have been previously stated. Like the CAB, the CTC cannot, therefore, change "policy", although in the Canadian case, there is an

agency which can do so, explicitly, and does. In combination, the job of the CTC-MOT combination resembles, in principle that of the CAB-DOT. The limitations and similarities will be discussed further in Chapters 8 through 10.

The relevant arm of the CTC in the regulations of air transport is, of course, the Air Transport Committee (hereafter the ATC). While in total there are no more than seventeen members of the CTC⁷⁶, the ATC consists, at any time, of not more than five nor fewer than three members⁷⁷, although the Vice-President (Law) is an ex officio member of all committees⁷⁸. The Vice-President (Law) refers to that Vice President, one of the two such positions, who is required under the statutes to be a barrister or advocate of at least ten years standing⁷⁹. More will be said about this position later. Two Commissioners constitute a quorum and are obligated, in general, to attend any sitting⁸⁰. All Commissioners are appointed by the Governor in Council⁸¹, and hold appointment for a term not to exceed ten years⁸². Upon expiry of his term, assuming he is less than seventy years of age⁸³, the Commissioner may be reappointed for another term of not more than ten years⁸⁴. The individuals on the ATC are chosen by the President⁸⁵. Other than the particular provisions which specify the powers, duties, and characteristics of the President and Vice-Presidents, there are no specifications within the statutes of the particulars of the Commissioners. Thus, any

standards which develop will be those of precedent, both on the Commission.

It can be seen from the above that the Canadian regulatory commission is a relatively small group, particularly insofar as the ATC is concerned, with possible political leanings and no a priori known pattern of expertise. The remainder of the characteristics will be reexamined when the CTC is looked at, in action, in Chapter 9.

A final concern of the CTC's character is the scope of the Board's activities. As has been previously discussed in some detail, the CTC acts to follow up MOT's policies. Additionally, the CTC serves a research role both independently and as a supportive instrument for concerns of the MOT. Its regulatory areas are those which have been called "economic" regulations, but deal with all of the modes. Finally, it serves an advisory role to the government as a whole in terms of such questions as the expenditures of public funds on capital goods for transport, intermodal developments, and other such diverse issues.

As previously mentioned, the CTC has the power of the superior court in its actions⁸⁶. The CTC may require and order actions on the part of any company or individual⁸⁷, may forbid any act or the continuance of any act⁸⁸, may make the necessary orders or

regulations for carrying out its jurisdictions under the Aeronautics Act⁸⁹, and may act upon complaint⁹⁰, or of its own accord in regard to any action, matter or issue⁹¹. Within the confines of the policy limits implied by the National Transportation Act and the MOT, the CTC has a fairly extensive range of purely regulatory power to enforce the statutes and this policy.

The CTC has the power to specify penalties for violations of any parts of the Acts which are not already therein specified⁹². In addition to any monetary or jail sentence which might be imposed, by the Court, the CTC has the power to prosecute, through the courts, for the amendment or removal of licenses. Thus, except for Air Canada, which must be granted its licence (although reasonable amendments thereto are quite possible) the CTC could prevent any carrier or individual from making further income from aeronautics operations regulated by the CTC.

The final set of statutory limitations which help define the 'type' of regulatory agency under which the CTC ought to be categorized, deals with the statutory limitations on the centre of concern of the Commission. The National Transportation Act sets down a set of goals under which the CTC is expected to operate. These general policy goals discussed earlier, are augmented by more specific policy, often for dealing with particular issues, which are provided

it by the MOT. It is assumed that the primary concern of the CTC's economic regulatory functions would centre on the achievement or maintenance of these goals. In order to achieve these goals, there are sufficient areas of intervention (which have been previously discussed) through which the CTC may alter the expected performance of the carriers. In addition, there is the research function, which the CTC is expected to fill. It would be expected that in its role of obtaining integrated, competitive intermodal performance, this function might account for a large portion of the operating budget.

FOOTNOTES

1. National Transportation Act, Revised Statutes of Canada, (1970), Chapter N-17.
2. National Transportation Act, op. cit., s. 22 (a) (b) (c) .
3. National Transportation Act, op. cit., (d) , (e) , (g) , (h) .
4. National Transportation Act, op. cit., s. 3, (a) , (b) .
5. National Transportation Act, op. cit., s. 22, (c) , (k) .
6. Air Canada Act. Revised Statutes of Canada, (1970), Chapter A-11.
7. In 1975, a CTC decision to allow part (but not all) of a requested rail rate increase was overruled by the courts on the grounds that the Commission had the power only to accept or reject such an application.
8. Sobieniak, J.W. "Forecasts of Passenger Travel in Canada's Domestic Long-Haul Air Market", CTC Research Publications Report No. 44 (Ottawa: July, 1972).
9. Considerable research would obviously be necessary to determine the pattern(s) of income distribution which would maximize travel via a particular mode. Further, it is by no means certain that the maximization of travel by any particular mode would be consistent with the largest possible aggregate travel level, however measured.
10. Aeronautics Act. Revised Statutes of Canada (1970), Chapter A-3, section 10(2) .
11. During the 29th Session of the House of Commons, the Committee on Transport expressed considerable concern with precisely this matter.
12. Aeronautics Act, op. cit., S. 3(f) .
13. Aeronautics Act, op. cit., S. 6(b) .
14. Aeronautics Act, op. cit., S. 6(1)(a) .
15. Aeronautics Act, op. cit., S. 6(1)(c) and S. 6(1)(b) .

16. Aeronautics Act, op. cit., S. 6(1)(d) and S. 6()(e).
17. Aeronautics Act, op. cit., S. 6(1)(f) and S. 6(1)(g).
18. Aeronautics Act, op. cit., S. 6(1)(k).
19. Aeronautics Act, op. cit., S. 6(1)(j) and S. 6(1)(n).
20. Aeronautics Act, op. cit., S. 6(1)(l).
21. Aeronautics Act, op. cit., S. 6(1)(m); S. 6(1)(o) and s. 8(1).
22. Aeronautics Act, op. cit., S. 16(6).
23. Aeronautics Act, op. cit., S. 16(7).
24. Aeronautics Act, op. cit., S. 16(1)(3) and National Transportation Act, op. cit., S. 25(1)(a).
25. Aeronautics Act, op. cit., S. 16(7).
26. National Transportation Act, op. cit., S. 27(1),(2),(3).
27. National Transportation Act, op. cit., S. 3
28. This does not imply, however, that the benefits from an air service would be identical to those from a highway joining the same points served. Further, S. 3(b) limits (but does not preclude) the general applicability of this reasoning by requiring that each mode bear, "so far as practicable...a fair proportion of the real costs of the resources, facilities and services provided to that mode at public expense".
29. The precise definition of 'transcontinental' is fairly complex. Difficulties arise from such choices as whether to include or exclude the Toronto-Montreal leg of a New York-Toronto-Montreal run; the practical definition was spelled out in a letter from the CTC to CP Air at the time of the policy change, and is referred to explicitly in the CP Air licence.
30. A speech by Transport Minister Jean Marchand (November 23, 1973) issued by the Ministry as a Press Release demonstrates the concern for this goal.
31. The contents of the Wheatcroft Report are still considered classified, and were unavailable at the time of this work. This information on its findings was obtained from a policy statement issued by the Minister of Transport, Don Jamieson, August 15, 1969.

32. See Miller and Douglas, op. cit., for a discussion of this process, which appears to have been the case before, and during the early stages of, the DPFI (Domestic Passenger Fare Investigation) .
33. National Transportation Act, op. cit., S. 27(1) .
34. National Transportation Act, op. cit., S. 27(2) .
35. Aeronautics Act, op. cit., S. 14(1) .
36. The House Standing Committee on Transportation and Communications expressed considerable concern over high Canadian load factors in 1967. In that instance at least, those load factors were higher than desired by the carriers, the result of heavy travel demands stimulated by the Centennial celebrations and EXPO '67 in conjunction with transport strikes and unfilled orders for aircraft.
37. One critical issue concerned the fact that Air Canada had stopped serving cookies on one of its Maritimes flights (HCSC on T and C., 28/2, 18:90).
38. National Transportation Act, op. cit., S. 23(2)(3) and under rules established under S. 14(m) of the Aeronautics Act, op. cit.
39. c.f. comments by the Hon. Mr. Schellenberger before the H.C.S.C. on Transportation and Communications, 29/1, 21:57.
40. Aeronautics Act, op. cit., S. 14(m), (i) through (iii) .
41. Normally the first class passenger space occupies one and one half times that of a coach seat. If the level of service, in the form of more costly meals, free newspapers, and so on, is also one and one half times as great, then this argument holds.
42. These provisions would fall within the licence specifications.
43. The service is clearly not free given reduced fares for standby and long term reservation services.
44. This was pointed out by the Hon. Mr. Peters to Mr. Pratte during the latter's appearance before the H.C.S.C. on T. and C., 29/1, 26:65-66 (13/12/1973) .
45. Aeronautics Act, op. cit., S. 14(d) .

46. The debate over bilingual air traffic control in Quebec provides a good example of the conflicting views on actual versus perceived safety.
47. The existence of a Canadian rail alternative is of course, in keeping with the general equilibrium view of transport, and in particular with the view of rail as a means of satisfying potential option demand.
48. The former sale would fall under the CTC's jurisdiction under the Aeronautics Act, op. cit., S. 15.
49. National Transportation Act, op. cit., S. 23(2)(a), (b) and S. 23(3)(a) and (b).
50. National Transportation Act, op. cit., S. 22(1)(c).
51. National Transportation Act, op. cit., S. 23(2)(9); S. 23(3)(a), (b) and S. 3.
52. National Transportation Act, op. cit., S. 62.
53. National Transportation Act, op. cit., S. 17(2).
54. National Transportation Act, op. cit., S. 27(1).
55. Such actions could be allowed under the rules generated under Section II of the Aeronautics Act; see Rules 360, 430 and 435.
56. National Transportation Act, op. cit., S. 45(3).
57. Aeronautics Act, op. cit., S. 14(c).
58. Aeronautics Act, op. cit., S. 14(d).
59. Aeronautics Act, op. cit., S. 14(n).
60. National Transportation Act, op. cit., S. 3.
61. Aeronautics Act, op. cit., S. 16(3).
62. Aeronautics Act, op. cit., S. 10(1)(a) and (b).
63. National Transportation Act, op. cit., S. 3(c).
64. National Transportation Act, op. cit., S. 3(d).
65. This power is given under Section 14(m) of the Aeronautics Act and Section 23 of the National Transportation Act.

66. National Transportation Act, op. cit., S. 23(3)(b) .
67. CTC powers are found in the National Transportation Act, S. 22(1)(e), (g) and (h) . Ministerial obligations are found in the Aeronautics Act, S. 5.
68. National Transportation Act, op. cit., S. 23(3) and S. 3.
69. Aeronautics Act, op. cit., S. 15.
70. Air Canada Act, op. cit., S. 14(2)(b) .
71. National Transportation Act, op. cit., S. 22(1)(b) .
72. Aeronautics Act, op. cit., S. 3(b) .
73. Aeronautics Act, op. cit., S. 3(a) .
74. Aeronautics Act, op. cit., S. 3.
75. Aeronautics Act, op. cit., S. 22(1)(a), (c), (e), (g) .
76. National Transportation Act, op. cit., S. 6(1) .
77. National Transportation Act, op. cit., Rule 220, CTC General Rules.
78. National Transportation Act, op. cit., Rule 210, CTC General Rules.
79. National Transportation Act, op. cit., S. 7(2) .
80. National Transportation Act, op. cit., S. 19(1) .
81. National Transportation Act, op. cit., S. 6(1) .
82. National Transportation Act, op. cit., S. 6(3) .
83. National Transportation Act, op. cit., S. 6(4) places this age limitation on Commissioners.
84. National Transportation Act, op. cit., S. 6(5) .
85. National Transportation Act, op. cit., Rule 220, CTC General Rules.
86. National Transportation Act, op. cit., S. 45(3) .
87. National Transportation Act, op. cit., S. 45(2) .

88. Ibid.
89. National Transportation Act, op. cit., S. 46(1).
90. See, among others, National Transportation Act, op. cit., S. 47.
91. National Transportation Act, op. cit., S. 48.
92. National Transportation Act, op. cit., S. 46(3).

PART III

THE REGULATORY BODIES

Let us reconsider for a moment what has been done and summarize what remains to be done. We have seen that we are dealing with two countries with similar underlying economic substructures to their main line air transport industries, and seemingly similar regulatory constraints. As such, where there are differing actions on the part of the regulatory institutions, one would in general expect differing performance characteristics from the two domestic air industries.

In Part I, a conceptual framework was defined, including implications of various types, degrees and patterns of intervention, which allowed us to consider what impacts these differing regulatory policies and practices could have.

In Part II, we considered the statutory frameworks in Canada and the United States, along with the constraints on the development of alternative regulatory institutions, and argued that the exogenous constraints are sufficiently similar to warrant comparison of the objective functions of the CAB and DOT with those of the CTC and MOT, respectively, for the purpose of "explaining" differing performance characteristics.

The actual operations of these regulatory agencies, and the differing performance variables which would be expected, remain to be considered. Insofar as it is possible from the evidence of their past actions to discern differing objective functions, and to link those objectives with differing performance characteristics, it will have been demonstrated that the intervention of regulatory agencies, within the frame of a given substructure, can produce differing patterns of performance. The emphasis thus turns to examination of the following questions. (1) Given the evidence of past CAB and DOT actions, what have been the objectives of these regulatory bodies? (2) What have been the performance results, anticipated and actual, from these actions? (3) What have been the objective functions of CTC and MOT? (4) What performance implications have these had?

In order to answer these questions, we will look first at the U.S. and then at the Canadian institutions, and, from various pieces of information including agency decisions, orders, and so on, try to piece together their objective functions. These functions will be described in terms of their views toward what is considered optimal structure, conduct and performance of the regulated industries. Those functions then will be compared, noting differences in the approaches and the expected different outcomes.

CHAPTER EIGHT

THE U.S. REGULATORY INSTITUTIONS

In attempting to isolate the objective function of the CAB, the concentration must be upon the past actions of these institutions. These "actions" include the actual points of intervention.

INTERVENTION /DEMAND SIDE: STRUCTURE

As discussed in Chapter II, demand side structural intervention can occur in: (1) the degree of buyer concentration and the ease of entry into the market of new or potential buyers; (2) the income distribution; (3) the effective or potential degree of information dissemination in regard to the quality of service, cost of service, or other product characteristics; (4) tastes for and fear of the product; (5) product differentiation in the minds of the buyers; and (6) other datum necessary for the calculation of the derived demand for air transport on the part of the buyers.

(1) BUYER CONCENTRATION AND EASE OF ENTRY

The buyers of mainline air transport have been assumed in general to be pure price takers. There remains, however, a question about the

manner and extent to which buyers wish, and are able (both in practical terms and as permitted by the Board) to form purchasing groups for the purpose of obtaining advantageous rates. This sort of action has historically occurred through such fare arrangements as affinity charters. Insofar as such groups have been channeled from the mainline market into non-scheduled or charter travel by regulatory intent, rather than by independent consumer choice, the Board has pursued a policy which has limited the concentration of power on the buyer side of the market. The question, then, is to what extent the Board has in fact encouraged the spin-off of such groups by permitting lower fares while effectively separating that demand from the market for scheduled passenger services¹.

Statutorily, there is very little power put into the hands of the Board on the demand side of the market in terms of entry and the resultant concentration. Within the U.S., domestic charter traffic has not been, until recently, limited in any way². (Insofar as charter arrangements guarantee an optimal load factor, thus generating the lowest attainable cost per passenger-mile, it can be argued that charter passengers "deserve" lower fares, so that it is hardly surprising that the Board has permitted segmentation of the larger market by this means). Further, however, the Board has permitted, if not encouraged, the spatial segmentation of demand through its policies regarding local (regional) transport. The best documentation of this development in the United States can be found in Eads³, who argues that the pattern

of service for the developing local carrier service was within a clearly demonstrated community of interest - that is, those areas which were spun off from the trunk markets were precisely those in which some buyer concentration existed.

By 1966, the year wherein this study commences, any historic "communities of interest" had already been incorporated into the local service pattern, and thereby effectively spun off from the mainline market. (These local carriers over time developed into full regional status, serving, within their regions, a goodly share of the traffic which would alternatively have been served by the trunk carriers).

The evidence of Board behaviour, rather than of statutory intent, suggests the Board's encouraging, once it became convinced that a demand existed, the spin-off of any submarket, either on a geographic or temporal basis, wherein a substantial degree of "potential" bargaining power existed, thus ensuring that the trunk line market remained atomistic on the demand side.

In Board communications, the picture which emerges is that of the homogeneous, powerless (price-taking), purely-competitive consumer. In part, this approach may follow directly from the Board as arbiter of the 'public interest'. Additionally, the Board has tended to raise the image of that 'public interest' not in altering market structure, nor

in influencing market conduct directly, but with concern over conduct arising from assertions that the 'rules of the game' are somehow being broken⁴, and, more importantly, in circumstances relevant to market performance. The evidence thus does not contradict the view that the Board tends to regard the consumer as a "performance taker" and sees the legitimate role of consumers limited to (a) responding to performance within the confines of letters of complaint; (b) appealing to a (newly constituted) consumer advocate; or (c) appealing directly through the formal channels of a show cause hearing when the CAB, acting in its judicial role, is unable to formally represent the consumer interest.

(2) THE INCOME DISTRIBUTIONAL IMPACT

Within this section, the concern is with the degree to which the CAB is concerned about: (a) the income distributional impact of other government programs aiming directly at redistribution; and (b) the income distributional impact of pricing by substitute carriers, either intra- or inter-modally which are either (i) unregulated, or (ii) regulated by another agency.

In general, there appears to have been no attempt on the part of the CAB to consider the impact of the pricing policies of exogenous agencies or within exogenous markets in terms of the impact on the income distribution of the consumer. There has, of course, been in-

direct concern in terms of price (and hence real income) levels, which generate sufficient demand for trunk carriage of passengers to insure developmental obligations. What concern there has been has centred on two main types of considerations: (a) lowered fares which are allowed in order to meet the competition, and (b) lowered fares which are purely discriminatory and therefore are allowed on a purely promotional basis, both of which will have an income distributional impact on the buyers, and a potential feedback onto demand. Competitive fare reductions - type (a) above - will generate increased demand for air transport directly through the combination of substitution effects (in favour of the relatively cheaper travel by air) and income effects (given that travel by air is a normal good) as well as through any long-run promotional impact. The second category, discriminatory pricing and the Board's responses to such pricing will be dealt with in a separate section. Suffice it to note here that while there will once more be direct real income effects of any uncompensated price changes, the Board has not expressed specific concern with real income levels per se.

(3) INFORMATION DISSEMINATION

As pointed out in Chapter VI, the CAB acts to insure that information on times, fares, charges, and connections are available to the consumer. Additionally, the Board has considered the cost of advertising fare or schedule changes to be reasonable costs of doing business.

Recently, for instance, the CAB has been concerned with the production of schedules which are clear, to the point, and give the appropriate fares for all potential traffic⁵.

In general, the policy of the Board with respect to information dissemination to the buyers essentially consisted of (a) increasing attempts to insure that there was accessibility to the going fares; (b) the provision of adequate information in regard to certain performance variables, including such factors as the available options for passengers who were refused boarding when they held reserved seats; and (c) the offering of increasingly standardized, uniformly defined, classes of service (consistent with the view of the consumers as homogeneous, atomistic, and price- and other-performance-taking buyers of mainline air transport services.

(4) TASTES FOR AND FEAR OF THE PRODUCT

Recently, the CAB has shown no apparent concern over consumer fear of the product. This is hardly surprising, however, given that the FAA and the National Transport Safety Board (NTSB) are specifically designated as the organizations responsible for the safety of air travel, rather than the CAB. Principally, the assumption of both the regulatory agency and the airlines appears to be that if you can once get a person on an aircraft, and if there is a good safety record, the

consumer will lose his fear of flying at least sufficiently to be willing in the future, to travel by air. It appears certain that at this stage in the development of air transport, the individual whose fear of travel by air is so strong as to prevent him from flying is a rare enough creature not to be worth the expense of convincing him that his phobia is groundless.

Insofar as tastes are directly concerned, the concern has generally been with the implications on the demand side of changing patterns of tastes. Certainly, there has been concern directed to the problems of promotional fares and other such means of attracting the marginal consumer. Explicitly, the CAB still recognizes the assumption that developmental policy, in the form of demand creation over time, rests at least partially on the offering of at least some lower-priced "promo" fares. This discount traffic is considered principally as a promotional, rather than a peak-loading, fare. It is interesting to note that over the course of the Domestic Passenger Fare Investigation (DPFI), however, discount fares tend increasingly to be referred to in the latter light; that is, as being offered to serve peak timing service, rather than as a long-run, demand-developing technique. It is apparent from many of the carrier reactions⁶ that there is a good deal of concern on the part of the carriers that any reduction in discount traffic will result in a slowing of the rate of growth of demand for air travel in all classes. The decision of the Board as part of the DPFI permits air

carriers to continue the offering of promotionally oriented fares, but subjects the carriers to certain restrictions⁷.

When one looks more closely at these restrictions, it becomes evident that the eyes of the Board, at least implicitly, are focused upon a transition from promotion to peak load fare determination. The CAB's implicit argument runs as follows. Fares which "merely serve to dilute the yield" are no longer to be allowed, and are unreasonably or unjustly discriminatory. It is clear that in the case of "developmental" fares, the intent is to develop the habit of flying among classes of individuals who would not otherwise fly, so that they continue to use air transport (or demand greater quantities than they would have) when they are ineligible for reduced-rate fares.

These sorts of individuals must, of course, for the success of any promotional venture, (a) be identifiable and excludable at a cost which does not exceed the expected return from their flights; (b) tend to develop tastes toward flying. (For example one might expect their tastes to develop toward a 'time saving' pattern, so that the value of air transport, which has as its inherent advantage the speed of its service, would increase to the consumer relative to those characteristics more easily provided by other modes); (c) be supported by customers willing and able to pay the present cost of service if there is to be cross subsidization; and (d) be induced to purchase air trans-

port at higher future fares than would otherwise be the case, if the full costs are not otherwise covered.

Clearly, one of the chief advantages of discount fares has been that they have historically served both developmental and peak pricing functions. First, it was possible to entice certain groups of readily identifiable passengers, who might not otherwise be willing or able to fly, onto the airplanes at some fare level above their marginal cost to the carrier. That is, they served to increase the load factor, while the marginal cost of their using the plane was significantly less than their fares. Secondly, over time, as their incomes typically expanded and their usage of airplanes as a mode of travel became a habit, they could be induced to turn to air carriers for transport at a higher fare than would otherwise have been the case.

Youth fares, to take one example, have been justified on both grounds. If people begin using air travel when they are young (and face income levels which are low relative to expected future flows) for all major trips, it is more likely that they will continue to do so as their income increases, assuming that travel, and specifically air travel, is a normal good. Thus while the air carriers may have been seeking to encourage peaking solutions as well as demand development, the groups which were differentiated with respect to receiving discount fares were those which were clearly differentiable and enforceable at

a minimal cost. In addition, although these customers (supposedly) had insufficient incomes to "enable" them to fly at full fares, they nevertheless paid at least their marginal costs so that whatever the contribution of their experience with travel by air as a contributor to increased demand over time, as long as they did not displace other passengers, they contributed to carrier profit.

From the historical evidence, it is not entirely clear which of these functions was the major one from the point of view of the carriers. Suffice it to note, that the CAB has referred to these sorts of fares as promos in those areas for which they were disallowed. In any case, where the carriers were able to convince the Board that the fares would serve principally in a peaking solution role, and not be assumed as permanent fares which would serve to erode yield, they were allowed to be reinstituted. However, the Board has said that, in the future, it will not allow fares which are purely promotional, and which do not result in "cost savings", and particularly not across classes of people which have in common only such characteristics as age.

(5) PRODUCT DIFFERENTIATION: BUYER'S VIEW

With respect to product differentiation with trunk service, it is clear that the Board is not convinced that consumers, except in "ignorance", view the product as being differentiated. The CAB has

determined that the service being purchased by the consumer is 'space on the aircraft'. While the Board has recognized the possibility of differing degrees of elasticity across distance (consider the arguments on the long-haul, short-haul elasticities) it is not clear that they are willing to consider first class as being a differentiable product in terms of the consumer. One needs only look at the pricing of first class service in terms of the space of coach service forgone, to realize that there is no room for consideration of differing degrees of quality of services of product. This is not to suggest that the Board is unaware of the distinctions. In essence the results of the DPFI involve the classification of all non-coach service into one or the other of two categories: (i) a cost-linked, weighted amount of coach service; or (ii) a distinctly separate market, wherein the carriers must at least cover costs, and in which they are not allowed cross-subsidization to or from other markets. That is, it is assumed either that consumers have demand curves for coach and first class service which, when converted into a common denominator such as square feet of passenger mile transport, possess the same elasticities of demand for a unit of space; or that each individual class of service has its own distinct demand (and cost) conditions under which coach and first class are viewed as independent (non-substitute) goods.

If carriers offer for sale a product which is of "superior" or "inferior" quality in the sense of being less or more costly to provide,

the Board assumes responsibility for the 'ignorant' consumer, not solely in terms of providing information about product character, but also specifically on the performance variable, selling price. Consider the case of economy class service, priced below coach fare on flights where no meal was served to either class of passenger. In this case, the Board's policy was to remove the economy rate with the following comment:⁸

... [In re economy class] on no meal flights, the additional premium paid for coach buys essentially nothing and we are forced to the conclusion that many passengers purchase coach transport, rather than economy service because they are unaware of the nature of economy service.

[As such] we find such rates unjustly and unreasonably discriminatory...

Although consumers might view certain products as being differentiated, the Board argued that there were no measures of this supposed difference. Further, even if there were, it would not take note of these differences, since it would mean that, under the present pricing procedures (that is, rate of return regulation) at least one class would then be subsidizing another class⁹.

The Board has also refused, for future purposes, to allow other than "average cost" pricing¹⁰ as an industry standard. However, the Board might well allow pricing by one or more firms which yields less than the allowable rate of return, and more than "full cost" pricing

by other carriers to end up at a given rate of return for the industry as a whole, at least within transitional demand patterns.

Since consumers are assumed to view the trunk carriers as distinct from local (regional) carriers, the Board has been willing to take note of such differences. For example, local carriers have been allowed to set rates which are higher than those of the trunk carriers. As such, there is no reason to believe that the Board is concerned with intervening to encourage product differentiation in the eyes of the buyer of transport, merely that it will allow carriers which must currently be subsidized to take advantage of any differentiation which is perceived to exist through pricing in a discriminatory manner, thereby increasing profitability and reducing required subsidization.

Where product differences, real or imagined, are perceived by the consumer, the Board, apparently, will limit the carriers to pricing in such a manner as to reflect the true costs of production, and thus will not integrate these preferences into the pricing structure. They will not, therefore, encourage the consumer to believe that because there is some difference in price there is some difference in quality. The consumer may continue to believe this to be the case, however, and buy the product called "coach" or "economy" if he wishes, although at precisely the real cost differential.

(6) DERIVED DEMAND

As mentioned in Chapter III, the Board could intervene with respect to the various elements which determine the derived demand for mainline air transport; that is, (a) the availability of substitutes; (b) the elasticity of supply of complements; (c) the elasticity of the demand for the final product; and (d) the percentage or importance of the cost of transport to the cost of the total trip or product.

(a) The Availability of Substitutes

The CAB has no direct control over the entry of other modes of transport¹¹. Therefore, the CAB's concern has been with the granting of route applications to other mainline and local carriage. The Board has stated:¹²

CAB policy has generally been not to give priority treatment to route application seeking the introduction of competitive service which might have a deleterious impact on the overall health of the air transportation system. But the Board noted that it is equally sensitive to the need of the traveling public for efficient, expeditious service in markets which can economically support improved service and in which there exist serious deficiencies.....

The above statement requires translation. "[T]he need of the travelling public for efficient, expeditious service in markets which can economically support improved service" corresponds to a determina-

tion of (i) which, if any other actual or potential carrier has the lowest AC curve, and (ii) (in line with the natural duopoly or natural small-number oligopoly model previously developed) how many firms can this market support such that all make at least zero economic profits.

"[M]ight have a deleterious impact on the overall system..." may imply the desire for 'insurance' in the form of somewhat more than zero economic profit. Assume that in the aggregate the air carriers under Board regulation are just 'breaking even' - given that the 12% rate of return utilized is a reasonable approximation to the opportunity cost of capital. Now assume that certain carriers in one or more submarkets are able to obtain returns on investment (average) of 15%. As additional carriers are permitted to enter these submarkets, say lowering the submarket rate of return to 12%, the overall rate of return will be reduced arithmetically and perhaps via spillover effects into other submarkets. Insofar as expansion is to be permitted, the alternatives include permitting new firms to enter the submarket(s) (a variable under Board control) and having existing firms expand capacity (a procedure almost entirely outside Board control). Even if potential entrants have lower marginal and average costs than do present sellers expanding output, it is not clear that the Board will encourage entry. The question has two components: the average versus marginal cost distinction; and the expansion of frequency versus the addition of capacity in the form of more or larger planes, which might be encouraged to remedy "exist[ing] serious difficiencies".

Considering the latter question, it may be that a given carrier is willing to expand service, *ceteris paribus*, by increasing (say, doubling) the size of the plane flown, while a potential entrant is willing to fly at a time not previously served, or to connect from another point which the carrier already in the market does not serve, which in effect offsets the particular deficiencies more effectively than the given carrier. It may well also be the case that not only does the entrant not exceed the maximum numbers, but also serves to generate increased demand. In such cases, there might be a positive Board preference for allowing new service, as opposed to allowing the existing carrier(s) to expand capacity. The difficulty with this entire scenario of conscious Board choice, however, is that the CAB has lacked the power to regulate industry members' capacity decisions, making planning decisions a matter of some uncertainty since entry of new competitors might or might not be accompanied by capacity changes by present industry members. The introduction of CAB power to set load factor standards, however, should play a definite role in reducing such uncertainty in the future, and should provide a distinct increase in CAB regulatory control.

(b) The Elasticity of Supply of Complements

The Board cannot alter the supply of complements directly, nor perhaps even their supply elasticities, but there is reason to believe

that the supply of complements does have a direct influence on Board pricing policies as far as charter services are concerned, and thereby an influence on trunk fares. Insofar as a carrier feels that it can, on the basis of charter or peaking demand, extend additional service at some marginal cost less than average cost or less than the proposed price, it may be willing to drop fares down to a level below that which would otherwise occur, to generate sufficient demand (given that it discovers that the total trip cost will now be out of the reach of x number of people). The Board, however, has possessed the power to regulate such fares, while the carriers, until recently have been able to offer freely full charter or package tours, which, while often not directly related to the demand for transcontinental scheduled passenger travel, will quite probably cause at least a short-run decrease in the demand for trunk scheduled service. The Board, therefore, has had to determine pricing policies in the light of carriers' use of complementary packages to channel demand into close substitutes for mainline trunk scheduled service.

(c) The Demand for the Final Product

The Board was concerned with this as a factor in the DPFI when it took note of the general economic climate and its impact on the rate of growth of demand for air travel. Clearly the Board assumed that there will be a direct impact of the general economic climate on the air

travel demand. As such, one would argue that the Board will tend to have the same pricing responses with respect to a decline (increase) in the demand for the final product as it would for a direct decline (increase) in the specific demand for air travel, were a carrier to argue that a given rate should be altered in consequence of a decline (increase) in its demand. However within the context of average cost pricing, which the Board now seems determined to enforce, there may be no Board response, or it may be that prices will be allowed to increase if the average cost is deemed to increase as load factors fall. (The new use of load factor standards, however, means that the Board may be less likely to place the full adjustment burden on fares, and to make use of some combination of fare adjustment and capacity regulation.

(d) The Relative Importance of Transport Costs

There has been relatively little concern, at least recently, with the price of transport relative to the prices of all other goods, in terms of the impact on the level of transport demand. Further, given that the CAB is going to encourage average cost pricing, one might expect that at least in the short run insofar as transport costs tend to increase, remain constant, or decrease as a proportion of the total costs of a trip, the present Board stance would tend to permit the demand for air travel to fluctuate, *pari passu*, with those average cost prices, rather than to attempt to use air fares to counter the relative price effects.

INTERVENTION/SUPPLY SIDE: STRUCTURE

On the supply side, we are concerned with the CAB response to the following structural variables: (1) turnover, or the degree of entry and exit, including (a) the freedom of entry and exit, and (b) particular barriers to entry and exit; (2) seller concentration; (3) interlocking directorates and similar corporate interrelationships; (4) product differentiation, including real quality differences; (5) unique factor market situations, including peculiar capacity or cost considerations; (6) travel agents and other particular marketing techniques; (7) information dissemination; and (8) organizational characteristics concerning the attitudes or objective functions of the procedures.

Seller concentration, and to some extent, interlocking directorships are inextricably intertwined with the condition of entry/exit. Insofar as entry and exit are effectively blocked or are highly regulated by the CAB, the degree of seller concentration will remain relatively constant. Similarly, the relationships between producers, or between producers and outsiders will tend to be those which are encouraged by the regulatory body.

The consideration of entry and exit features can be subdivided into: (1) the extent to which the CAB attempts to break down any "barriers" to entry; (2) the degree to which the CAB regulates (a) entry/

exit, (b) mergers (c) the resultant seller concentration, and (d) interlocking directorates and other intercorporate relationships; and (3) the extent to which the CAB attempts to foster the development of a particular set of interrelationships and degree of seller concentration.

(1) BARRIERS TO ENTRY

The first step in understanding the Board's response to barriers to entry is to determine what the CAB views, if any, these potential barriers to be. The proceedings of the DPFI make it clear that the Board accepted the DOT's representations in regard to the basic structure of the present air transport industry. That is, they accepted the assumption of a short run average cost curve which declined as the number of passengers increased (miles held constant) and probably also fell as distance increased (passengers held constant)¹³. Accepting these assumptions implies the existence of short run marginal costs, either distance or the number of passengers held constant, which tend to decline as the output of passenger-miles is increased. Further, even if the marginal cost schedule is rising, it nevertheless lies below the average cost curve, and the CAB's assumptions clearly point to the potential for elevation of price beyond the supply price. However, this might or might not correspond, in the short run, to the ability to achieve economic profit, and therefore might or might not be indicative of what has been categorized as a Class I barrier to entry.

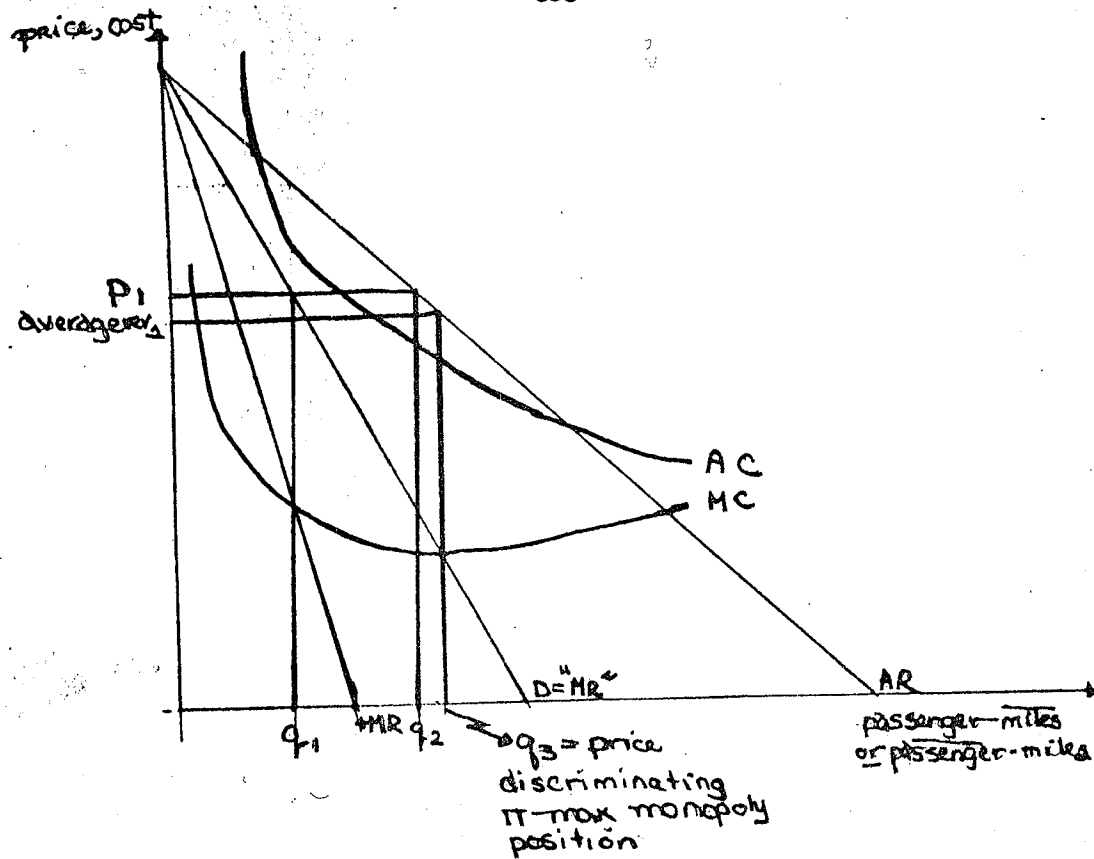


FIGURE XVII

Historically, the Board was faced with two tasks: (1) insuring that "destructive competition" did not occur, and (2) promoting the industry to a level where such destructive competition would not exist; that is, keeping the demand sufficiently ahead of the number of entrants and potential entrants that such barriers to entry did not effectively exist. Consider Figure XVII. Clearly, there is not room in the market for more than one firm; in fact, with normal pricing techniques, the single firm will not be able to cover costs. If pure price discrimination is practiced, an economic profit is attainable and may serve to attract potential competitors' interest. Suppose that a second (identical)

firm approaches the first and threatens to enter the market. If that firm does in fact enter, and the market is split, both firms will incur losses. However, given that the firms are selling (by assumption) undifferentiated products, there is a probability that the market shares will be distributed in such a way as to allow (only) one firm to break even or make a profit. Further, if the potential entrant believes that there is rigidity in the pricing structure of the current producer, so that he will be able to undercut that firm's selling price, entry may appear to be an attractive proposition. Over time, however, as the two firms compete (via price competition) for the limited market, the homogeneity of product will generate equal market shares, equal prices, and equal losses. Depending on the time period for which each firm expects the other to be willing to lose money, there is thus the possibility of entry which produces "destructive" competition...ultimately, perhaps, leaving no firms supplying that market at all.

The cycle of destructive competition might be arrested in one of several ways. The firms might be permitted to fight their battles on paper, to cartelize, and to maximize joint profits, presumably in a single plant and with compensation (bribery) payments. Alternately, the regulatory agency (the CAB) might use the threat of permitting such potentially destructive competition (for example, allowing the entry of local or third level carriers on certain routes) to prevent the initial firm from achieving too large a profit (by pursuing price discrimination

to assiduously) in the first place. Or, finally, the agency might attempt to insure that the growth of demand occurs at a sufficient rate to permit the 'smooth' entry of new firms as the market expands.

Each of the latter two strategies has been utilized by the Civil Aeronautics Board, although perhaps for differing reasons. Clearly, the Board has felt the obligation to regulate entry to preserve the air carriers from real or imagined "destructive competition", and clearly the Board has allowed considerable latitude for the development of discriminatory rates which were designed to serve a promotional policy, but which were also above the supply price. As a result, in the case where a particular submarket was clearly profitable, the CAB, in the sense of granting new licences, has permitted entry. That 'entry', however, was historically by firms already in the industry along new routes, and in fact corresponded only to long run movements (adding new planes) or short run shift (moving planes from one submarket to another) which may be viewed in many cases not as entry at all, but rather as increasing distance and passengers in particular submarkets.

The recent reluctance of the CAB to allow entry of new firms can be explained by two phenomena. First, this sort of entry had occurred in the past. The Board had managed to create carriers with higher cost curves due to the routing alignments which it, itself had generated. As such, the presence of a profitable submarket was not so much a

reflection of an overall incentive for industry expansion as a direct result of cost and demand conditions dictated by the particular service pattern of service of the carrier(s) in question.

Second, the Board has been concerned with developing a stable industry preserving some evidence of competition. The strategy of allowing existing carriers to expand into the market served both of these functions. That is, the Board knew that these carriers were reliable, financially secure operations, and, further, on the basis of their past operation, was able to predict the sorts of policies which those firms would attempt to pursue.

The Board, therefore, has established absolute barriers to entry by other than current industry members, while at the same time taking great pains to insure that those firms behave "civilly" toward one another. In the absence of CAB barriers, there is no particular reason to presume that there are long run barriers to entry of a demand-technological nature. It has been suggested¹⁴ that the expansion of the industry has occurred at a constant cost per unit of output, which is suggestive (although by no means conclusive evidence) of a constant cost industry, even if the precise relationship between the actual average cost figures and potential minimum costs is undetermined.

(a) CAB Regulation of Interaction

There has been no entry into the defined market; the trunkline carriers which are presently in existence correspond to the survivors of the 1938 Act to the present, modified via some slight merger activity. Over time, the trunk share of total passenger miles flown has declined, but there is evident in the domestic trunk market the preservation of a particular form of competitive environment. The CAB has clearly assumed (although it has not made an explicit statement to that effect) that the number of domestic trunk passenger carriers should not be increased (nor, probably, decreased) even though there has been a period of rather intense growth in passenger carriage over an extended period of time. From pre-World War II to 1957, the number of passengers carried rose by 30%¹⁵, while the figures for the period under study are shown below in Table 5.

TABLE 5

Total Trunk Domestic Passenger Emplanements, 1966-74		
Year (End February To End February)	Total Domestic Trunk Revenue Passenger Emplanements(000)	% Increase (Decrease)
1966	78,726	
1967	88,409	12.3
1968	108,200	22.3
1969	121,495	10.9
1970	128,270	5.6
1970*	130,172	-
1971	122,089	(6.2)
1972	126,413	3.6
1973	137,422	8.6
1974	145,986	6.2
1966-74		84.43**

* Figures discontinuous. Pan Am trunk domestic included in figures since 1970. Pan Am total in 1970: 1902.

** 1966-74 increase calculated omitting Pan Am trunk domestic of 795 in 1974. Total passenger emplanements excluding Pan Am, 1974: 145,191.

Source: CAB Air Carrier Traffic Statistics, February, 1967-74
(Vols. XIII-2 through XX-2)

Over the 1966-1974 period, while passenger emplanements increased by over 84% and revenue passenger miles rose by 131%, U.S. money personal income almost doubled, while real personal income increased by no more than about 50%¹⁶, suggesting an income elasticity of demand considerably greater than one¹⁷. In the face of this growth in demand (particularly up until 1971) it is perhaps somewhat surprising (but entirely consistent with the protection of cartel interests) that the CAB restricted the expansion in supply to additional services offered by

present carriers. Table 6 and Table 7 show that capacity (available seat miles, or ASM's, offered by the trunk carriers) expanded by roughly the same amount as sales (revenue passenger miles, or RPM's), so that load factors changed only slightly. (Unadjusted load factors, calculated as total RPM divided by total ASM, are included in Table 7).

TABLE 6

Available Seat Miles (ASM's): Annual Figures		
Year (End February To End February)	ASM (000)	Rate of Change (%)
1966	91, 168, 923	-
1967	99, 465, 305	9.1
1968	129, 049, 126	29.7
1969	157, 598, 329	22.1
1970*	188, 358, 090	15.8
1970	193, 922, 711	-
1971	194, 743, 800	.4
1972	203, 491, 406	4.5
1973	208, 283, 057	2.2
1974	218, 923, 418	5.1
1966-74		140.1

* Pan Am included as of 1970. Figures for 1966-74 are inflated by approximately 2.5% in consequence.

Source: CAB Air Carrier Traffic Statistics, February, 1967-74.

TABLE 7

Revenue Passenger Miles (RPM's): Annual Figures			
Year (End February To End February)	RPM	Rate of Change (%)	Unadjusted Load Factors
1966	50,382,707	-	.553
1967	58,343,179	15.8	
1968	72,832,601	24.8	
1969	82,777,457	13.7	
1970*	93,415,846	9.0	
1970	96,469,680	-	
1971	95,753,011	-7	
1972	99,361,047	3.8	.531
1973	109,021,311	9.6	
1974	116,295,297	6.7	
1966-74		130.8	

* Pan Am included in years after 1970. Total 1966-74 figures overstated by approximately 2.5% as a result.

Source: CAB Air Carrier Traffic Statistics, February, 1967-1974.

Even without CAB intervention, it appears that industry load factors have remained steady at about 55% from 1960 through 1974, with variations arising due to lagged adjustments to changing demand patterns¹⁸. The CAB, in announcing its intention to utilize load factor standards in fare regulation, argued that the use of actual (unweighted) load factors would "...only lead to increasing overcapacity...because schedules constitute the major competitive device..."¹⁹, and therefore proposed to fix fares "...at a level which would produce a reasonable return on investment [given] the standard load factor"²⁰. The difficulty with their approach for the purposes of this study, however, is that "adjusted" load factors are to be used by the CAB in the course of its

fare determination (71 /4 /54, Appendix B), and that comparable figures for the Canadian case are unavailable.

(b) Mergers

There has been, in recent years, no significant scheduled trunk domestic merger activity. By 1956, the sixteen original carriers had been reduced to twelve upon completion of the merger of Colonial and Eastern, and in 1961 Capital was merged into United to complete the development of the "Big Four". The number was reduced to ten by the merger of Northeast and Delta in August, 1972, principally gaining CAB approval on the basis of the 'failing industry' doctrine²¹.

In September, 1971, DOT announced its criteria for merger evaluation²²:

- A. A merger should not result in either the elimination of effective competition, or an excessive market share for the surviving firm, in significant city-pair regional or national markets for air carrier services.
- B. A merger should not result in undue concentration within the air carrier industry.
- C. A merger should not be likely to lead to extensive reactions and defensive merger proposals by competitive carriers so that the end result will be a restructuring of the industry and excessive concentration in a few firms.
- D. A merger should not result in substantial foreclosure of competition for interchange traffic or other excessive injury to other carriers.
- E. A merger should bring about substantial operational, service or organizational benefits for the surviving firm so that the public will receive significant benefits such as greater efficiency and better service, and the size of merged air carrier

firms should not be such as to produce significant diseconomies. F. In the case of merger of a relatively effective carrier and one that is marginal, or in the case of two marginal carriers, the resulting benefits of the surviving firm should be corrective of the original difficulty of the weaker merger partner. Alternative solutions to the problems of a marginal merging carrier should be shown to be considerably less effective than merger.

An attempted Northwest-Northeast merger was rejected in March, 1971 on the grounds that Northeast was not in extremis²³, partially, one presumes, because of the September, 1969, granting of duopoly service with National on the LAX/Miami route on the basis of strengthening Northeast's route structure²⁴. One cannot help but speculate that the refusal was related to the denial by Northeast (in proceedings in an unrelated appeal on this route award) that any merger activity was being contemplated. Six days following the rejection of the appeal and approval of the route award, Northeast announced merger talks with Northwest. When this coalition was disallowed, Northeast proceeded to apply for approval of merger with Delta, which was approved in May, 1972 on the basis that (by now) Northeast was indeed in extremis. The much-disputed Miami-Los Angeles route, however, was spun off and considered separately. Two months later, a Western-American merger was denied, on the grounds that it would not clearly result in cost savings; even insofar as it did, it would result in extensive diversion; and besides, Western was not going bankrupt!²⁵

Whether or not the CAB is now following rigorously, flexibly, or not at all, the above mentioned guideline is open to question. However, it does not appear likely that the Board will continue to allow mergers from the minor trunks into the big four²⁶, or in cases where a merger seems principally aimed at gaining routing control over a particular line which would result in diversion or extreme strengthening of one carrier as opposed to another. In general, it appears the Board will limit approval to failing firms, or perhaps to two firms with significant duplication of routes if both firms are performing relatively badly. It is highly questionable, therefore, whether this procedure could be of any use for routing rationalization, particularly in the case where such rationalization has been (a) previously denied by the Board, or is under consideration, or (b) alternately available through any other means. Certainly it is clear from the above cases that the Board will look unfavourably upon merger as a means of access to a previously denied routing. As such, the expansion or contraction of service in a particular submarket remains a distinctly separate issue.

(2) SELLER CONCENTRATION

There are several aspects to the Board's regulation of seller concentration. As mentioned above, there is clearly regulation of absolute entry to the market, and with respect to routing awards in particular submarkets. The next step in this study is an investigation

of the characteristics which the Board considers important in routing awards. Given those characteristics, the overall aggregate effects on seller concentration can then be determined.

(a) Present Concentration

The mainline carriers, only slightly diminished by merger activity since 1938, now include: American, Braniff, Continental, Delta, Eastern, National, Northwest, Pan American, Trans World, United, and Western. Table 8, Table 9, and Table 10 provide information on the domestic trunk market shares of the ten.

TABLE 8

Cumulated Domestic Trunk Market Shares, November 1973		
Number of Carriers	% of Revenue Passenger Milage (RPM's)	% of Seat Miles (ASM's)
United Airlines	22.96	21.84
United + American	38.49	37.30
United + American + Delta*	51.34	50.24
United + American + Delta* + TWA**	63.54	62.59
United + American + Delta* + TWA** + Eastern	75.14	73.44

* After the merger with Northeast which was effective 6 /1 /72.

** Due to the strike which severely curtailed operations of TWA from mid November, 1973, these figures are based on October statistics for TWA only. There are not significant differences in the cumulative market shares of the top 5, regardless, but the order changes.

Source: Percentages calculated using CAB Air Carrier Traffic Statistics, November, 1973

TABLE 9

Market Shares: Total RRM (Selected Years)														
MARKET SHARE OF RPM AIR CARRIERS (CERTIFIED): Note: Press 66 data, Caves, all traffic, later data not including nonscheduled														
Carrier Group	1939	1946	1955	1957	1959	1966	1967	1968	1969	1970	1971	1972	1973	1974
All Trunk	100.0	100.0	89.2	93.3	94.5	94.3	93.5	92.4	93.9	93.6	93.0	93.7	93.3	93.1
Big Four	81.9	66.0	66.5	67.3	63.5	57.6	54.2	55.2	56.2	56.5	55.7	54.4	54.3	52.3
American	29.3	22.0	19.4	19.2	18.3	13.3	14.8	13.6	13.5	12.7	12.5*	13.1	12.6	12.8
Eastern	14.9	13.5	16.7	16.7	14.5	11.5	9.8	10.9	10.6	10.8	11.1	10.9	10.7	10.4
TWA	15.1	12.5	13.1	14.0	15.0	14.8	13.0	14.0	13.3	14.0	14.2	14.1	14.5	12.3
United	22.6	18.0	22.2	17.4	15.7	18.0	16.6	16.7	18.8	19.0	17.9	16.3	16.5	16.8
Other Trunks	18.1	34.0	22.7	26.0	28.4	36.7	39.3	37.2	37.7	37.1	37.3	39.3	39.0	40.8
Braniff						2.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.5
Continental						2.0	2.3	2.0	2.3	2.8	3.4	3.5	3.5	3.5
Delta						6.4	7.5	6.6	6.7	7.2	7.4	7.4	8.4	9.3
National						3.9	3.5	3.6	3.6	3.1	2.3*	3.4	3.7	3.7
Northeast ^a						1.0	1.9	1.3	1.5	1.4	1.4	1.4	0.6	-
Northwest						4.9	4.6	4.9	4.8	5.0	3.1*	4.3	2.9*	5.1
Western						3.0	3.3	3.3	3.4	3.2	3.9*	3.8	3.9	3.9
Pan Am						12.8	13.7	12.3	12.2	11.2*	12.6*	12.3	12.8	11.8

Notes: a Carrier merged into Delta in 1973

* Period of strike activity

Source: Calculated from CAB Air Carrier Traffic Statistics, February, 1967-74.

Pre-1966 figures from Caves, loc. cit.

TABLE 10

Market Shares: Domestic RPM (Selected Years)													
Carrier Group	1940	1949	1954	1956	1966	1967	1968	1969	1970	1971	1972	1973	1974 ^f
All Trunk	99.2	97.5	98.3	98.5	94.3	93.7	93.9	93.2	92.8	92.0	91.8	91.5	90.8
Big Four	81.4	72.7	73.7	74.2	65.4	62.6	64.6	63.2	63.1	61.3	58.5	58.4	56.2
American	30.0	23.3	20.8	22.1	17.3	19.2	17.4	17.3	15.7*	15.5*	15.0	14.4	14.6
Eastern	15.2	15.4	17.5	17.5	12.5	10.7	11.8	11.2	10.9	11.2	11.0	11.2	10.5
TWA	14.9	14.4	16.1	15.1	14.5	13.0	13.8	13.1	12.6	12.0	11.6	11.5	9.6*
United	21.4	19.6	19.3	19.5	21.1	19.7	21.6	21.6	24.0	22.7	20.8	21.3	21.5
Other Trunks	17.8	24.8	24.6	24.3	28.9	31.1	29.3	30.0	29.7	30.7	33.3	33.1	34.6
Braniff	4.1	4.6	3.2	3.3	3.1	3.7	3.3	3.3	3.2	3.3	3.1	3.2	3.0
Capitol ^a	3.6	3.6	4.6	4.7	-	-	-	-	-	-	-	-	-
Continental	-	-	-	-	2.6	3.1	2.6	3.0	3.5	4.3	4.4	4.4	4.4
Delta	2.8	4.9	4.8	5.2	8.2	9.7	8.5	8.7	8.9	9.2	9.1*	10.8	11.9
National	0.5	2.6	4.3	4.4	5.2	4.6	4.7	4.7	3.9*	2.8*	4.1	4.5	4.4
Northeast ^b	0.4	1.0	0.6	0.6	1.3	1.6	1.7	2.0	1.8	1.7	1.7	0.7	-
Northwest	4.9	6.5	4.6	4.0	4.9	4.5	4.8	4.7	4.6	2.9*	4.4	3.0*	4.8
Western	1.5	1.6	2.5	2.1	3.6	3.7	3.7	3.7*	4.6*	4.4	4.6	4.6	4.6
Pan Am ^c	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.9	1.7	1.8	1.5

Notes: a carrier merged into United in 1961
b carrier merged into Delta in 1973
c domestic figures available as of 1971
* period of strike activity

Source: Calculated from CAB Air Carrier Traffic Statistics, February, 1967-74.
Pre-1966 figures from Caves, loc. cit.

The 1955 division of carriers into regional and trunk resulted in a division of domestic markets traffic whereby one carrier, Northeast, was substantially smaller than any of the other trunks, with "other trunks" all substantially below that of the big four. Within the big four, two were, in total market share or domestic market, noticeably larger than the other two, that is American and United viz a viz Eastern and TWA. Over time, Delta continued growing, and, after the merger with Northeast, there were "large" carriers, including United in the domestic market, and six in the total market, of not such diverse size and accounting for roughly 60% of the total. (Table 9 and Table 10).

The small trunk carriers, as shown in Table 9 and Table 10, are of equal size. It should also be noted that relative to the market in total, the movement of system trunk total movement (that is, not accounting for unscheduled movement of the trunks) is at substantially the same percent as it has been since the entry of regionals on a subsidized and developing basis. Clearly, however, between the end of the Caves study and the beginning of this work, there has been a substantial decline in that portion serviced by the big four; that is, about a 10% fall in their share between the late fifties and the late sixties. The decline is most evident in the domestic market, which is the market of our concern. Some, but not all, of the decrease in the big four is being handled by the smaller trunks, while some has been absorbed by the local or regional service carriers. As can be seen from Table 8 certain

carriers have dominant shares of the domestic market; United, for instance, operated in 1973 approximately 22% of the available seat miles flown, and about 23% of the actual passenger-milage. The five biggest carriers, had essentially three-quarters of the market both in terms of actual operation and capacity.

It is also interesting to note that in terms of the international market, Pan American, not one of the bigger carriers domestically, operates in a dominant position, followed by TWA, which operates approximately the same number of passenger and seat miles domestically as internationally. Hence Pan American and TWA display higher shares of Total RPM (Table 10) than of Domestic RPM (Table 9).

The CAB controls seller concentration, in that it has the power to allocate routes to specific carriers and to deny others the opportunity to service these routes. Since the market is, definitionally, the sum of all route operations, the allocation of the routes corresponds de facto to allocation of the market.

(b) Characteristics of Routing Awards

As previously mentioned the Board is principally interested, when considering a routing application, in a demonstration that: (1) there is sufficient demand to support $n+1$ firms (where n is the current number

of carriers serving the market); and (2) that there is at present insufficient service. Assuming these conditions to be fulfilled, the characteristics which appear to have determined the allocation of a particular routing have included:

- (a) the extreme need of a particular carrier²⁷.
- (b) a trade-off between the encouragement of interchanges and the fostering of competition. The first, interchanges, would grant entry to a particular carrier which had some other connecting point to the points in question. That is, if the question dealt with a route between B and C, it would tend to be awarded to a carrier already serving A and B, or C and D, or not to be awarded at all if present carriers were willing and able to increase service (and to demonstrate that there was particular cause why this had not been able to be done in the recent past). The competitive emphasis would tend to award the route to a particular carrier or set of carriers having to build up a competitive stance (translated as being those carriers who have a small share of the market in total). In general, one finds:
 - (1) When the demand in a particular market appears, by various standards, to be sufficient and growing, the competitive stan-

dard will be used. In such cases, the award will depend upon:

- (a) which carrier seems most likely to provide minimum spinoff or diversion from present traffic and/or the maximum net demand creation;
- (b) which carriers are fit, willing and able to provide such carriage;
- (c) which carrier, if any, is in particular need of reinforcement.

- (2) When the demand is sufficient to allow another carrier, but overall demand growth appears to be curtailed and/or overall carrier costs appear to be sufficiently reduceable, the interchange argument will be used, in order to "rationalize the industry".

(c) Implications on Seller Concentration

Quite clearly, insofar as the Board has made attempts to "rationalize", increase competition, and secure carriers from losses, one would expect the share of the markets over time to become increasingly more equal, assuming that there is no extreme growth in certain markets, about which the Board could do nothing, a trend which Tables 7 and 8 appear to support.

Additionally, it is reasonable to argue that the technique of shifting from aims of "rationalization" to active competition more than any other factor generated the pre-DPFI strategies of continual expansion. Regardless of rate of return questions and the assumed rigorously "competitive" oligopolistic nature of these carriers found in the DOT arguments, it is clearly the case that if demand is increasing and the market can be profitably served, expansion will be permitted.

(3) INTERLOCKING DIRECTORATES AND OTHER CONTROLS

As previously mentioned, the Board has statutory power to approve or prohibit interlocking directorates, and other relationships of vertical or horizontal control. Some evidence of the Board's attitude toward such control can be found in a 1975 CAB Press Release, in which it is stated:²⁸

that it need not establish a control relation in fact exists before instituting an investigation, nor is it necessary to establish the existence of control under the law to establish that financial institutions have actually exercised control of an airline as control involves the act or the power of direction or domination under many and varied circumstances, and the controlling person need not control or dominate all of the affairs of the controlled corporation.

A Board investigation had been instituted in early 1974 to investigate:²⁹

- (1) financial institutions such as banks, insurance companies and brokerage and investment firms holding in their own name or through nominees, substantial amounts of stock in any air line,
- (2) all persons holding more than 5% of an airlines outstanding indebtedness and
- (3) all persons leasing flight equipment to airlines on a long term basis.

This was done in order to determine:

- (1) Whether or in what manner equity holders may influence airline management and whether any such persons individually or jointly control any airline and
- (2) Whether the Board should take further adjudicatory action in re control or interlocking relationships found under the law, if the Board needs to amend the regulation in light of findings and whether the Board should propose changes in the Federal Aviation Act.

Quite clearly, the CAB is and has been concerned with formal ownership and interlock relationships. The fact that it has extended its concern over management by equity owners demonstrates that the Board is concerned with all forms of such control. It is interesting to note that the CAB is concerned with the degree to which a single stockholder may be able to "control" the action of a carrier, leaving one to wonder how the Board would respond to concerted activities of minority stockholders to change the policies of a particular carrier management which they felt, as owners, not to be in their best interest. Clearly there could be potential difficulty in applying policy prescriptions to external owners or controllers not directly under the jurisdiction of the CAB.

(4) PRODUCT DIFFERENTIATION, INCLUDING QUALITY DIFFERENCES

The principal form of product differentiation within scheduled domestic air transportation has been that of differing classes of service. Other forms include: (1) the offering of lounges at the airport for certain types or classes of passengers, (2) the availability of lounge service on certain of the larger planes operating on some of the longer runs; (3) the quality of food provided and the presence of liquor at different times and differing prices and other such service characteristics, etc., (4) the number of planes flying between A and B (or frequency of service along a particular routing), (5) and reservations.

In regard to the above considerations, the Board appears to have developed, given its regulatory power, the following sets of approaches during the period of study.

(1) Frequency of Service

Decisions regarding the number of planes serving a route between points A and B are limited by statute to acceptance or rejection individual carrier applications, as previously mentioned. Since the carriers have the right to expand the number of planes flying between A and B, they can be expected (given profit maximization) to carry out this expansion to the maximum degree they felt profitable, and possibly (given oligopolistic competition) to the break even load factor, as argued by DOT in the DPFI. If, therefore, the Board wishes to control the number of these planes, it must make use of its pricing powers or, to leave pricing free of direct control, must institute regulation on some alternative basis.

Reasoning along this line, the Board chose to institute load factor standards for fare level consideration. That is, if carriers wished to compete along service grounds in this manner, then they would be expected to have load factors sufficient to generate, on average, a predetermined hypothetical rate of return, at present 12%, as specified in Phase Eight of the DPFI³⁰.

Presumably, the Board's pattern of allowing new carriers to enter into profitable submarkets will in the future be altered. It would be expected to be the case that any carrier who, in a particular submarket, finds that the load factor is less than or equal to the load factor used for fare level calculations by the Board would, in the case of a submarket entry petition, have a prima facie case in opposition to the entry of such new carrier unless there could be demonstration that there would be no traffic diversion.

(2) Reservations

One of the continuing problem areas in the serving of passengers, when reservations are taken, is that of "no shows" and refused space. A carrier never knows until the last minute whether or not a particular customer will show up to get on the plane. In order to generate acceptable load factors, it may thus be necessary to overbook that particular flight. Insofar as reserved passengers fail to appear and their seats go empty, there is a loss of revenue to the carriers. Similarly, however, insofar as there are passengers refused reserved service, due to overbooking, there is a loss of revenue to the carriers, both directly and in the form of reduced future demand from inconvenienced customers. The CAB is particularly concerned about the latter case, and as one means of combatting the problem through publicity, maintains a public record of the number of refused boardings. (Tactics such as requiring

payment in advance could be expected to reduce the number of no-shows, even with full refunds for unused tickets, because of the nuisance cost involved in having to obtain those refunds, but on the other hand would tend to discourage demand at the margin for those travellers having some prospect of not making planned trips).

The Board has concluded that it has no authority to grant damages when a carrier breaks their assumed contract by denying boarding³¹, but it has conducted an investigation of the problem. The apparent result of the Board's study was a rule which required the domestic carriers to publish, semiannually, information on passengers denied confirmed space. (These individuals are, clearly, eligible for compensation for additional costs incurred until equivalent transport could be arranged). Concern was expressed by the U.S. carriers that the release of such information might "unduly" prejudice their competitive relations with foreign air carriers, who refused to release comparable information. The Board, however:³²

...tentatively concluded that information on the number of passengers who received denied boarding compensation, who qualified for such compensation but did not accept compensation offer, [or] who did not qualify for compensation due to specific reasons, would not reveal sensitive market information and would permit carrier by carrier comparison of

performance in honoring confirmed reservations.

It is further interesting to note that by 1971, the Board was more concerned with the publication of information on other aspects of service, arguing that:³³

Such [complaint statistics] reporting would be in accordance with the Board's Policy of keeping the public informed... [where] such reporting should be especially helpful in the area of baggage complaints, such as loss, theft, damage or delay, which appear to constitute a major proportion of problems encountered by travelers...

(3) Service Characteristics

Service characteristics can be divided into two major categories, those of (a) en route service, and (b) pre- or post-trip service. Within the latter are included (1) baggage claims, (ii) reservation problems, and (iii) personnel attitudes. As noted above, the CAB maintains records on the complaints it receives regarding (i) and (ii), both for the information of the carriers and that of the Board. Presumably, as in the case of reservations, when the Board feels that there are sufficiently large numbers of complaints on any particular issue, pressure will first be put on the carriers to reduce these complaints and ultimately, steps will be taken, similar to the reservation problem, to insure that the public has full knowledge of the relative abilities of the carriers to handle such claims and complaints, as well as the incidence of such complaints, for comparative buying purposes.

Similarly, in-route or on-flight complaint records are maintained, and similar measures can be taken by the Board with respect to particular issues. There have been instances of particular complaints in which the Board has acted, centring on the pricing implications of airline behaviour. Two examples are the cases of in-flight and pre-flight lounges. The former are the 'coach lounges' provided in larger planes on long-distance flights; the latter are airport lounges providing special services and not available to all passengers. In each case, the CAB's concern was with whether or not one group of passengers was subsidizing another. 'Coach lounges' were acceptable as long as their costs were covered by the users of the service, and were not subsidized by other passengers on the same (or other) routes. Pre-flight lounges were acceptable if and only if they were either open to all passengers; open to all passengers of a particular class (such as first class), whose fares would cover the full cost of the service; or open to members of an airline 'club' providing membership upon payment of applicable dues, which dues would cover the costs of the lounge service.³⁴

The present Board attitude toward service differentiation then, can be summarized as follows:

- (1) whereas the provision of particular service characteristics costs money;

(2) therefore unless all passengers have equal access to these advantages, and unless fares differ by different access, there is unreasonable price discrimination and such services will be disallowed, unless reflected in the pricing structure;

(3) while if passengers do have equal access to these services, then they should not be charged differing fares unless there are other relevant differentiating cost features.

(5) UNIQUE FACTOR MARKET SITUATIONS:

There are, as mentioned previously, technological constraints on the provision of air transport which imply certain factor market problems: (1) air traffic requires at given time periods particularly lumpy capital expenditures at the trunk level for planes; (2) labour costs account for at least fifty percent of the cost of operation, and these are relatively fixed costs with respect to the operation of passenger miles of transport along given routings with scheduled service; and (3) within the period of study, one of the variable cost factors, fuel, had a particular supply problem, wherein its costs were very rapidly rising, but more importantly, the supply was severely curtailed, implying that the additional service of passenger miles could only be obtained by increasing the load factor on the given planes.

The problems of lumpy capital are of relevance to the long run average and marginal cost curves. (Insofar as leasing arrangements can be made, of course, these "lumps" can be smoothed). The implications of any lumpiness for the average cost schedule is a curve which declines as passenger miles increase up to the point where a new plane must be added. This addition generates a quantum jump in costs, which thereafter decline once again until a further new plane is added.

Certain pricing problems arise from the existence of such a discontinuous cost curve, which is subject only indirectly to Board action. For instance, insofar as the Board regulates rate of return on investment, it is important to treat planes over an appropriate time period and one which is consistent with respect to leasing costs. These matters were reviewed in the DPF, and new depreciation and leasing cost mechanisms were developed in an effort to insure conformity, and to insure that reductions in service along routes be expedited by means of equipment interchange agreements. The Board will only allow actual rental costs as a deduction from expenditures. However, since allowable rate of return is calculated on investment, there remains an impetus for buying as opposed to leasing.

There are two important aspects to the labour market situation. First, one group of employees, those involved in flying and maintenance, are directly correlated with the number and distance of planes flown.

In addition, there are definite legal restrictions in the form of safety restrictions on the number of these people who must be hired, their qualifications, etc. Because (a) these people are reasonably highly specialized, and (b) the demand for them is directly related to the demand for the other lumpy item, planes, it is extremely difficult to alter the level of these labour costs rapidly, unless the number of aircraft operated can also be reduced, a strategy which is unlikely to be carried out unilaterally. The CAB has dealt with this inflexibility only indirectly, and that with respect to the capital reduction problem, by allowing carriers to publicly collude to reduce the number of planes flying on a given routing.

Second, within the transport sector and particularly within the air transport industry during the period under study, there were significant increases in labour costs, as well as increases in strikes and other activities. Historically, air transport unions have been fairly strong, capable of using whip-saw tactics and able to shut down air transport firms over relatively long periods by continuing strike activities from differing unions, both ground and flight. During this period, there was little response directly from the CAB, except to note that it existed. One might expect, however, that if a particular carrier or group of carriers, at the end of a strike, did not return to at least a 'reasonable' financial condition, the Board would have a tendency to grant routes to improve the condition of the carriers in question.

Insofar as the Board has stated that future fare structures must be based on cost of service, increased labour costs will be added directly into the pricing mechanism, and must be included in each coach fare. Similarly, since all non-coach fares must be cost-of-provision differentiated, any increased labour costs must be reflected in them also unless it can be demonstrated that no increase in cost is attributable to them.

Fuel, as a variable cost with respect to distances and passenger increases, has always constituted a fairly small percentage of total cost of operations. After a number of substantial price increases, fuel costs still amounted to only about eleven to twelve per cent of operating costs.³⁵ A more important consideration for the airlines during the fuel crisis was the problem of non-price rationing. The Board noted that:³⁶

The opportunities for savings [from reduced fuel consumption] in the air transportation industry are by no means as great as in other areas. This is primarily true, of course, because unlike many other forms of industry, [the use of] alternate fuels is not presently [sic] feasible. So far as the civil component of the air transport industry is concerned, it is absolutely essential, that for the time, the gains already achieved be resolutely maintained and, where feasible, enlarged upon, and the industry continue to be so operated as to remain economically sound without the use of increased fuel.

The "gains" referred to, correspond, among other things, to the CAB authorized 'reduction of flight' talks among airlines for the pur-

poses of reducing excess capacity, talks triggered directly by the onset of the fuel crisis.

(6) MARKETING CHARACTERISTICS: TRAVEL AGENTS

One of the particular marketing techniques within air transport, to which the CAB has devoted significant attention, is that of exogenous ticket sales through travel agents. During the DPFI and in the course of other investigations, the Board has demonstrated concern over (1) the yield (that is, the percent that these ticket agents receive on the sale of tickets), and (2) other benefits, including free travel, received by the travel agents in non-monetary consideration for their services. On 13 September, 1974, the Board approved interim payment of 8% sales commission to travel agents on sales of tickets for family travel, subject to cancellation. The CAB is quite clearly responsible for approving the percentage that agents will receive from the sale of all tickets, as well as determining the potentially differing scales for the sale of differing types of tickets. (Approval is given, not directly to the ticket agents, but through the Air Traffic Conference (ATC) and its agreements which provide for payment by the airlines to ATC-approved agents)³⁷.

(7) INFORMATION DISSEMINATION

As previously noted, the Board has the ability to regulate the available amount of information with respect to (a) potential or actual buyers; (b) other carriers; and (c) its own functioning. In the case of buyers, the Board maintains records of consumer complaints, and, during the time period of the analysis, emphasized that it was attempting to: (i) increase the ease of transmitting and therefore hopefully to broaden the knowledge of, consumer attitudes, tastes and preferences; consumer concerns, (ii) transmit through regular reports, that information to whomsoever receives the CAB Press Releases; and (iii) encourage open and public responses of the carriers to various crisis situations (by ensuring, for example, that carrier discussions are held in public, in order to foster two-way information flows between the airlines and the public). Further, the CAB widely distributes statistical and accounting data to the public.

In regard to information about other carriers, the mainlines of information dissemination are through (i) Board-based hearings on issues which are relevant to the carriers, including such hearings as the DPFI, and allowing all carriers the opportunity to discuss competitors' responses to items of collective interest; (ii) direct exchange of information among all carriers insofar as the Board, on issues of importance desires unanimity of response (which it appears to do);³⁸

and (iii) bilateral or multilateral negotiation between carriers for specific purposes, instigated by the Board. In sum, these have all served to increase the carriers' familiarity with their rivals in terms of development of a good estimate of their reaction functions.

Finally, the availability of information on the part of the Board viz a viz the industry, etc., as part of the structure of the market, is quite clearly an important issue. Insofar as the regulatory institutional information provision is concerned, the Board has, during the period of study, done as much reporting as possible of its views, the reasoning underlying its conclusions, and so on, using to that end press releases and orders and decisions; and has encouraged the interchange of information with other governmental agencies.³⁹

(8) OBJECTIVE FUNCTIONS: THE CARRIERS AND THE BOARD

We are concerned, on the supply side, with the manner in which the CAB perceives the carriers' objective functions, and with what the Board feels the carriers ought to feel. Insofar as the CAB, for example, perceived the carriers as "competitive", and insofar as the carriers "should" be competitive, the Board would presumably let the carriers engage in actions which result from these "competitive outlooks". There is some highly interesting inconsistency in regard to the manner in which the Board appears to have perceived the industry and the CAB's role viz a viz that industry. Included, for example, are the following views

of the structures in micro terms:

(1) the unanimity or purely cartelized view, previously mentioned;

(2) the desire for a competitive industry, encouraged by the statutes and evident in such Board statements as:

On the long term, a competitive environment is inherently more efficient and more responsible to the demand of the market than are decisions made by mutual agreement...⁴⁰

Our action is taken with expectation that a limited short term departure from competitive scheduling can help relieve air carrier financial distress without a sufficiently adverse effect on the traveling public. However, we do not intend to countenance any more than a short term departure from competitive scheduling.⁴¹

One of our principal policies has been that the traveling public is entitled to the benefits of competition, whenever it is justified by existing and projected market traffic. We have stated that major markets require competition regardless of the quantity or quality of service provided by monopoly carriers...In [this] connection we may note the common practice of incumbent carriers to increase service during the pendency of a route proceeding, thereby lowering the load factor. The Board cannot, of course, consider such actions in making a decision in route cases.⁴²

(3) concern over the fact that increased numbers might pose other sorts of problems:

above cost fares create incentives to provide too much service or to engage in other wasteful competitive practices increasing carrier costs, while fares below cost will not achieve a reasonable level of earnings or will provide service with quality or quantity below that which the public is entitled to.⁴³

I have attempted today to set down my views on the great wrenching forces set in motion, first by unproductive competition re-

sulting in overcapacity....That is why I have reached the conclusion that perhaps we must turn to the economics of profit for guidance...⁴⁴

(4) and finally, the kinked oligopoly view of the demand curve:

The nature of system route structures of carriers competing over particular segments are never the same and neither are costs nor earnings opportunities ever the same. On the other hand, fares over those segments will always be the same because otherwise lower fares would take all of the business...⁴⁵

The theory is that in the absence of price rigidities carriers will engage in price competition. However, the facts don't fit the theory. The facts are that until this proceeding, the Board never prescribed a general domestic passenger fare level, or minimum or maximum levels. Thus for over thirty years, carriers have been free to file tariffs proposing changes in their normal fares. Competitors are always free to match any fare reduction and as a result a carrier cannot expect a fare decrease to improve its market share and consequently improve its competitive situation.

The congressional purpose was to enable the Board to prevent excessive competition which would, because it is uneconomic, inevitably drive up fares. Under these circumstances, to expect pricing behavior representative of a truly competitive market structure is ingenuous at best and therefore it is not surprising that competition in basic fares has been virtually nonexistent.⁴⁶

It is quite clear from these statements that the Board has believed that a trade-off exists between "competition" and "productivity or efficiency", where the former seems to offer some unknown and unspecified boon to the consumer - unless there is too much of it - and the latter again offers some boon to the consumer unless there is too much of it. It is, however, clear, that certain performance goals are anticipated

to flow from these differing types of structural patterns. The Board has argued that there is, within the U.S. domestic air transport market, some distinct cost (as well as price) cutting to be gained by having at least two competitors and going market prices which are above cost, but not sufficiently so as to encourage increasing numbers of applicants. Similarly, the CAB has advanced the argument that profit maximization has not been possible in the past, even within the fixed constraints of an 8% rate of return, due to the utility syndrome of increasing capacity. (The Board's reasoning here has been, fundamentally, that the excessively rivalrous nature of the air carriers has generated excess investment beyond the point of either individual or joint profit maximization).

CAB INTERVENTION /DEMAND SIDE: CONDUCT

The assumption of atomistic, price-taking behaviour on the part of purchasers of air transport implies that there is no role for the consumer in price/output policies, product or sales promotion policies, the coordination of the above mentioned policies, or predatory tactics. (Insofar as consumers tend to jointly respond in terms of uniform reactions to any of the carriers policies in a way which is not anticipated by the firms in question, of course, there might arguably exist "conduct on the demand side"). In consequence the Board, acting in its "public interest" role, has sought to insert itself as a representative of the public in responses to various possible policies of the carriers. The

Board's view has been that it is market performance, rather than conduct, which is relevant in evaluating the public interest; and it has recognized the balancing necessary between consumers who may prefer, in various possible orderings, safety, low price, and high quality service.

CAB INTERVENTION/SUPPLY SIDE: CONDUCT

Regulatory intervention by the CAB can occur within: (1) the principles and methods employed by the firm (or group of firms) in determining the price/output configuration, including discriminatory pricing; (2) the product policy; (3) the sales promotion policy; (4) the means of coordination and cross adaptation of sales, price and product policies; (5) the level of R and D expenditures; and (6) the extent of predatory policies, if any. This section is concerned with the manner in which the CAB has attempted to intervene in these conduct variables, subject to the afore mentioned statutory constraints.

(1) PRICING POLICY

The CAB is clearly quite concerned with the pricing of air transport, although it has placed the major emphasis on the closely related matter of rate of return regulation. While rate of return and profit policies are somewhat distinct from pricing issues, of course, the regulation of rate of return implies certain entrepreneurial pricing choices; the

existence of regulated prices similarly influences firm investment programmes. These interrelationships were explicitly recognized in the DPFI by the division of the "pricing" arguments into Phase 7 and Phase 9; that is, fare level and fare structure, respectively. We shall examine separately, therefore: (a) the Board's views on the appropriate rate of return; (b) the fare level investigation; and (c) the fare structure investigation.

(a) Rate of Return

There was little change in the General Passenger Fare Investigation (GPFI) findings in regard to rate of return regulation⁴⁷. Therefore, on the assumption that rate of return on investment is the appropriate profit measure, the Board concerned itself with two basic areas: the level of maximum acceptable rate of return and such issues as the level of allowable investment (including such questions as whether leased aircraft should be deductible as an expense or treated as investment).

Within the question of the level of maximum acceptable rate of return, the Board considered: (i) the cost of debt and equity capital; (ii) the debt-equity ratio; and (iii) the appropriate time period. The result of the investigation was, as previously noted, a defined allowable maximum industry average rate of return increased to 12% from (the previous) 8%. In determining the actual average, the tax and return

elements are applied as a uniform percentage of total operating costs, and since no distinction is made between capacity and noncapacity operations, there exists a potential reward for the adoption of higher cost operations.

This manifestation of the Averch-Johnson overinvestment problem⁴⁸ has arguably been an acute one in the U.S. domestic air carriage market. However it is not entirely clear that the impetus for increased investment has been that the carriers are eager and knowledgeable profit maximizers, pushing against a constrained rate of return. In fact, it was argued by DOT and accepted by the CAB that the airlines' continual increases in the number of planes constituted a market strategy which, in the absence of a profit constraint, would continue unchecked.

In the presence of a binding profit constraint it would clearly be in the interest of a carrier to increase its investment base. Further, insofar as any one carrier increased the quantity of its investment (and given the marketing value of a larger fleet) it would be in the interest of other carriers (whether impinging on the profit constraint or not) to follow suit. The CAB argues that this cycle of overinvestment will ultimately cease, insofar as the carriers begin to and continue losing money; with inflexible prices, investment will cease when the cost of additional market capacity exceeds expected revenue from that investment.

Suppose, however, that a carrier is faced with the situation in which the additional cost will just equal the extra units of revenue therefrom. There arises the difficulty of determining the appropriate marginal revenue, since if the carrier does not make the additional investment in planes, (that is, if he does not offer planes departing more often or at least as often as his competitors) then his demand curve will not be at the estimated location, but lower, such that at the going market price, the quantity which he will be able to sell will be smaller. Thus, he may be faced with the necessity of continued over-investment as a loss minimization strategy. As the number of carriers declines, or as the loss continues, over time there is of course, an impetus for unilateral reductions when the estimated demand shifts become sufficiently small to no longer justify additional aircraft. Insofar as one carrier unilaterally reduces his investment and survives, other carriers may or may not find it desirable to follow suit. Regardless of whether or not this would have happened over time, the Board took the course of allowing carriers to hold discussions - that is, to collude - on capacity reduction, subject to the constraint that these discussions would be public and under the auspices of the CAB.

(b) The Fare Level

Unless it is clear that the carriers will be made better off by altering their investment patterns, it is not certain that they will be

made worse off by overinvesting than they otherwise would be by reducing capacity. The CAB has viewed the appropriate fare level as being equal to the cost of service plus the rate of return, while load factor standards are viewed as the impetus to maintain capacity within "reasonable" bounds. In determining the level to which fares should be allowed to move, however, the Board determined to calculate the price (structure) which, if the carriers were operating given the expected demand for air transport with the number of planes which would give a 55% load factor⁴⁹, would allow a return of 12% on the investment level implied by this number of planes.

These CAB's load factor standards do not interfere directly with the ability of a carrier to offer any particular number of planes; it will be interesting to observe the effects if future routing awards are tied more closely to an airline's 'successful maintenance' of the established standards. The Board has explained the choice of a hypothetical standard for the purposes of determining appropriate actual fares and rates of return as follows:⁵⁰

This proceeding poses a choice between two basic alternatives: (1) a policy of acceptance of actual or projected load factors that will result from the forecasts of traffic and operational plans of the carriers not shown to constitute uneconomic or inefficient management. Under such a policy, fares would rise if load factors rose, or (2) Base fares on standard or optimal load factors, so that earnings rather than fares would fluctuate... In the Board's view, a policy of basing fares on actual load factors can only lead to increasing overcapacity or increasingly

higher fares to compensate for the cost of operating increasingly more empty seats. This result is virtually inevitable because scheduling constitutes the major competitive device of carriers, up to the break even point.

In any case, the result of the "fare level" determination - which is definitely far from easy to determine precisely - is a theoretical average (coach) fare.

(c) Fare Structure

Having determined the average fare level which must be achieved, there is still the problem of determining the prices to be charged for differing categories of service; that is, of deciding what should be the relationship between first class, coach, and discount fares (including night class, economy, and other such fares). Clearly, insofar as you determine the net revenue a carrier will be allowed to obtain by giving him an average price and allowing him to sell what he can, one would presume that on average the carriers would be making the allowable rate of return.

Problems arise, of course, in two distinct aspects of fare structuring: (i) that of determining the price differences which (with the resultant and rather unpredictable usage of different service classes) will result in the given estimated net revenue, while establishing non-

discriminatory price differences between the classes; and (ii) that of determining the impact of differing fare structures on the level of demand for air service over time. Insofar as the CAB has historically operated on the premise that increases in the demand for air services can be generated through the use of promotional fares, there is reason to wonder: (i) over what time period these fares must remain in existence to create this seeming dependence on air transport; and (ii) to what degree have these lower fares served to shift carriers from a short run - say year by year - profit maximizing position to some other, longer-run (over ten years, for example), profit maximization time horizon.

In the orders resulting from the DPFI, the Board has made it clear that in the future, promos will be allowed only insofar as they serve to pay their own way - in which case they are hardly promos!

At present, the rules outlined by the CAB in the DPFI (and discussed above) can be recapitulated as follows:

1. In regard to discount fares, they will be allowed only when carriers can show:

- (a) a prima facie case that the allowance of this fare will serve to increase profit in the short run;

- (b) that this fare will contain an expiry date within not more than eighteen months;
- (c) level will be computed on a hypothetical full fare basis; that is, as if the discount fares are not part of the fare structure;
- (d) that there are clear blackout times when this fare cannot be used.

2. In regard to first class, economy, etc. and the relationship with coach, the Board will use its rate-making abilities to:

- (a) prescribe the reasonable minimum differential between first class and coach passengers;
- (b) prescribe the reasonable maximum differential between coach and economy.

3. In general, coach fares are to be cost-of-provision priced, and, as such, all other fares must be too, as the CAB will not allow cross subsidization to occur between coach and other classes as has been the case in the past. Generally, then, the cost of air transport will be directly related to the price which will be charged for same, and the Board will exercise rate-making authority to the extent of:

- (a) prescribing the reasonable maximum fare for coach fares for online passenger fares over routings other than these available at the basic point-to-point fares;
- (b) prescribing the method of calculation of joint fares, which consists of a distance cost for each segment plus "one rounded fixed cost segment";
- (c) permitting the carriers to propose changes in the coach fare level and structure which have the effect of moving the coach fare curve closer to the coach cost curve (at all distances) than the coach fare curve adopted in the present decision.

It is apparent from the above list that the CAB is highly involved in the method which will be used to determine the prices which can be charged; the importance which the Board places upon its influence in establishing the appropriate fare structure can be further supported by the fact that the 'cost' figures referred to are those provided by the CAB's economic section, rather than those supplied directly by the carriers.

(2) PRODUCT POLICY

The product policy determines what type and quality of product will be provided, and includes such dimensions as (a) the seating mix; (b) the number of flights offered between points A and B; and (c) the type

of planes used. In other words, the dimensions which make up the consumer's notion of an air trip are the concerns of the product policy. The subject of this section is the manner in which the CAB has intervened in the determination by any firm or group of firms of an optimal product policy. To a certain degree these considerations have already been touched upon under the heading of quality regulation, although there is at least a conceptual differentiation between the two. The CAB's views on the matter of product policy can be summarized as follows:

- (a) The introduction of new seating mixes has always been of concern to the CAB. Since the introduction of the present coach class (and through its transition from that of discount class to that of the standard class of transport the Board has monitored closely the relationship between each class (and its production cost) and the fare charged for that service.
- (b) While the CAB does not have the power to regulate directly the type of airplane, the number and frequencies of flights, or the number of seats of each class - these decisions being at the discretion of the carriers as a consequence of the DPFI - indirect control over these variables is vested in the Board through its price-regulation powers.

- (i) Insofar as the prices which will be charged for all types of passenger services must be approved by the CAB, the CAB uses a "square footage" provision to determine the allocation of costs, and therefore the allowable differential, between types of seating patterns. Therefore, the profit maximizing quantity of each type of seating can be determined by each carrier. Only insofar as group action can serve to induce the CAB to alter the pattern of prices is there any reason for direct cartelization or joint discussion.
- (ii) Insofar as the "standard" fare is based on an assumed optimal number of planes (the number determined at present by the load factor standard), it behooves the individual carrier not to expand beyond his given allocation unless he can make joint arrangements with other carriers to redistribute his time offerings, etc., in order to increase the number of passengers sufficiently to keep up with the expansion of his capacity.
- (iii) The Board, while historically encouraging entry into profitable submarkets (thus giving a potential impetus to overdevelopment in terms of numbers of planes and scheduling per carrier) will in the light of its load factor standards presumably restrict future 'entry' of this sort until load factors exceed some predetermined level, rather than permitting it if profit on the route(s) is sufficient to support an additional flight.

- (c) CAB control over matters such as seat pitch and seating configuration is indirect, once again stemming from its rate-making powers. By using its hypothetical cost figures based on specific seating characteristics (not coincidentally, the standards set by IATA!), the Board has exerted an influence over the carriers' design choices⁵¹. The choice of Western Airlines (which is not a member of IATA) to adopt additional leg room shows that the CAB influence is hardly absolute.

(3) SALES PROMOTION POLICY: EXTRAS

The CAB's control over "extras" offered by the airlines is once again an indirect one, relying upon self-interested profit maximizing behaviour on the part of the carriers in response to rate of return regulation. Prior to the DPFI, the CAB had allowed across-the-board increases in rates on the simple basis that costs had risen; clearly, an increase in the number of stewardesses per plane or a similar move designed to increase the attractiveness of a carrier's service, would lead to an increase in costs, thus in itself justifying increased fares.

The use of CAB cost figures based on standard service costs has altered the picture somewhat. Since approved fares are as a consequence of the DPFI no longer automatically responsive to actual costs, carriers' decisions to provide extras such as additional stewardesses will now

depend entirely on estimates of costs (at the margin) and demand curve shifts induced by the provision of a more attractive product. This implies a tendency for there to be less deviation from the standard under regulation than would have taken place in an unregulated environment, at least in the short run, since the airlines can never gain (individually) by having their product fixed in price regardless of cost variations. Additionally, as the method of regulating such services changes over time, one would expect to find radical shifts in the emphasis from a given amount of such services to more or less⁵².

(4) SALES PROMOTION POLICY: ADVERTISING

In a manner similar to that described above, the amount of advertising on the part of a carrier which is price or rate-of-return regulated can be expected to differ from that of the carrier which is not, depending on the relative price and advertising elasticities of demand for that carrier's product. The CAB has monitored rather carefully two dimensions of sales promotions policy: (a) the number of free tickets which are allowed to travel agents for familiarization and related purposes (monitored as a fraction of the number of paying passengers, with the CAB 'suggesting' a maximum of about .2%); and (b) the level of promotional fares.

However, there has been no substantial concern expressed within the study period about the level of advertising expenditures. One can only assume that the hypothetical cost of operations which the Board uses include some average expenditure for advertising costs.

(5) COORDINATION OF SALES AND PRODUCT POLICY

Because the carriers regulated by the CAB are exempt from "anti-trust laws"⁵³ the CAB is charged with protecting the public interest in the area of anti-trust regulation⁵⁴, including unfair competition. It is difficult to deduce from the evidence whether or not direct collusion is normal within the industry. Jordan⁵⁵ has argued quite forcefully that the U.S. trunk market is essentially cartelized, but while this may well be true with respect to the fare or pricing policy, it does not follow that the almost mandatory collusion on fares will imply collusion with respect to non-price competitive policies. Insofar as a collusive agreement is a general, total pattern of competition, and particularly insofar as it is approved by the powers that be, there is no advantage of breaking down a cartel on prices with competition in other areas. However, insofar as such agreements are not totally or publicly approved by the powers that be, it would be in the best interests of the industry to at least demonstrate the trappings of some - most advantageously non-price - competition.

In general, during the period of consideration, the CAB has responded to the coordination which does seem to exist in the following manner:

- (a) Prior to the DPFI it was a generally accepted practice in the industry to ask for, and often to be permitted, across the board increases. While there was no direct competition in the price level, it would still be surprising for all the carriers to agree, even most of the time, on the optimal level of prices. (One can well imagine the advertising advantages of being able to say, we are the carrier who fought the most recent price increase - particularly while collecting the additional revenue generated by that increase!)
- (b) Given the DPFI and the necessity on the part of most carriers to reduce the number of flights in particular submarkets, there was great incentive for this to be done on a joint - i.e. collusive - basis. It was to the advantage of any firm to see if he could keep one more flight than the competition, and certainly to let the competitors be the first to cut, generating an assumed multiplier reduction in their passengers. In this case, the CAB approved such joint talks as long as they were:
 - (i) conducted under the watchful eyes of CAB personnel; and
 - (ii) public; that is the news media and public in general could not be excluded.

There is little other evidence of Board concern over direct collusion in the available data. This sort of evidence would usually be available in the CAB reports, none of which have been published for the period under consideration, but there seems to be no strong evidence of a general pattern of CAB concern, for there appears no comment on the matter in the recent CAB press releases. (It should be noted that whenever a new promotional or discount fare is established by one carrier, the other trunk carriers are quick to follow, complete with similar advertising and other promotional features; but while such a pattern would be consistent with collusive behaviour, it is clearly not inconsistent with various forms of competition between the airlines).

(6) THE LEVEL OF R and D EXPENDITURES

The complete absence of carrier research and development expenditures on flight technology is probably the most obviously successful of CAB policies. Since the beginning of regulatory intervention, there has been a complete and fairly heavily monitored set of regulations, designed to insure that no integration of ownership and/or control takes place between the various levels of the air transport industry. Thus there has never developed the vertical ownership which one might have expected to have occurred. The division was reinforced by the support of the technological sector of the industry by government payments for military prototypes with largescale spinoffs for the private air transport sector.

As such, it is hard to imagine the CAB responding to the level of research and development expenditures directly. It is the case, however, that the results of the frequent "advances" in technology have somehow to be incorporated - or not incorporated - into the industry. Because technical change made it possible to reduce the per-passenger and per-passenger-mile cost of transport, it was highly unsurprising that the CAB welcomed the introduction of such aircraft and that the carriers developed the attitude that 'the newest is worth every cent you have'. In addition, while the new planes tended to lower or at least not increase the cost of a passenger travel, they were both more comfortable and probably (at least certainly in the minds of the consumer) safer than the older planes, so that it was similarly unsurprising that the increases in size could be accommodated by increasing numbers of passengers.

However, during the period of study, there occurred a decline in the rate of growth of passenger traffic, and the development of aircraft such as the Boeing 747 saw the introduction of planes which, while larger, did not serve to reduce the per-mile passenger transport cost⁵⁶. While such aircraft were perhaps perceived as more comfortable by passengers and potential passengers (although it is not clear that this was in fact the case), the previous generation of planes had received acceptance by the public as "safe", and there was little to be gained on that score. However, the 'biggest and newest' philosophy continued. This,

combined with the competitive device of increasing frequencies, created substantially more rapidly growing capacity than utilization. The CAB did not attempt to stop this directly, although the introduction of competition into lucrative markets must have discouraged the carriers' adoption of larger and larger aircraft. The result of the DPFI was that the CAB was able, given that it could not control the type or number of planes flown, to indirectly influence, and, under the auspices of the collusive takes, "encourage the results of a competitive process to occur more quickly"⁵⁷.

(7) UNFAIR COMPETITION

During the period covered by this study, there was no major "scandal" of unfair competition. From looking at the pre-period CAB reports, principally those of the mid-sixties, one observes the following things concerning unfair competition and the reaction of the CAB:

- (a) the CAB is interested in monitoring competitive tactics. Given, under CAB encouragement, the increased reporting of consumer complaints, it is likely that an increase in the number of investigations will result, and presumably of convictions;
- (b) generally, those forms of unfair competition which have been successfully prosecuted by the CAB include such actions as:

- (i) false or misleading advertising, including failure to disclose full prices;
 - (ii) the charging of differing, particularly lower prices than stated in the tariffs;
 - (iii) the selling of special requirement fares to people not eligible for same; and
- (c) the provision of free services to certain passengers while not to others (notably the in-flight lounges) .

CONCLUSION

From the above discussion of the CAB's response to various issues, and their reactions to external considerations including the impact of the fuel crisis, the general price level, pollution and international peace, which semi-regularly pop up in CAB discussions, it would be possible to construct a "performance goals" chart making a comparison of Canadian and U.S. air transport regulatory agencies, given sufficient information.

The next chapter comprises an examination of Canadian Ministry of Transport and Canadian Transport Commission intervention in order to set the stage for the comparison; while it will be observed that there are many similarities in the structures of the two countries' regulatory systems, it will be argued that the differences in structure and goals which do exist are sufficient to generate differing performance outcomes.

FOOTNOTES

1. There have been recent moves toward allowing 'small scale' group travel on regularly scheduled flights, adding another component to the promotional or discount fare category which at present includes family, age, and "excursion" qualifications. While these divisions are to a certain extent arbitrary (from the point of view of buyers, that is) the significant point is that buyer concentration is insufficient to permit the exercise of market power on the demand side.
2. Douglas, G.W. and J.C. Miller III. Economic Regulation of Domestic Air Transport: Theory and Policy, (Washington, D.C.: The Brookings Institution, 1974), pp. 98-99.
3. Eads, G.W. The Local Service Airline Experiment, loc. cit.
4. Consider for instance the discussion of whether or not non-public meetings, in violation of Board rules, were being conducted by several carriers interested in capacity reductions.
5. Civil Aeronautics Board Press Release, May 13, 1974 and March 7, 1975.
6. c.f. Civil Aeronautics Board, Domestic Passenger Fare Investigation, Phase 5-a and Phase 9.
7. These restrictions are typically the categorization of potential passengers, for example on the basis of age, to whom may be offered 'discount' fares.
8. Civil Aeronautics Board, Domestic Passenger Fare Investigation, Order 74/3/82.
9. Just how this assumed cross-subsidization would be affected by the rescinding of rate-of-return regulation is uncertain, not least because of ambiguity in the definition of cross-subsidization.
10. This policy will be dealt with at greater length later in the Chapter; suffice it to note here that the CAB defines 'average cost' on the basis of hypothetical cost figures.
11. The CAB may have some indirect control, of course, through its potential influence on the 'image' of air transport both absolutely and viz-a-viz other modes of travel.

12. Civil Aeronautics Board, Press Release, December 11, 1974.
13. Given a horizontal passenger-miles axis, increased output results from increased numbers of passengers or of miles, or of both passengers and miles.
14. c.f. Douglas and Miller, loc.cit.
15. Caves, R.E. Air Transport and Its Regulators. (Boston: Harvard University Press, 1962), loc.cit., p.XXX.
16. Federal Reserve Bank of St. Louis.
17. Consumer tastes and other influences on the demand for air transport may well have changed over the interval, so that it would be inappropriate to attribute the entire increase in demand to rising real incomes; the correlation is, however, suggestive c.f. CAB Orders 69/9/68 and 72/8/50.
18. See Civil Aeronautics Board. Orders. 71/4/54, for figures on the differences between carriers.
19. Civil Aeronautics Board, Orders ("Ultimate Conclusions"), 71/4/54, p. 5.
20. Ibid.
21. For the legal basis for the failing industry doctrine, see Citizen Publishing Company vs. U.S. (394 U.S. 131).
22. Lowenfeld, A.F. Aviation Law: Cases and Materials, (New York: Matthew Bender, 1972) I-205.
23. Ibid. I-203.
24. Ibid. I-202-3.
25. Lowenfeld, A.F. Aviation Law: Cases and Materials: Cumulative Supplement, (New York: Matthew Bender, 1974) pp. 17-18.
26. c.f. the present CAB Chairman Timm's comments in a speech delivered to the Traffic Club of New England, February 16, 1971. For instance: "...collectively, this segment of the trunk industry...is regulated to about 30% of the available traffic... moves which would make these carriers even larger [might well] seriously compound existing economic problems".

27. The award of the Los Angeles - Miami route to Northeast in 1969 (see Lowenfeld, loc. cit., I-202-3) is one example of such a situation.
28. Civil Aeronautics Board, Press Release. "Institutional Control of Air Carriers Investigation", January 10, 1975.
29. Civil Aeronautics Board, Press Release. January 25, 1974.
30. Civil Aeronautics Board, Order. 71/4/58.
31. Murry vs Ozard, 1179 C.A.B. Reports (1968).
32. Civil Aeronautics Board, Press Release. October 5, 1970.
33. Civil Aeronautics Board, Press Release. May 28, 1971.
34. Civil Aeronautics Board, Press Release. February 13, 1974.
35. Civil Aeronautics Board, Press Release. February 20, 1974.
36. Civil Aeronautics Board, Press Release. November 7, 1974.
37. Civil Aeronautics Board, Press Release. September 13, 1974.
38. Civil Aeronautics Board, Press Release. May 8, 1974.
39. Ibid.
40. Civil Aeronautics Board, Domestic Passenger Fare Investigation, Order 71/3/71.
41. Ibid.
42. Civil Aeronautics Board, Domestic Passenger Fare Investigation, Order 71/4/54 (p. 27)
43. Civil Aeronautics Board, Press Release. 74/3/83.
44. Civil Aeronautics Board, Press Release. May 8, 1973 (Statement by CAB Chairman Timm).
45. Civil Aeronautics Board, Press Release. April 23, 1974 (Statement by CAB Member Gilliland in "Alexander is a Swoose").
46. Civil Aeronautics Board, Press Release. 74/3/83.
47. Civil Aeronautics Board, Order. 70/2/121.

48. Averch, H. and L.L. Johnson. "Behaviour of the Firm Under Regulatory Constraint", American Economic Review, LII (December, 1972) pp. 1053-69.
49. The 55% load factor standard was an interim figure ultimately to be increased.
50. Civil Aeronautics Board, Domestic Passenger Fare Investigation, Order 71/4/54.
51. Civil Aeronautics Board, Domestic Passenger Fare Investigation, Order 71/4/48 and Order 72/5/101.
52. Consider for instance the introduction of "no frills" fares in response to the tightening of the fare structure and the emphasis on cost-of-service pricing resulting from the DPFI.
53. 49 U.S.C. 1384.
54. 49 U.S.C. 1378, 1379, 1382.
55. Jordan, W.A. Airline Regulation in America, Effects and Imperfections, op. cit., passim.
56. The Concorde provides a more recent example, if perhaps a politically complicated one. It is not entirely clear, however, to what extent the increased costs are costs per passenger resulting from falling load factors on larger planes.
57. Civil Aeronautics Board, Domestic Passenger Fare Investigation, Order 71/3/71.

CHAPTER NINE

THE CANADIAN REGULATORY INSTITUTIONS

This chapter will attempt to define the objective functions of the Air Transport Committee (ATC) of the Canadian Transport Commission (CTC) and the Ministry of Transport (MOT). Concern will be centred upon the actions of institutions during the period of study. In particular, it is important to isolate the various points of intervention into the structure and conduct of the Canadian air transport industry, in order to predict what differences, if any, would be expected in this industry as compared with the counterpart industry in the United States.

STRUCTURE: DEMAND SIDE INTERVENTION

Theoretically, in order to alter the characteristics of buyer organization, the CTC could, as previously discussed in some detail, intervene in (1) the degree of buyer concentration and the ease of entry into the market of new buyers; (2) the income distribution; (3) the effective or potential degree of information dissemination in regard to the quality of service, cost of service, or other product characteristics; (4) the taste for or fear of the product; (5) the degree of product differentiation as seen by the buyers; and (6) other factors which influence the derived demand for air transport.

(1) BUYER CONCENTRATION AND EASE OF ENTRY

Historically, the mainline market has developed into a market where the buyers are principally price takers. While there are, of course, common interests among buyers, such as large groups of travellers from a given organization travelling from a common point to a common destination, these buyers have been traditionally spun off into the so-called charter market. The choice of the consumers to enter this market, leave on special planes (not regularly scheduled ones, but ones leaving only at a given time), arrive home also on special planes, and operate under a different set of limitations regarding the payment of tickets, times and lengths of reservations, and the cost of breaking such, etc. has been influenced by the regulatory board. It is clear the CTC has encouraged the separation of such passengers. To begin with, the CTC has the power to (and does) issue permits to air carriers, other than Air Canada and CP Air, to allow them into the charter market.¹ This market is then subdivided into types of charter based on the demand side characteristics of the groups to be transported. The major types of charters which were regulated during the period of study were international, and included (i) pro rata charters, (ii) entity charters, (iii) advanced booking charters, and (iv) inclusive tour charters. The first group of charter operations, the pro rata common purpose group charter, is defined as:²

...a charter in which all the passengers to be transported share in the cost of transportation on a pro rate basis and are

- (a) persons who have been organized to travel together to attend a single event of a distinctive and special character, and whose sole purpose is to get to and from that event, or
- (b) students and educational staff accompanying the students as leaders or chaperones, where such students and educational staff travel for educational purposes on a programmed basis with the concurrence of the appropriate school authorities.

The second type of charter, the entity charter, is defined as:³

...a charter in which

- (a) the cost of transportation of passengers or goods is paid by one person, company, or organization without any contribution, direct or indirect, from any other person and
- (b) no charge or other financial obligation is imposed on any passenger as a condition of carriage or otherwise in connection with the trip.

The advanced booking, or ABC charter, is defined to be:⁴

...a round-trip international charter originating and terminating in Canada and operated by one or two licenced air carriers under a contract with the charterer, or contracts with charterers, where

- (a) one charterer or all the charterers contract for the full capacity of the aircraft, and
- (b) each charterer contracts for at least forty seats for hire to the public at a price per seat that is not less than the pro rata of the charter cost thereof to the charterer.

Finally, the inclusive tour charter is defined as:⁵

...a charter under which an air carrier contracts with one or more tour operators to charter the entire capacity of an aircraft, for resale by the tour operator or operators at a price per seat inclusive tour price.

There are, for all above mentioned charter classes, rules and regulations in regard to the sale of tickets, the cancellation policy, and other such characteristics which differentiate the charter grouping from the mainline or other markets.

It is not necessarily the case that the CTC has forced buyers into charter markets; however the actions of the Commission have given a strong push in that direction. Certainly, if a group of citizens wanted to get lower tariffs on a twice daily scheduled routes, with a promise that they would keep the planes full at all times, the CTC would probably not allow this.⁶ However, what if the citizens were to approach an air carrier and request such a charter be instituted at lower rates? More particularly, what if the citizenry approached one of the major carriers about a domestic route? In the case of a request for an inclusive tour, the answer would depend upon the impact on the major carriers which operated near the region.⁷ If the requested service was to cover points served by the carrier, it is not clear whether the CTC would authorize a Class 4 licence in addition to the Class 1 service, but it is certainly doubtful, unless at least one of the following conditions were met:⁸

- (i) the carrier holds a Class 1 or 2 licence to the points involved;

- (ii) the distance served by the charter is greater than one and one half times the direct distance served in respect of the route;
- (iii) no local traffic is carried between points on the route;
- (iv) no scheduled or regular unit toll service must be offered on the day of the charter and the carrier cannot be able to provide the required transport on a comparable basis;
- (v) the charter service must be flown with a craft with a take-off weight on wheels of less than 2,500 pounds, and
 - (i) the largest craft used on the run regularly, the Class 1 or 2 carrier, is not more than 25,000 pounds
 - (ii) the carrier is not licenced to provide regular service with a craft of 2,500 pounds or less;
- (vi) the charter service, as above, will not use any craft of 7,000 pounds or more and it regularly uses craft of not less than 25,000 but less than 50,000 pounds on its Class 1 or 2 service, and is not authorized to offer regular charter service with any craft of less than 7,000 pounds;
- (vii) the take-off weight is less than 1,800 pounds and the carrier normally flies craft having weights of over 50,000 and is not authorized to use crafts of less than 18,000 pounds;
- (viii) the flight was to be operated for health or safety reasons;
- (ix) the service is operated with concurrence of any affected Class 1 or 2 carriers;

- (x) the Committee specifically authorizes such service;
- (xi) the service must not be offered or operated with any regularity or frequency.

Thus our citizenry could probably get approval for any supplementary service which might be necessary to get a group of citizens to one point to another, but not if such service were merely an attempt to obtain lower fares by substituting charter for regularly scheduled service. It is interesting to note, however, that under the above mentioned conditions, were Air Canada to agree to let CP Air serve any two points on the transcontinental route on an infrequent basis via reduced rate charter service, the Commission would be expected to agree.

While it is not clear that the CTC has forced consumers from the mainline market into charter service, it is clear that in order to influence the price of the service, the consumers must either change the entire price level or structure, or change into the charter market. While consumers might potentially wish to organize or collude in order to obtain other changes in the performance or conduct of the carriers, this has not been a regular phenomenon. It is not clear whether or not the Commission would welcome such actions.⁹ However, the fact that the demand for air transport is typically a derived demand, and the fact that it is generally either a business matter (where the individual involved is probably not personally paying his ticket) or an irregular

demand, would make organization of air travellers, per se, less likely than were the commodity more frequently used. In general, it appears that it is safe to assume that the mainline air travellers are generally price takers, with easy entry into the market, easy exit from the market, and with low concentration of these buyers' market power. Further, there is little if any evidence that the CTC would wish it otherwise.

(2) THE INCOME DISTRIBUTION

As has been pointed out, there is considerable correlation between the level of income and the number of airline trips per capita per annum.¹⁰ However, there is no direct control, nor any suggestion of attempted influence over the income distribution in such a way as to maximize trip generations or revenue passenger mileage. Certainly the CTC is aware of the impact, as is seen from the research reports which are issued by the Commission.¹¹

However, the Board has the duty, as mentioned in Chapter VII, to insure that rates are not prejudicial to the development of other modes. As such, the CTC has the power and the obligation to concern itself with the income redistributational aspect of pricing by carriers, both intra and intermodally. While the subject has not always been viewed in this light, it is clearly the case that the Board is directly concerned with the impact of certain traffic on the development of other carriers. In

the previous Section, there was a discussion of some uses of charter carriers. One question in any request for such service must be the impact of such traffic on the mainline carriers. As noted, one of the circumstances under which a carrier might request approval to operate a charter flight was when there was no service offered and the route carrier is not in a position to provide the required transport.¹² The implication is that any service of the route carrier would not be smiled upon. Thus one would expect the CTC to object to any rates which, because of their substantial reduction from regular fares, served to similarly foster substitution of carriers. However, there is no direct concern evidenced with the real income impact of such differential fares, not for that matter of changes in fares within the air transport sector or intermodally.

(3) INFORMATION DISSEMINATION

Within the rules which are instituted under the statute authority, the CTC acts to insure that certain sorts of information are made available to the public. For example, the CTC can require an applicant to give public notice of his application and to pay the costs of this notice.¹³ The major area in which public notice is required is within fares. They must be published in a standard form and available to the public.¹⁴ The size of page, symbols, and other such things must be standard¹⁵, and a definition of terms is provided¹⁶, so that any one

who is familiar with one Canadian air tariff will easily be able to read any other.

In addition to this standardization of format, there have historically been fewer promotional and other discount fares in Canada than in the U.S. As such, there have been fewer instances where a knowledgeable person might obtain a lower fare while less well-informed passengers pay full fare. (Those Canadian fares which have been offered at a discount have also traditionally been designed for dealing with a seasonality problem, as will be discussed later in this chapter). Finally, all fares are published in Canadian dollars, and are rounded to the appropriate dollar. This may well serve to make it easier for buyers to remember or rank a given group of figures than were they quoted in dollars and cents.

The seller is specifically prohibited from issuing any false statements regarding the fare, the schedule, the aircraft used, the type of service, or the quality of service.¹⁷ That is, the CTC has been concerned that any information which is published, in any document made available to the public, is true and not misleading.

(4) TASTES FOR AND FEAR OF THE PRODUCT

The MOT is responsible, as mentioned previously, for the safety

aspects of the airline regulatory scene. One direct manner in which the CTC has intervened within this area, however, has been in the requirement for insurance. Such insurance is mandatory to cover the risks of liability to such cargo as passengers in specified amounts.¹⁸ It is not clear that such insurance requirements will lower the fear of the product, however. One must consider the possibility that if an airline were not covered by insurance, perhaps it would be more careful to avoid being sued!

There has been, in addition, implicit CTC intervention of a negative sort with respect to the tastes for air service. As previously mentioned, there has not been a rush of promotional fares aimed at stimulating the industry. At least with respect to youth fares, Air Canada viewed those fares as being primarily designed for outside purposes, such as 'allowing kids to see the world'.¹⁹ Being fully cognizant of the cross-subsidization that such fares may require,²⁰ the promotional aspect, developing the tastes of the consumers for air travel, was played down. This is not to imply that the CTC and MOT were not interested in the development of Canadian air transport. It is clearly the intent of the Ministry, as a matter of policy, and the basis of the "chosen instrument" policy, to develop the Canadian air transport network.²¹ However, the Ministry has not tended to look at the travelling habits of Canadian consumers as something which the carriers ought to be encouraged to influence.²² Since the MOT is responsible for making policy while

the CTC is responsible for enforcement, unless the Ministry were to substantially change its outlook, it is highly unlikely that there would be a massive change in fare construction.

While not directly encouraging promotional activities, the Ministry and the CTC have not stood in the way of the development of tastes for (increased demand for) air travel. The level of advertising expenditures by Air Canada and CP Air, for example, are comparable to those of the U.S. airlines.²³ Additionally, in the role of chosen instrument, Air Canada is serving, and is expected to continue to serve, routes which are "not commercially viable".²⁴ These routes are served, however, at the same basic fare per mile (plus fixed component) as more profitable routes.²⁵ The result of this service, it is presumed, will be a fully developed air transport system. Further, this network is to be supported by the regional carriage of passengers, complementing the movements of the mainlines.²⁶ However, the CTC and MOT are not out to encourage the development of the air transport network in isolation from the other modes.

(5) PRODUCT DIFFERENTIATION

There are several ways in which air transport can be seen as differentiated. One dimension of differentiation is internal to the carrier, the various "classes" of transport. If one class is, in fact,

preferable in the minds of the consumer, one would expect the regulatory agency to authorize higher fares for the premium product, *ceteris paribus*. At the beginning of the period of this study, the first class fare was 135% of the coach or economy fares. This remained the case until the middle of July, 1974, when this percentage was increased to 145%, and then further increased to 150% at the end of May, 1975. These fares are assumed to be compensatory, both by the CTC,²⁷ and by the industry.²⁸ As the relative price of first class service increased, unless the service, in the opinion of the consumer, became simultaneously more valuable, relative to coach, we would expect to find a lowered load factor in the first class sections, an expectation confirmed in practice.²⁹

Another dimension of product differentiation is between the mainline carriers and the regionals. Since the regionals are principally assumed to act as feeders into the system, and to provide service along routes which would be uneconomic if serviced by the mainlines, they are generally not in direct competition with the mainlines over much of either carrier's service network.³⁰ Further, they are not expected to expand into new mainline type services.³¹ The CTC, therefore, following Ministerial policy, has insured that the products provided by the regional and mainline carriers are in distinct markets, rather than differentiated versions of the same product.

A final set of dimensions over which the passenger may perceive the product to be differentiated is in terms of the extra services provided. Briefly, there are such services as the provision of reservations at zero cost; the ability to break these reservations at zero cost; the provision of "free" meals; stewards and stewardess services, and the like. These are built into the cost curve from which a reasonable fare will be determined. If the passenger feels that one carrier provides rather more of these than the other, when fares are identical between the major carriers over competitive routes, one would presumably find a higher load factor on that carrier. Certainly the government has not in the past, prohibited one carrier from offering slightly more costly meals than the other.³²

(6) DERIVED DEMAND

The basic elements which have been assumed to enter into the derived demand for air transport are: (a) the availability of substitute means of transport; (b) the elasticity of supply of complements; (c) the elasticity of the demand for the final product; and (d) the percentage of the cost of the total trip which is made up by the air fare.

(a) The Availability of Substitutes

Unlike the CAB, the CTC has significant control over other transport modes. The ATC, as previously mentioned, does not intervene in other modal questions directly. However, through the auspices of the Review Committee, any intermodal question can be reviewed. During the period of study, there was a conscious effort on the part of the Ministry of Transport, and CTC through its Rail Transport Committee, to insure adequate rail transport service, including passenger service. This attempt has been carried out with an eye to the potential consumer inconvenience which would result were any service abandonment to occur.³⁸ The transcontinental (and therefore mainline competitive) runs are still in operation, and are at least potentially competitive. The fare levels which have been approved, however, are not necessarily competitive, being usually as high as or higher than air travel, for a berth. (With respect to the basic fare - sitting up all the way - fares are generally bus competitive!)

While on the intermodal level air transport in Canada might obtain competition, or consumers at least find available substitutes, there is very little intramodal competition. There is, of course, competition between the mainline carriers on the transcontinental route. However, as has been mentioned, the role of the regionals has been substantially restricted. While they may, upon occasion, fly a competitive leg with

the mainlines, this is the exception. This is not to imply that they necessarily offer inferior quality service. However, since the regionals are expected to be serving routes which 'by their nature' are best served by such carriers, it must be assumed that some differences in planes are involved. One would not expect to find identical fleets, and would generally expect to find smaller planes among the fleets of the regionals, at least in terms of their scheduled routings.³⁴

Given the two points above, one would expect the demand for air travel by mainline carrier in Canada to be relatively more stable than were very close substitutes available. (The degree to which this is the case obviously depends heavily on the consumer's view of his time costs of travel, particularly if he enjoys rail travel. In a broad sense, 'substitutes' need not possess supply side similarities as long as they are perceived by consumers to be alternative choices.

(b) The Elasticity of Supply of Complements.

Certainly within the charter aspect of the air business, the supply of complements may have a direct influence on the pricing of charter travel, in the "inclusive tour" or "tour basing" class. Insofar as these revenues also go into the air carrier's coffers, any increase in these revenues generated by changes in the supply of complements would potentially serve to cross-subsidize the mainline market. Ad-

itionally, insofar as there has been an increase of such traffic, there has been a lower increase in demand than otherwise might have been the case for mainline carriers, and therefore presumably a lower load factor (or less need for buying new planes) than would otherwise be the case.

(c) The Demand for the Final Product.

As has been previously mentioned, the CTC in its research function constantly monitors such things as the expected usage patterns of future air travellers. While the Board cannot control such issues as the general state of the economy, and such factors have been demonstrated to correlate strongly with the demand changes for air travel, it can cushion the results. There has not been the encouragement of increased capacity in Canada that existed prior to the DPDI in the United States. As has been previously suggested, the limitations on market shares will do much to mitigate potential unwarranted expansion. In addition, the historic use of average cost rather than demand pricing would tend to provide relatively stable fares. However, the average cost curve is unrelated to the load factor, and if a carrier fails to generate a certain load factor, in the time of a decline of passengers or a slower rate of growth than anticipated, the average cost per passenger, and thus fare level, would be expected to increase. As such, in poor economic times, one would expect a decline in the demand and the quantity demanded of air travel. Certainly during the last part of the study

period this was true in the U.S. It is not clear that this was true in Canada until the very end of the study period, when the effect of the mid-1970's recent recession began to have a significant effect on the increase in the demand for air travel.³⁵

(d) The Relative Importance of Travel Costs.

There is no indication that the CTC has attempted to price or allow pricing or other such decisions to be influenced by the expected change in the relative importance of travel costs. It simply has not happened that either the carriers or the CTC have argued that the level of air fares ought to be decreased (increased) because the cost of air travel relative to the total cost of trips has increased (decreased).

STRUCTURE: SUPPLY SIDE INTERVENTION

The CTC is generally expected to have been concerned with the following structural aspects of the supply side of the mainline market: (1) turnover, or the degree of entry into and exit from the market, including the degree to which the CTC has tried to alter freedom of entry and exit and any particular barriers to entry and exit; (2) seller concentration; (3) interlocking directorates and similar corporate interrelationships; (4) product differentiation, including real quality differences; (5) unique factor market situations, including peculiar

capacity and cost considerations; (6) travel agents and other marketing techniques; (7) information dissemination; and (8) organizational characteristics concerning the attitudes or objective functions of the producers.

The first three structural characteristics with which the CTC might be expected to concern itself are clearly interrelated. Obviously if the CTC and MOT continue to enforce the 25% rule on CP Air's flight, seller concentration is specified. In order to consider both the actual policy of entry and exit and its assumed impacts, this section will be divided into discussion of: (a) the 25% rule, or the construction of a barrier to entry, and (b) the regulation of mergers.

(1) ENTRY AND EXIT:

(a) The 25% Rule

By Ministry policy, the prime carrier in the mainline market is Air Canada. Until 1959, Air Canada was the only mainline carrier.³⁶ At this point, CP Air was allowed to enter and serve the transcontinental run, that is Vancouver to Montreal, via Winnipeg and Toronto, on a once daily basis. This was extended in 1967, and the expansion of CP Air's routes continued until 1970 when CP Air was allowed to serve 25% of the total transcontinental market,³⁷ and, therefore some smaller share of the domestic market.

Thus, while there has been expansion of both carriers, in fact, there has been no entry to nor exit from the market during the study period. In the previous Chapter, it was pointed out that with a declining of cost curves,³⁹ there may be in "small" markets only room for one or two profitable firms. In the case of regulation in the U.S., it was pointed out that the instructions to the CAB were to "limit destructive competition". This has been done by limiting entry and promoting demand. In the Canadian case, the entry and expansion of CP Air was allowed only when it had been determined that it would not lead to the destruction of Air Canada as the prime mainline carrier,⁴⁰ nor Air Canada's potentially profitable state,⁴¹ and the entry added to the public's satisfaction.⁴² It was clearly assumed that as CP Air expanded over the period from 1967 when once daily service was offered until 1970 when the 25% rule was in force, that each of the two carriers would be able to at least break even. The fact that the 25% rule is still maintained, and that the policy of expecting Air Canada to at least break even remains in force, implies that this model still holds true. The absolute barrier to entry and the division of the potential market share which was established as a matter of policy remains in force today.

(b) Merger Activity.

Clearly, there was no merger activity during the period of interest within the confines of the market. However, there was an attempted purchase by Air Canada of a large block of the shares of a charter operation called Wardair, with the expectation that Air Canada would thus be able to gain further entry into the then very lucrative charter market. The attempt was initiated in late 1972,⁴³ and Air Canada gave formal notice of its actions under section 27(1) of the National Transportation Act. A hearing was held to consider the objections of CP Air, Nordair, Pacific Western Airlines, Transair, et. al. The issues of the hearings, as defined by the ATC were to determine:⁴⁴

- (a) if the acquisition would unduly restrict competition;
- (b) if the acquisition would otherwise be prejudicial to the public interest; and
- (c) in the event that (a) and/or (b) apply whether it should disallow such acquisition.

It was determined that the acquisition should be allowed,⁴⁵ on the basis of the facts and presumptions that:⁴⁶

- (a) it is in the public interest to provide both scheduled and charter services, both of which must be economic viable operations.
- (b) the share acquisition in Wardair would seem to add to the capabilities of both Air Canada and Wardair to expand into the charter market.
- (c) while the combined operations of Air Canada and Wardair would account for between 60 and 70 percent of Canadian charter operations, this would amount to a much smaller

percent of total charter operations including foreign carriers.

- (d) charter passengers are principally minimum-price seekers; that is, they have essentially no brand loyalty.
- (e) Air Canada and Wardair have promised to compete in the areas they are jointly serving.
- (f) should competition be adversely affected to an undue degree, the ATC can step in and take the appropriate action.
- (g) the application provides a framework under which Air Canada might seek to obtain a greater interest in Wardair, and were this to occur, the ATC would consider this as further action under section 27 and thus subject to scrutiny.

The acquisition, ultimately, did not take place, due in part to the length of time which it took to conclude hearings after the appeal of this decision. However, the evidence provided by the ATC decision shows that increased association between intramodal operations will be allowed when they lead to increased potential economies without totally destroying competition in the (fairly) broadly defined market under scrutiny.

(2) SELLER CONCENTRATION

As long as the Ministry maintains the 25% policy, the seller concentration within the domestic market will remain fairly constant. Certainly there have been some changes which would alter the particular submarkets served;⁴⁷ however, as long as CP Air is restricted to the transcontinental market and connecting legs of international flights which do not principally serve as substitutes for other domestic flights,⁴⁸ the share of the total market which can be served, in terms of passenger miles, will remain fairly fixed.

Since Air Canada and CP Air are the flag carriers on international carriage, CP Air is likely to be relatively larger in the international market than in terms of passenger miles in the domestic market. However, this size is also related to government policy in that it is up to the Minister to designate which areas of the world will be served by CP Air, which by Air Canada, and which by any other carriers.⁴⁹

In the case of total operations,⁵⁰ Air Canada is still significantly larger than CP Air in terms of share of these services provided. See Table 11.

TABLE 11

Year	REM's flown, Air Canada	Share of: CP Air	ASM's offered, Air Canada	Share of: CP Air
1966	78	22	75	25
1967	78	22	75	25
1968	77	23	75	25
1969	74	26	72	28
1970	74	26	72	28
1971	73	27	73	27
1972	74	26	74	26
1973	77	23	76	24
1974	72	28	72	28

Source: Figures provided by Mr. J. Bekooy, Head, Civil Aviation, Aviation Statistics Centre, Statistics Canada, 20 June 1975.

It is apparent, given that MOT is responsible for these shares (subject to short-run fluctuations), that CP Air was not, during the period under study, encouraged to expand⁵¹ in such fashion as would reduce the preeminence of Air Canada not only domestically but also in terms of all services. Thus it would seem likely that were CP Air to increase the share of the total services to continually greater than 25%, new routes would be granted to Air Canada rather than to CP Air as they become available within the North American sector.

(3) INTERLOCKING DIRECTORATES

This topic has already been discussed to a great extent in terms of the ATC's comments on the proposed relationship between Air Canada and Wardair. The only other evidence of the influence within the mainline market of the CTC's attitude toward close relationships is that provided by the February 14, 1974, decision of the Ministry of Transport. In the policy statement issued by the Honourable Jean Marchand on the above date, he stated that in the future all CP Air flights must still originate in Vancouver but might now terminate in either Toronto or Montreal. This change was the result of a series of requests by CP Air to the CTC. Initially such changes had been allowed, but on appeal from Air Canada they were disallowed as being a change in policy, rather than the application of policy and thus within the purview of the MOT.⁵² At least part of the recent for the change in policy, a year and a half

after the CTC refused to allow the change, appears to have been the change of heart on Air Canada's top echelons. That change, in turn, can apparently be traced to the introduction of the Air Canada Rapidair service serving Montreal/Ottawa/Toronto,⁵³ in addition to the fact that the change would save fuel⁵⁴ and reduce "significant amounts of unproductive flying for which there is no effective travel demand".⁵⁵

(4) PRODUCT DIFFERENTIATION AND QUALITY DIFFERENCES

As previously mentioned with respect to the demand side, the main form of product differentiation within mainline operations consists of the offering of different classes of services. Some dimensions of the differing services offered, including those which correspond to the several classes, include: the provision of liquor and food and the quality thereof at zero or higher price; 'extras' such as newspapers and other reading matter; the frequency of flights between points A and B; the reservation system; the baggage handling network; lounges for first class passengers; and the provision of liquor in first class lounges.

(a) Food

There has already been some discussion of the quality and quantity of food available on Air Canada and CP Air and the cost of such

service. The representatives from Air Canada, in speaking before the House of Commons Standing Committee on Transport and Communications (hereafter HCC, T&C) stated that the cost of providing the "free" meals on Air Canada was probably slightly lower for Air Canada than for CP Air, and thus, while he would not explicitly admit it, it is probably the case that CP Air's meals are of somewhat higher quality than those of Air Canada.⁵⁶ Additionally, while it was not clear that it was or was not a matter of policy, it was clear that at times Air Canada ran out of food (presumably when the plane had either a higher than anticipated load factor or more people than expected accepted the proffered food), and that at least during some time periods the reduced rate travellers, in this case those travelling on senior citizens' discounts, were the ones who were not served.⁵⁷ It was also noted that meals were served when the plane was operating during regular mealtimes.⁵⁸ Finally, it was noted that while Air Canada at some times had offered cookies as a snack on some runs, it apparently had discontinued this operation. It was not clear why this was done, and whether or not has continued to be done.⁵⁹ In all of these cases, no action was taken by the CTC. Thus it can be presumed that all costs borne by the airlines in regard to the services offered were regarded as being within reasonable bounds for the purpose of fare calculations. Were this not the case, it is presumed that the CTC would have objected to some of the several fare increases which occurred during the study period on the grounds that expenses for food services were unreasonable, could be reduced, and should so be.

Until the mid 1970's, free newspapers were provided in the "coach" and the first class sections of Air Canada. This was discontinued in the coach class.⁶⁰ However, the author could find no record of official complaint in regard to this issue.

As previously mentioned, the number of flights per day which can be offered by the mainline carriers is regulated by the CTC. However, the regulation of the number of flights which can be offered by CP Air is an indirect result of the 25% rule. Similarly, the positioning requirements which result from the mandatory origin/destination points of Vancouver and Toronto-Montreal will limit the frequency within any day or group of days as well as within certain times of the day.

The reservation systems of CP Air and Air Canada per se have not been a matter of direct concern of the CTC during the time of this study. However, the results of no-charge reservations have been. Insofar as a no-charge reservation scheme encourages multiple bookings, and bookings when it is not certain that a flight will be desired, one would expect to find a large number of no-shows. This was certainly true for the airlines under study.⁶¹ This resulted in a problem common to all airlines operating with no-charge reservations; that is, if the number of reservations is restricted to insure that all passengers who do show have seats, there are passengers who are told that the plane is filled and thus, when the reserved passengers do not show, the plane

leaves partially or even substantially empty. The fact that there was not a sufficiently predictable pattern for the no-show problem to be eliminated by the appropriate amount of overbooking suggests that load factors on at least some routes were lower than necessary. Therefore, the cost per passenger of the given flight was higher. It was even suggested that during Christmas and Easter the airlines could overbook by 200% and still fly at a 50% load factor, even when the airline requested and received reconfirmation three weeks in advance of the flights.⁶² While the average no-show percentage on Air Canada flights was running around 7%,⁶³ on certain scheduled flights it ran as high as 40% on a regular basis.⁶⁴ The airline did use a computer program which was constantly monitored in order to insure that reservations would be taken up to the current limit.⁶⁵ As such, certain costs above and beyond the reservation-taking costs must be added to deal with the no-penalty nature of breaking the reservation.

The main concern with the baggage handling service is the rate of loss and damage which the passenger must suffer. Beyond that, on domestic flights, the regulations on size, number of bags which will be carried "free" and the like are similar between the two carriers.⁶⁶ There was no evidence of unusual concern during the time period of this study with the baggage handling abilities or the success of either company in this same regard. It must be presumed that there was no excessive loss or damage to baggage by either carrier during this period, then.

Finally, the provision of such amenities as liquor or free lounges to first class passengers could arguably be a form of competitive differentiation if the same services are not offered on both carriers. However, the provision of free or reduced-rate liquor can be assumed to have been included in the cost of the service; this does not deny that it serves to differentiate the product from a service which does not provide liquor. During the study period, the carriers under consideration both offered essentially the same service in regard to the provision of liquor. Similarly, during this period, there was essentially no CTC or House Transport Committee concern with the policies followed by the carriers except for the occasional question as to whether or not the cost of any such liquor was being borne by the passengers.

Finally, while there was much concern in the United States during the latter part of the time period under review with the provision of free lounge services, there was very little evidence of Canadian concern over such services provided for first class passengers on Air Canada. The fact that Air Canada's pricing is essentially average-cost plus, and that the breakdown between first class and coach is also cost based, would probably go a long way toward providing a justification of such differences as did exist.

(5) UNIQUE FACTOR MARKET CONDITIONS

As has been previously mentioned, there are several aspects of the air transport factor markets which serve to differentiate them from other markets. These include the regulation of vertical integration, the employment of skill-specific personnel such as pilots and controllers, the significance of fuel prices, and lumpy capital costs.

During the period under investigation there was little evidence of concern with most factor market aspects. For instance, there was no apparent concern with mainline vertical integration simply because there was no significant movement toward any changes in the degree or structure of integration. The bilingualism issue in Quebec control towers appears to have been the only major factor market issue, and the relevant MOT and CTC policies in that area represent responses to an overall bilingualism policy of the government rather than the initiation of factor market policies.

There does not appear to have been quite the high level of concern over the fuel price increases in Canada that there was in the U.S. Certainly, however, the increase in the price of fuel necessitated price increases. Given average cost pricing, all fuel cost increases had to be passed on to the consumer or fuel usage cut back. The airlines were certainly cognizant of an increase in operations cost which directly cut

into the profit levels.⁶⁷ Since depreciation and interest costs were also increasing at the same time,⁶⁸ it was only a matter of time until fares would have to be increased, as they subsequently were.⁶⁹ In addition, the airlines were studying which flights would have to be dropped in the event of restrictive fuel quotas.⁷⁰

The final area of concern is with the lumpy capital goods required by the operations of aircraft with large seating capacity. Insofar as the carriers attempted to maintain a load factor of around 65%,⁷¹ and insofar as the growth and shares of the market are reasonably predictable,⁷² carriers can somewhat smooth out these costs by buying aircraft in less lumpy units through leasing and other such arrangements.⁷³ These were used by the carriers in question, but there were additional delivery problems⁷⁴ which served to enhance the discontinuity of the cost curves implicit with these types of costs. Since there is no direct rate of return regulation, there is less of a problem in Canada than in the United States resulting from these lumps, however.

(6) PECULIAR MARKETING TECHNIQUES AND CHARACTERISTICS

There were two major aspects of the marketing techniques of the Canadian airlines which came under scrutiny in this period. These were the general role of the travel agent, including the cost of using such agents and the price of tickets sold by these agents; and such policies

as "write your own" tickets and the sale or provision of forms for such sales by Air Canada to businesses and individuals. In addition to the above mentioned general aspects, there was some concern about the provision by the mainlines, of ticketing for the regionals in some particular cases.

Beginning with the latter area, the CTC approved an application from Transair for service between Winnipeg and Yorkton via Brandon, Dauphin, Regina, Saskatoon, etc. Within this application from Transair was a request for removal of an overflying prohibition which meant that the airline was not allowed to fly direct from Winnipeg to Regina/Saskatoon. This was approved, given a memorandum of agreement between Air Canada and Transair that, among other things,⁷⁵

- (i) Air Canada should provide the ground handling facilities including ticketing and reservations of Transair other than at its base point,
- (ii) (and) that the scheduling of competitive services should be arrived at jointly by Air Canada and Transair....

While this directly affects the number and manner of ticket sales on the regional carrier, it only indirectly affects the marketing of Air Canada tickets. However, insofar as this sort of interline agreement exists, Air Canada must maintain a larger ticketing staff than it

otherwise would have to. In addition, it would potentially affect spin-off sales on other destination flights on Air Canada.

Air Canada representatives stated before the House of Commons Committee on Transportation and Communications that there are two categories of external sales arrangements.⁷⁶ There are tickets which are written out by large businesses and those which are written out by ticket agents. In the first case, the corporation transportation officer writes out the ticket, presumably after having conferred with the airline to insure that space is available on the flight on which it desires to book an employee. These companies are then billed at regular intervals.⁷⁷ There is a counterpart of these "write your own" tickets on the individual level. If any individual has an Air Canada credit card, he can ticket himself at the airport.⁷⁸ Presumably someone must take time to insure that the customer can be booked on the planes; the only cost reduction to the consumer is that of a shorter waiting time.

In the case of travel agents, the customer is also paying the same ticket price. Upon questioning as to whether or not this constituted an unfair discrimination against travellers who buy their tickets at the counter, Air Canada representatives pointed out that the commission paid to travel agents makes up for the reduced cost to Air Canada of not providing the equivalent counter staff.⁷⁹ In addition, during the time period under consideration, Air Canada was attempting to connect

a few of these agents directly to the reservations computers.⁸⁰ Insofar as this experiment is successful, the computer tie rather than the phone call and the cost of the body who answers and checks the computer at Air Canada would become Air Canada's additional cost above that of the travel agent's commission for each booking. Finally, the point was made that this sort of payoff could be considerable since an estimated 65% of transcontinental business came in via these travel agents.⁸¹

(7) INFORMATION DISSEMINATION

As outlined in Chapter VII, the CTC has the power to regulate the amount of information available to potential or actual buyers; to other carriers; and for its internal use. There was no evidence of complaint, or action in regard to potential complaint, from any consumer or consumer groups about information from the trunks. This does not mean that there might not have been consumers unable to obtain desired materials; however, it was not a sufficiently large problem such that it was brought out in the public record.

There is evidence of regular information exchange between Air Canada and CP Air since they both meet regularly to defend certain policies or request changes in these policies before the ATC. However, it is reasonable to presume that the degree of such information exchange is less in Canada than in the U.S. The reason for this presumption is that

in Canada the carriers have in the past requested changes of substance, including price changes, independently of one another.⁸² Generally, this has not been the case in the U.S.⁸³ Certainly the fact that one of the major Canadian carriers did not receive, and in its opinion have time to respond to, a requested policy change on the routing patterns of the other carriers lends credence to the argument that independent decision making does exist.⁸⁴ It would be most unlikely that a decision as to whether or not a particular United States carrier could change its routing patterns in a manner which would alter the demand patterns of another, competing carrier would be made in the absence of a submission from all potentially affected carriers after adequate notice by the Civil Aeronautics Board. Similarly, there have been simultaneous requests for fare increases.

In addition, the CTC is not nearly as free with information in regard to the changes, potential or actual, or in regard to upcoming hearings, which might be relevant to consumers as individuals or in groups. There is no Canadian equivalent to the CAB Press Releases, so that an interested consumer must gain knowledge about changes in the market by looking at orders, decisions, and newspaper reports. Further, the CTC does not require that all hearings be public, a requirement to which the CAB holds for all matters of substance.⁸⁵ This is not surprising in light of the dual policy making-policy interpreting role of the CAB as contrasted with the policy interpreting role of the CTC. In

the former case, since the decision in any case might well be new policy, it is most important that all relevant parties have a chance to have their say. In the case of the ATC, if it can be demonstrated that the matter under consideration is in reality a matter of policy, the Committee will undoubtedly refer the issue to the Minister or simply refuse to allow any change which would cause a change in policy.⁸⁶

While there has been little attempt to solicit the opinions of buyers in the market, there is an ongoing series of research projects, some of which touch on this matter, carried out by the CTC staff in fulfilling its research obligations. Information on the expected response of the buyers to all sorts of potential changes are presumably solicited when necessary. The topics covered by some of the recent work makes it clear that the CTC is concerned with the demand side response, at present and over time, to such issues as fare changes.⁸⁷

Finally, the CTC appears to have had no problem in obtaining the sorts of information that it required in order to render decision. There are persistent references in the decisions to information obtained by the ATC from the carriers, some portions of which were clearly solicited.⁸⁸

(8) Organizational Characteristics and Objective Functions

It can be argued that the primary differences in the regulatory actions of the U.S. and Canada are found in the sorts of organizational characteristics which result from the differing objective functions of the purely private sector in the former market and the mixed private-public nature of the market in the latter. There is, of course, no particular reason why a public carrier could not be a profit maximizing operation. (If, however, this is the only goal of the carrier, its purposes may be limited to the purely developmental⁸⁹). Air Canada, on the other hand, has been designed to pursue several goals in addition to profit. These include: (i) the developmental role; (ii) the role of the model corporation in pursuit of such national goals as bilingualism; and (iii) the role as provider of service to regions which are not profitable. These have, to the extent that they have generated differing service patterns, modified the choices of CP Air as a profit-making organization.

These roles for Air Canada are specifically spelled out in a policy statement by the then Minister of Transport, J. Marchand, on 23 November 1975 when he stated that:⁹⁰

...Air Canada's major role was to serve the needs of the Canadian public and that it could be called upon from time to time to undertake certain service in the public interest which would not necessarily be justified on purely commercial grounds..

In addition the government expects Air Canada to perform a special role as a model corporation in such fields as decentralization, bilingualism, and labour and technological change...

and by his predecessor J.W. Pickersgill when he said:⁹¹

(the role of CP Air) must be clearly defined in a manner which protects the future economic position of Air Canada and ensures that under competent management it will be able to maintain a profitable position.

It is not surprising that a crown corporation would have, in addition to the function of "profit-making", certain social responsibilities. Were it not for the additional functions, it is unlikely given the socio-economic characteristics of North America that a crown agency would have been created rather than a private carrier have been permitted to service the market. This is particularly true given a history of potential entry of a private carrier, CP Air.⁹² It should be noted that the crown carrier is obliged to attempt to profit maximize. The degree to which the Minister or the public expects the carrier to succeed in so doing given its social obligations, however, appears to differ over time. The changes are, not surprisingly, related to individual Ministers. During the period of this study there was a distinct shift in emphasis from the more profit-oriented concern of Mr. Pickersgill to the definitely socially-oriented policies of Mr. Marchand, while at present there appears to be a strong about-face in the relative

importance of profitability and social goals under the auspices of clear, Mr. Lang. The exact causal mechanism of the changes is not clear, though one suspects that the highly unprofitable nature of Air Canada's operations of late⁹³ and the unhappy state of the economy are not unrelated to the emphasis on the user-pay notion. Finally, it should be noted that with the financial structure of Air Canada, a structure composed almost entirely of debt, rather than equity, there is no way the company could bury losses from general public view by not paying dividends and adopting other less public procedures. So while Air Canada is not subject directly to the ire stockholders might be expected to direct at management in a low-profit profit-making firm, the public's ire at taxes, a well known phenomenon, may well be as immediate and potentially lethal to management survival.

CONDUCT: DEMAND SIDE INTERVENTION

As in the case in the U.S. air transport markets, the assumption of atomistic behaviour on the part of the purchasers implies that there is no expected regulatory role for the CTC in this area. As such, the ATC has apparently sought, upon most occasions, at least, to act in a fashion which seeks to preserve both its role as judge and its role as arbiter of the public interest.

CONDUCT: SUPPLY SIDE INTERVENTION

To reiterate, regulatory intervention into the conduct of the air transport industry in Canada occurs within the following dimensions:

(1) the principles and methods employed by firms in determining the price/output configuration, including the extent of allowable price dissemination; (2) the product policy; (3) the sales promotion policy; (4) the means of coordination and cross adaptation of sales, price and product policies; (5) the level of R and D expenditures; and (6) the extent of predatory policies, if any. The section is concerned with the way in which the CTC has responded, subject to the previously mentioned statutory limitations, to each of the conduct variables.

(1) PRICING POLICY

The CTC is clearly concerned with both the fare level and the fare structure, the two dimensions of air transport pricing. Unlike the U.S. situation, however, there has never been an investigation of the magnitude of the DPFI to determine the appropriate level of costs, including the appropriate rate of return, and the appropriate degree of promotional, but discriminatory pricing which will be allowed. However, there has been continued direct and indirect concern with all of these considerations since the inception of the CTC in its modern form.

(a) Rate of Return

Air Canada, even in its most stringently profit maximizing phases, admits to being an average cost pricer.⁹⁴ It is not clear what level the assumed rate of return must be in order for Air Canada to break even, in its estimate. However, some evidence may be gained by looking at the current cost of capital, the increases in the cost of living and doing business, and the actual rate of return, and comparing these with the increases in fare level. For example, during the majority of the 1960's, (1962 through 1967) there was no fare increase on Air Canada's Canadian routes.⁹⁵ During this time period, Air Canada was earning, after taxes, a rate of return on debt plus equity which hovered closely around the government long term bond rate plus or minus a half of one percentage point.⁹⁶ However, there was during the period of analysis no statement from the regulatory branch as to what rate of return would be considered appropriate nor is there evidence of discussion during the various cost increase times as to whether or not Air Canada ought to be allowed to increase its rate of return. One of the principal reasons, one must assume, that such considerations were not made public (if they were discussed at all) must be the nature of the financial structure of Air Canada. Were Air Canada not to generate a rate of return compatible with the going rate of interest, given its relatively small equity to debt ratio, it would clearly lose money, a phenomenon which would not endear it to the population at large. In fact, this is what happened

during the latter stages of the period under study.⁹⁷ As such, however, it was a clear-cut issue. Air Canada would request a fare increase on the grounds that its costs were going up. Since financing of capital was at least partially dependent on increasing interest rates, and since available seat miles were increasing⁹⁸ (so that capital costs were increasing), it can be assumed that Air Canada was allowed to increase fares until at least the going market interest rate minus the small equity percentage was covered. The fact that there was an attempt at increasing the equity portion of the financing to bring it more in line with the air transport industry as a whole⁹⁹ makes some suspect that the carrier was earning enough to generate some positive rate of return on its equity, funds which (not having to be paid out as interest) could be retained for internal use. Since CP Air maintained, for the most part, fare parity with Air Canada, it can further be assumed that its allowable rate of return must have been greater than, equal to, or less than Air Canada's as CP Air's costs were less than, equal to, or greater than Air Canada's respectively.¹⁰⁰

(b) Fare Level

The fare level, it will be remembered, deals with the level at which fares ought to be set to generate a given amount of revenue. The determinations involved then are first the appropriate amount of revenue and second, the implications for the method of obtaining such revenues

and the expected results upon the level of demand. The notion of the expected rate of return which is implicit throughout the history of the U. S. regulatory experience and explicit from the period of the General Passenger Fare Investigation is not yet explicitly stated in the Canadian regulatory context. The differences between the two countries can be summarized as follows: In the U. S. much concern was directed at determining the appropriate rate of return and then an expected fare level was calculated from the average yield and expected number of miles flown for the trunk carriers. When it later became clear that the structure of U. S. rates would not allow this desired yield to be generated, an extensive reworking of both the structure and level of fares was required. In Canada, a fare level which would cover anticipated average costs of production was determined, and when it was discovered that costs were increasing, this level was increased. This simplistic summary nonetheless does serve to point out some rather striking differences in between the Canadian and U. S. cases, on the parts of both the regulators and the air carriers. That is, the Canadian attitude toward the fare level is that it is a working and meaningful concept which represents some measure of the average cost of each movement. Thus fares which are not "average" either represent an outright subsidy as far as the airlines were concerned,¹⁰¹ or differential-quality service, as would be the case in first class.

In order to calculate a reasonable fare level, in addition to knowing an appropriate rate of return, the carrier must determine an

appropriate load factor. This level will influence both the expected returns and the expected costs of each movement. That is, if a given number of bodies are expected to fly on each trip at a given price or fare level, if that reasonable load factor is assumed to be 55% it will generate a given amount of present (and expected future) revenue. This number of ????? will also be associated with a given level of expense, including the cost of new capital (principally airplanes). If however, the reasonable load factor is 65%, the fare would, at any given time, be expected to be lower. However, since there are more bodies the revenue is more or less the same, depending on the demand elasticities. Since it is assumed that Air Canada is not a pure profit-maximizing monopoly pricer, it is not obvious which of these will be the case. Further, costs are not obviously higher or lower than in the very short period. That is, while there is some portion of the costs which is variable and increases as the number of passengers increase, this is probably a fairly small amount. However, over time, for any expected increase in demand (in absolute numbers) there would be a smaller increase in airplanes purchased in the market where 65% is assumed reasonable than in the one where 55% is assumed reasonable, *ceteris paribus*. In the absence of any impetus to the contrary, the higher the past (acceptable) load factor, the lower the expected fare (in order to induce the appropriate number of bodies to fly) in the future, assuming similar demand patterns. This does not, as mentioned *supra*, specify anything about the expected rate of return in the absence of specific cost and demand figures or other possible explanations of differences in accept-

able load factors. Canadian data on load factors in shown below, along with U.S. comparisons:

TABLE 12

LOAD FACTORS					
Air Canada (North American Services)	Air Canada (All Services)	CP Air (Trans- Contin.)	CP Air (All Services)	U. S. Trunk (Domestic Services)	Year
68%	65.6%	72.4%	56.1%	55.3%	1966
68	64.8	71.6	56.4	58.7	1967
61	57.8	52.6	50.2	56.4	1968
60	57.1	55.6	50.1	52.5 ^a	1969
59	57.3	52.0	52.4	49.6 ^a	1970
58	54.9	55.8	54.6	49.2	1971
65	64.9	65.4	63.5	48.8	1972
68	66.7	65.7	62.7	52.3	1973
63	63.7	61.3	61.4	53.1	1974
63	61.4	61.4	56.4	52.9	Avg.

a U.S. figures include the operations of Pan Am after 1970. Since the operations of this carrier are principally international and since this sort of operation generates lower load factors, there may be some distortion downward. However, since Pan Am accounts for about 2-3% of the total movement, the downward bias will be very small.

Sources: Air Canada North American data from Mr. D.J. McIntyre, Air Canada and CP Air (All Services) data from Mr. Jan Bekooy, op. cit.
U.S. Trunks data from U.S. Civil Aeronautics Board, Handbook of Airline Statistics, (Washington, D.C.: U.S. Government Printing Office, 1974), Table 2, Part III.

Since the market shares are essentially decided by the 25% share of the market allocated to CP Air by official (Ministerial) policy, it is in the best interests of Air Canada to determine a set of available seat miles which would provide the maximum revenue. Unlike the counterpart in the U.S. markets where maximizing frequencies were competitive strategies necessary to maximize the firm's share of the market, this issue would work in reverse for Air Canada. The greater the number of flights and the greater the number of bodies it flew, the larger the number of bodies CP Air would be allowed to fly. Thus it is to be expected that Air Canada and CP Air would have higher domestic load factors than the U.S. carriers, and higher domestic than overall load factors (since the international world is not so neatly carved up between carriers). The figures bear this out. It should be noted that other things being equal, these numbers would lead to relatively lower Canadian domestic fares than U.S.

Finally it should be noted that during the final portion of the time period under study, the U.S. carriers were, with the presence and support of the CAB, engaged in capacity reduction talks aimed at reducing the level of excess capacity and driving up the load factors to a minimum of 55-60%. The figures which were considered optimum in Canada at that time were 60-65%,¹⁰² though it is not clear that there is difference in the perceived optima rather than in practicably achievable levels.

(c) Fare Structure.

As a result of the U.S. DPFI, a revised fare structure was to emerge designed to allow carriers a reasonable average return over costs but sufficient to allow for some price discrimination, in the form of special discount fares, and with a specified cost-determined surcharge on first class fares.

There are two issues involved in pricing a first class fare. The first class passenger occupies, in general, one and one-half times as much space as the coach passenger. In this sense, with fully occupied aircraft, the opportunity cost to the firm of providing one unit of first class service would be one and one-half times the value of a coach fare. However, it is not necessarily the case that for every two first class seats which are replaced, the airline will sell three additional coach seats. Some passengers who would have flown first class will not be willing to ride coach class, and some who did not consider it worthwhile to ride first class might now have their demand satisfied by additional coach service. However, it is not clear that these people come in appropriate proportions; the expected opportunity cost of these seats depends on the expected load factor on the replaced seats, assuming that the load factor remains what it was previously on the remainder of the plane. If, for example, the airline estimated that by replacing 10 first class seats with 15 coach seats it could sell 12 of those

coach seats where it had previously sold 9 of the first class seats, the income foregone by seat replacement would be less than indicated by the 150% space consideration.

In addition to the income side, the cost side must be considered. The concern of the airline, presumably, is with maximizing net revenue, subject to certain other considerations not relevant here. If a first class passenger causes the airline to incur 150% of the cost of a coach class passenger, *pari passu*, then a first class fare equal to 150% of the coach fare would be appropriate. Since there is no prescribed way to distribute the fixed¹⁰³ portion of this flight, it is reasonable to distribute the cost 'evenly'. The first class passenger occupies 150% of the space and replaces one and one-half coach passengers. Thus, it is, by one standard, fair to assign him 150% of the amount assigned to the coach passenger. However, it is not obvious that he will use one hundred and fifty percent of the amount of stewardesses, stewards, food, bathroom facilities, etc., of the average coach user. On the other hand, it may be that additional services, like those of free newspapers, may make up for the additional costs not used in proportion to space. In any case, it is not clear from the data on file that the airlines are publicly concerned with these calculations.

TABLE 13 TABLE 13

	To Jan. 1970	As of Jan. 1970	As of Aug. 1973	As of Feb. 1974	As of May 1975	As of July 1975	As of July 1976
AIR CANADA & CP AIR	135%	135%	135%	145%	150%	150%	150%
U.S. TRUNKS ^a		130% ^c					
0-349 miles	(no		137%	137%	137%	143%	150%
350-850	CAB		138%	138%	138%	147%	155%
850-1749	policy) ^b		140%	140%	140%	150%	160%
over 1750			141%	141%	141%	152%	163%

- a The breakdown over distances results from CAB cost analysis.
- b The CAB certainly monitored all rates including the ratio of first class to coach fare. However, the GPF I did not attempt to determine the appropriate fare structure and therefore did not determine an appropriate percent which as a matter of policy would be applied.
- c This percent was chosen as the interim maximum to be applied until the final hearing. It was continued as the administrative law judge, Judge Johnson, decided in April 1972, that this was the appropriate first class/coach fare structure. However, the Board decided, on the basis of its cost figures to reconsider this decision, specifying prescribed ratios as of August 1973.

Sources: Air Canada data provided by Mr. D.J. McIntyre, op. cit. CP Air figures provided by Mr. W.I. Bobye, op. cit. U.S. Trunk percentages and policy history obtained from U.S. C.A.B. Order no. 73-5-2 (May 1, 1973) p. 127.

Table 13 illustrates that in comparison with the U.S. numbers, the Canadian ratios were generally higher until the middle of 1975. Thus while it was argued in the U.S. hearings that the first class passengers were being subsidized by the coach classes,¹⁰⁴ this must generally have been less true in Canada, depending on the calculations used. If the final level of 150% is correct, (and since the average stage length of Air Canada is close to five hundred miles, the Canadian figure¹⁰⁵ seems not unreasonably small as compared with the U.S. final figure of 155%) then it can be argued that the first class fare is just a proportionately larger fare for proportionately more service and is not price discrimination.

There are other fares which are clearly discriminatory. These fares include all of the so called discount or promotional fares, of which there have been far fewer in Canada, than in the U.S. Table 14 shows which have existed during the period under study.

TABLE 14
Canadian Promotional and Discount Fares

Fare Category	Date of Change	5/68	10/68	8/70	3/71	10/72	4/73	2/74	7/74	10/74	5/7
		(percentages of one-way coach fares)									
Economy 14/28 day excursion ^a		n/a	n/a	150	150	n/a	n/a	n/a	n/a	n/a	n/a
8/30 day excursion ^a (>700 miles) (winter period only)		n/a	n/a	n/a	n/a	140	140	140	140	140	b
Y/W (Off Peak) (<700 miles)		n/a	n/a	n/a	n/a	70 ^c	70	70	70	70	n/a
Youth Standby		50	50	60	66 2/3	60	60	80	80	80	80
Senior Standby		n/a	50	60	66 2/3	66 2/3	n/a	n/a	n/a	n/a	n/a
Senior Confirmed		n/a	n/a	n/a	n/a	80	80	90	90	90	90
Night Economy ^d		n/a	n/a	n/a	n/a	80	80	80	80	80	80
Family Plans - spouse		75	75	75	75	75	75	75	75	75	75
- 1st dependent		66 2/3	66 2/3	66 2/3	66 2/3	66 2/3	66 2/3	83	83	83	83
Weekend		e	e	e	e	e	n/a	n/a	n/a	n/a	n/a
Children - under 2 years, no seat		free	free	free	free	free	free	free	free	free	free
- age 2-11 years		50	50	50	50	50	66 2/3	66 2/3	66 2/3	66 2/3	66 2/3

a Return only

b Not available to be filed during summer

c Not introduced by CP Air until 4/73

d Between Montreal and Toronto only

e Information not available. Supplied only by CP Air and discontinued when CP Air standardized fares with Air Canada.

Sources: Information supplied to the author by Mr. D.J. McIntyre, op. cit. (Air Canada) and by Mr. W.I. Bobye, op. cit. (CP Air).

Given that there are fewer promotional fares in Canada than in the United States, there is reason to believe the yield (return from the average passenger mile) will be less diluted, that is, will be relatively higher in Canada than in the U.S. for the same fare level. This will be true as long as the promos which exist in Canada are not offered at higher discounts than are those in the U.S., and are not used more frequently even though there are fewer of them. Since the conversion in 1972 of the pure excursion fare into the relatively lower-priced but specifically off-peak 8/30 day excursion fares, there have been very few Canadian promotional fares indeed. Those which remain, as can be seen from the chart, represent several which are arguable not discriminatory and several which are directly short-run demand-inducing. The first group includes the youth standby fare which clearly to some extent represent peaking fares, and which after February of 1974 when they were reduced to a 20% from a 40% discount were less likely to be good substitutes for full fares. Those which are arguably short-run as well as long-run demand-inducing fares include the family discounts and the children's (2-11) discount. In the latter case, it is particularly likely that families with younger children might not be able or willing to fly as a group at full fares, so that by selling two seats for a total of one and two-thirds fare, the actual reduction is close to the 17% family fare, which, like the senior fare is at least to a certain extent clearly discriminatory.

The CTC did not object publicly when these fares were introduced, nor when the two carriers agreed to standardize their forms of price discrimination. Therefore, the shifts in the latter parts of 1972 and the early months of 1973 which served to reduce the number of promos and to increase the percentage of full fare paid on those which remained, were at least approved if not encouraged by the CTC.

In the U.S., the DPFI (an investigation of considerable scope and expense) finally concluded with a decision to cancel all but short term clearly defined "discount" fares and to "do away with purely promotional fares" entirely.¹⁰⁶ The present existence of "Discover America" fares serves to demonstrate the success of the above mentioned expenditure. No such expense was borne by either the government or the airlines directly in Canada, and since no extraordinary hearings of any type were necessary, it is doubtful that such costs were introduced behind the scenes.

This discussion implies that one would expect to find Canada's basic coach fare level remaining lower than that of the U.S. carriers during the majority of the study period, at least in the absence of counteracting cost differences. Further, while there is no indication from the CTC that it had a positive preference for collusion on the part of the two carriers, there was certainly no overt objection to the two carriers' charging identical fares and having standardized dates and

programs. Since the market shares are defined, there is no obvious advantage to having heavily discounted, yield-diluting fares, not is there any obvious tactical advantage in one carrier offering either more or different discount fares from its competitor.

The final aspect of fare structure deals with the construction of the basic fare, that is the extent of the distance taper, if any.

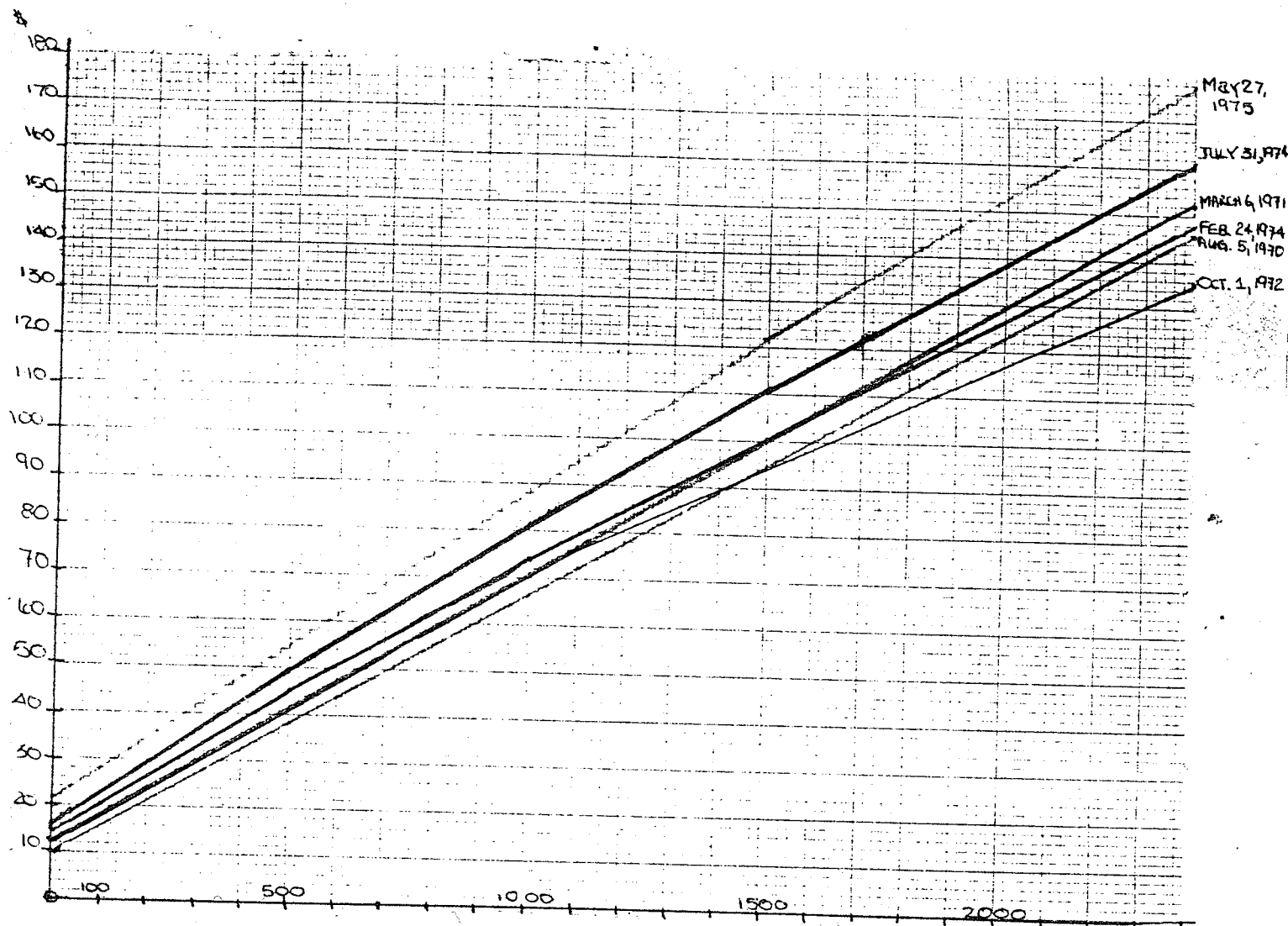
Figure 18 illustrates graphically the Canadian fare structures.

FIGURE XVIII

Canadian Fare Structure

See Page 465a

FIGURE XVIII



source: data provided by Mr. D.J. McIntyre *et al.*, and Mr. W.J. Boyce, *et al.*

A comparison of the Canadian with the equivalent U.S. fare structure will be found in the following chapter. However it is clear that since the introduction of the two part price structure in August of 1970 the cost of air transport in Canada has been directly related to distance. Further, there is some, though rather little, taper with increasing distance. A large part of the cost increases in the latter part of the study period were in "terminal" costs, those fixed with respect to distance.

Since the beginning of the terminal plus distance-related fare structure, there has been less than a twenty percent increase in the distance-related cost component, and the majority of increases which did occur were a result of fuel price rises. That the CTC authorized these pricing structures, and that they were presented to the CTC as reflecting a cost-related pricing structure suggest that the CTC did not find anything particularly amiss with these numbers, as they were approved without obvious delay.

(2) PRODUCT POLICY

The product policy within the air transport market deals with such variables as (i) the seating mix, (ii) the number of (frequency of) flights offered between points A and B, and (iii) the type of planes used.

(i) In the U.S. market, it must be remembered, the fare structure for the first class versus coach class seats was drastically altered during the period under discussion. The increases in fares aggravated an existing problem of large overcapacity in the first class section of the plane.¹⁰⁷ In the Canadian market, the CTC has potentially got the power to regulate all of the above dimensions. In all cases it is not clear, since the public data does not demonstrate concern with it directly, whether the CTC instigated or approved after the fact the current usages of the planes, the seating arrangements and the frequencies. However, in the case at hand, there appear to be far fewer seats devoted to first class use in Canadian planes than in the U.S. case. The percent of first class to total seating space varies, depending on the type of plane, as shown in the Table 13.

PERCENTAGE OF FIRST CLASS SEATS PER PLANE								
1011	DC-9	DC-9	DC-8	DC-8	DC-8L	B-727	B-747	Type of Plane
	(Short)		(C/Y)	(STD)				
8	0	12	0	12	12	0	32	No. of 1st class
25	75	78	111	117	186	144	326	No. of coach
5.7%	0%	16%	0	11%	7.5%	0	9.9%	% of space used by first class

Source: Information provided by Mr. D.J. McIntyre, op. cit.

The percent depends on which planes are used and to what extent in the transcontinental market, a question which will be explored in the final chapter.

(ii) The number of or frequency of flights offered is subject to the CTC's control and is specified in the licence. When CP Air wanted in order to enhance its positioning and cut costs, to alter the frequency between certain points, the matter went to the Minister. More particularly, CP Air did not want to be bound by the restriction that it must originate all flights in Vancouver and terminate all flights in Montreal.¹⁰⁸ Insofar as this restriction applied, and given the 25% rule, there was no question of flexibility in terms of frequency except for the smaller intermediate markets of Calgary-Edmonton, Regina and Winnipeg. While the ATC was originally willing to allow the change to no specified termination or end point, when Air Canada objected that this constituted a change in policy rather than an application of policy, the CTC agreed and left the matter to the MOT. A year later, a policy statement came down from the Minister which allowed CP Air to terminate flights either at Toronto or Montreal, at least in part because this change might help the development of RapidAir, an Air Canada local service subsidiary. Clearly the CTC is concerned with such matters, but it is, again, not publicly obvious the degree to which it merely accepts any reasonable frequencies from the parties involved, given its (and the airlines) estimates of future traffic in these markets, or whether it initiates and guides potential changes.

(iii) Finally, the CTC has to approve the planes which are going to be used in any market. As in the previous case, the limits on size and type of plane to be used on each route will be specified in the licence. As long as there is no evidence that any of the stated policies will be violated, there is no evidence that the CTC does more than formally approve any potential changes. It is not clear that it has no indirect influence.

(3) SALES PROMOTION POLICY

In the U.S. case, there was concern with two aspects of sales promotion during the study period: the provision of "extras", and the level of advertising. In Canada, there was essentially no concern about the first question, except as has been previously mentioned. There was substantial concern at the Parliamentary Standing Committee level about the latter expenditures on the part of Air Canada. There were some problems of determining the appropriate level of comparisons,¹⁰⁹ particularly given that the "sales and promotion" accounts which are used by Air Canada included such expenses as aircraft and traffic handling. However, in 1972 as a percent of revenue, Air Canada spent 14.4% on sales and promotion; American 11%; CP Air 19%; Pan Am 15%; and TWA 12%.¹¹⁰ As another form of comparison, the amount spent on advertising and publicity was 2.17% of the operating costs of Air Canada and 2.23% of the U.S. carriers' operating costs on average.¹¹¹ A rather larger

relative amount was spent by Air Canada on the wages of passenger agents and reservations agents than by the U.S. carriers, but Air Canada's representative argued that this was due to the number of small stations which were maintained by Air Canada.¹¹² The fact that the appropriate comparisons were readily given for the cases of Air Canada and the U.S. carriers and for CP Air indicates concern on the part of Air Canada with the level of such expenditures. Given that monitoring is done with regard to U.S. carrier practices expenditures (such as the load-factor adjusted fare calculations) which keep these levels lower than they might otherwise be, there is an impetus for Air Canada to do the same.

Finally, it should be noted that the ATC requires Air Canada and CP Air to submit annual reports on the levels of sales and promotion. The figures must be reported in a specific manner so that they may be compared with each other. As such it must be assumed that the ATC is concerned with the level of such expenditures as well as regularly aware of them. It is not clear that the levels of these figures have been "approved" by the CTC, but if they were substantially out of line with CTC goals, and if there were concurrently a request for a fare increase on the basis of increased costs, it must be considered that the CTC could at least potentially refuse to allow the fare increase.

(4) COORDINATION AND CROSS ADAPTATION OF SALES
AND PRODUCT POLICIES

There is, as in the comparable case in the U.S., no proof of direct coordination and cross adaptation of sales and promotional techniques. Unlike the U.S., it was not long-standing practice for the two carriers to jointly approach the CTC with a request for a fare change, nor was there until 1973 standardization between the two carriers on such issues as fare type and period of application. In addition, since the CTC has not felt forced to involve itself in any of the sort of promotional schemes for the industry as a whole, there is no historic tendency for the regulator to encourage joint applications. Finally, unlike the case in the U.S. where the CAB feels more urgency to make information at least appear to be public, and where any issues which might bear on the other carriers apparently must be decided only after all potentially affected carriers have been notified and given time to make their comments, the CTC appears far more reluctant to pass information about one carrier's applications to the other.¹¹³ Needless to say, with only two mainline carriers, it is somewhat harder to conceal strategies and outcomes; yet the spirit of direct competition may encourage the desire to do so, and the lack of specific encouragement of cooperation and coordination by the CTC may make such competition more likely.

(5) THE LEVEL OF R and D EXPENDITURES

As in the U.S. industry, Canadian air carriers have not been active in direct research or in the development of new capital. Whether this is purely a matter of tradition or whether it was viewed as an uneconomic form of vertical integration, it has not been developed into the structure of either CP Air or Air Canada. The CTC has power to concern itself with such developments but they simply have not arisen.

The second aspect of the research and development issue is that of the usage or lack thereof of new types of technology. In this case, there was some activity on the part of the House of Commons Standing Committee in regard to the purchase of new planes and the replacement and sale of older planes.¹¹⁴ Two issues were raised. The first of these was the purchase of 747's and 727's, some of which were to serve new demand (which was not materializing as expected), and some of which were to replace DC-8's and DC-9's which were being shifted into the Maritimes to replace the Vikings. The second of the concerns was the replacement and potential sale of "perfectly good Vikings". The argument used by Air Canada in the second case was that Maritime demand had grown and the DC-9 could fly faster and thus serve the demand more effectively, and the DC-8 could expand it even further.¹¹⁵ Additionally, it was explained that the Vikings had been essentially written off so that almost any positive selling price would be to the good.¹¹⁶ In the

former case, then, the purchases would be necessary to a certain extent for replacement but, in addition, and as the major justification, they had been ordered when it was expected that demand would increase.¹¹⁷ The House Committee would clearly not have been receptive to an argument based on the usage of similar planes on similar routes by U.S. carriers.

But while the above mentioned line of argument might not sway a House Committee concerned with domestic service, it is unlikely that Air Canada and CP Air could compete internationally with greatly "inferior" equipment. Since the CTC must approve, and change the licence accordingly, any change in equipment, it must be assumed that the new purchases must have been approved or the carrier must have had reason to assume they would be approved.

(6) UNFAIR COMPETITION

There has been no mention of unfair competitive tactics in the Canadian air transport industry. It is clear, however, that the airlines they are subject to the Combines Act insofar as issues of misleading advertising, etc. There has been no indication that the CTC felt that there was any evidence of unfair tactics.

FOOTNOTES

1. CTC General Order, SOR 72-145, Sections 27, 35, 39.
2. CTC General Order, SOR 73-698, Section 1.
3. CTC General Order, SOR 74-295, Section 1.
4. CTC General Order, SOR 73-26, Section 43.1.
5. CTC General Order, SOR 73-728, Section 21.
6. Mainline fares have always consisted of a base charge plus a mileage charge, with exceptions to "equalize development" as in the Calgary/Edmonton case and minor discrepancies due to rounding. The change would require an alteration of general air policy, which is the role of MOT rather than the CTC. (See the section below dealing with fares and the roles of CTC and MOT).
7. CTC General Order, SOR 72-145, Section 17(4).
8. ATC Order No. 1971-A-359, issued in response to a request by CP Air to provide Class 4 service from Vancouver, specified these conditions.
9. See M.L. Kliman, "The Setting of Domestic Air Fares: A Review of the 1975 Hearings", Canadian Public Policy, Vol. III, No. 2 (Spring, 1977) pp. 186-198. Hearings on the May, 1975 fare increase were the first to be held in public, although the Consumers' Association of Canada had expressed the desire to present a brief at earlier hearings.
10. Rajani, S., "Comparison of the Growth of U.S. and Canadian Air Travel", CTC Research Publications Report 58 (December, 1972) p. 13.
11. Rajani, Ibid.
12. ATC Order No. 1971-A-359, p.2.
13. CTC General Order 72-145, Section 8(6).
14. Ibid., Section 44(2).
15. Ibid., Sections 59-61.

16. Ibid, p.1.
17. Ibid., Section 18(g).
18. Ibid., Section 18(c).
19. Testimony by Y. Pratte of Air Canada before the House of Commons Standing Committee on Transportation and Communications, 29/1, 22:31.
20. Ibid.
21. See "Statement on Air Policy", issued by the Minister of Transport, Hon. Jean Marchand, Nov. 23, 1973, p.1.
22. Ibid., p. 2.
23. According to Y. Pratte in testimony before the House Standing Committee, 29th Session, 1st Sitting, 21:79 Air Canada's costs per available ton-mile were \$4.08; CP Air's \$5.45, both lower than those of U.S. carriers.
24. "Statement on Air Policy", op. cit., p.3.
25. All scheduled mainline carriage by Air Canada and CP Air is priced on this basis.
26. See the Policy Statement of October 20, 1966 and "Statement of Aviation Policy Principles" by Transport Minister Don Jamieson, August 15, 1969.
27. Comments by Mr. Pickersgill before the House Standing Committee 4/3/71 (pp. 3-16).
28. c.f. the statements by Mr. Baldwin to the House Standing Committee 21/5/68, p. 2228 and Mr. Pratte before that committee 29/11/73. It is clear from their remarks that Air Canada that the pattern of average cost pricing enunciated by Mr. McGregor before the Committee in 1967 (11/4/67, p. 3073) continued throughout the period.
29. In August, 1976, Air Canada announced that due to declining load factors in first class, that service would be dropped on a number of runs.
30. "Statement on Air Policy", op. cit., p.2.
31. "Statement of Aviation Policy Principles", op. cit., p.1.

32. According to Y. Pratte, Air Canada's meals are slightly lower in cost than CP Air's. (Testimony before the House Standing Committee, 29th Parliament, 1st Session, 21:57). Mr. Baldwin noted that Air Canada's meal costs were, in addition, slightly more expensive than CP Air's (Ibid., p. 83).
33. Purdy, H.L. Transport Competition and Public Policy in Canada, (Vancouver: University of British Columbia Press, 1972) p. 288-9.
34. For charter flights, one might expect to find no significant differences in aircraft used.
35. Sobieniak, J.W., "Forecasts of Passenger Travel in Canada's Domestic Long-Haul Air Market", CTC Research Publications Report No. 44, (Ottawa: July, 1972).
36. Purdy, op. cit., p. 41.
37. Ibid., p. 41.
38. The expansion of transcontinental as a fraction of total operations is a particularly striking characteristic.
39. The same would hold true with U-shaped cost curves. This shape was assumed to represent the cost of expanding the number of planes to serve larger numbers of passengers within the sub markets.
40. "Statement on Air Policy", op. cit., p.2-3.
41. This is one of the main conclusions of the second Wheatcroft report, a report which is classified and which was inaccessible to the present author. That this was one of the report's conclusions was revealed in J.W. Pickersgill's "Statement of Aviation Policy Principles", op. cit., p.1.
42. "Statement of Aviation Policy Principles", Ibid., p. 1.
43. ATC Decision No. 3566, March 23, 1973, p. 2.
44. Ibid., p. 3.
45. Ibid., p. 28.
46. Ibid., pp. 26-28.
47. See the Hon. Jean Marchand's "Statement on Air Policy", op. cit. for the new division of international routes between Air Canada and CP Air.

48. ATC Decision No. 2592, July 1, 1968 gives CTC approval of these additional domestic operations for CP Air.
49. "Statement on Air Policy", op. cit.
50. Air Canada's transcontinental operations figures were unavailable.
51. See, for example, ATC Decision No. 3566, March 23, 1973, pp. 12-13, in which CP Air opposed Air Canada's purchase of Wardair shares, as evidence of CP Air's wish to protect its competitive position and, by inference, to expand.
52. ATC Decision No. 3225, August 10, 1971, passim, as a review of CTC Order No. 1970-A-23, January 9, 1970.
53. Marchand, Hon. J., "Statement on the Change in Transcontinental Route Policy for CP Air", MOT, February 14, 1974.
54. Ibid.
55. Ibid.
56. See Mr. Baldwin's comments before the House Committee, 29th Parliament, 1st Session, 21:83.
57. See Mr. Hellyer's comments before the House Committee, 28th Parliament, 1st Session, April 22, 1969.
58. Comments by Mr. Pickersgill before the House Committee, 28th Parliament, 3rd Session, 3:30.
59. Testimony by Mr. Pickersgill before the House Committee, 28th Parliament, 2nd Session, 18:90.
60. The author first noticed the absence of newspapers on a Toronto-Winnipeg return flight in early 1975, and was informed by the stewardess that it was a 'cost-cutting measure'.
61. Y. Pratte's testimony before the House Standing Committee, May 22, 1968, p. 281.
62. Baldwin's statment before the House Committee, 29th Parliament, 1st Session, 21:61.
63. c.f. Mr. McGregor's testimony before the House Committee, April 11, 1967.
64. Y. Pratte, op. cit., 21:63.

65. Ibid.
66. This similarity is due principally to the fact that both Air Canada and CP Air are IATA members.
67. Y. Pratte, Ibid.
68. Ibid.
69. An increase in fares for all mileage blocks was instituted three months later on February 24, 1974 and a further increase took effect on July 21, 1974.
70. See Y. Pratte's comments, op. cit., 22:20.
71. Ibid., 21:25.
72. This created difficulties at the time when the expected slowing of growth took place later than expected. See Y. Pratte, Ibid. 21:6.
73. c.f. comments by Mr. Cochrane before the House Committee, 29th Parliament, 1st Session, 28:76.
74. Remarks by Y. Pratte, op. cit., 21:6.
75. ATC Decision No. 2913, January 29, 1970.
76. Baldwin, testimony before the House Committee, 29th Parliament, 1st Session, 24:9.
77. Ibid.
78. Baldwin, op. cit., 22:119.
79. Pratte, op. cit., 22:115.
80. Baldwin, op. cit., 24:9.
81. Ibid.
82. On April 29, 1973 CP Air standardized its fare "types and periods" with those of Air Canada (Letter from Mr. W.I. Bobye, op. cit., p. 3., giving history of fare changes).
83. See material on fares, particularly Phase 7 and Phase 9 of the DPFI, loc. cit.

84. See CTC Order No. 1970-A-23 (January 9, 1970) and ATC Decision No. 3026 (August 12, 1970) for Air Canada's complaints about ignorance of the proceedings.
85. See the discussion, supra, Chapter 8 in regard to openness toward buyers, and USCA 1373 and 1324(d) with reference to public information.
86. This was precisely Air Canada's argument in re CTC Order No. 1970-A-23, and the latter response was that chosen by the Air Transport Committee in Decision No. 3026.
87. c.f. J.W. Sobieniak, op. cit.
88. c.f. ATC Decision No. 2913, p. 6 for references to "subsequently agreed if..."
89. Certainly a profit-seeking (loss-minimizing) crown carrier might be able to operate, given government loan guarantees, where a private carrier would not, simply because a private carrier would generally be unable to obtain such loans in the absence of a market sufficiently developed to support at least one carrier.
90. Marchand, "Statement on Air Policy", op. cit.
91. Pickersgill, "Statement of Aviation Policy Principles", op. cit.
92. Supra., n. 51.
93. Two major considerations bear on this loss. First, Air Canada's high debt-equity ratio insures that losses remain highly visible. Second, both CP Air and many U.S. carriers experienced losses over the same period due at least in part to capacity expansion resulting from overestimates of future demand growth. See J.R. Baldwin, The Regulatory Agency and the Public Corporation, (Cambridge, Mass.: Ballinger Press, 1975) p. 98.
94. This conclusion is drawn from remarks by Yves Pratte before the House Committee, 29th Parliament, 1st Session, in which he argued that fares are established without cross-subsidization, and that costs are the same for all passengers. It was admitted, however, that the averaging of costs across customers and allocation on the basis of distance does result in some inter-route cross-subsidization. The fare structure had not altered significantly since 1970, and First Class service had remained at a constant percentage of Economy fare, leading to a belief that a policy of average cost pricing had been pursued. In addition, Air Canada, in its application for a fare increase in the summer of 1975,

- spoke of "developing a passenger fare structure for Canada under which a reasonable relationship would exist between fares and cost", (p.2) including terminal and distance-related charges.
95. Air Canada Intra-Canada Fare History, obtained from Mr. D.J. McIntyre, Assistant Director, Accounting Reports and Policies.
 96. Baldwin, The Regulatory Agency, op. cit., p. 97.
 97. See Table 19, Profits, Interest Charges and Income.
 98. Information provided by Mr. Jan Bekooy, Head, Civil Aviation, Aviation Statistics Centre, Statistics Canada in a letter of June 20, 1975.
 99. Baldwin, op. cit., pp. 94-6.
 100. See Table 21, Rate of Return, Canadian and U.S. Domestic Carriers.
 101. c.f. Y. Pratte's testimony, op. cit., 22:31.
 102. See discussion before the House Standing Committee, 29th Parliament, 1st Session, 22:125.
 103. Such costs include landing and take-off costs which do not vary with revenue passenger miles on a particular flight. For certain purposes, of course, such cost would quite properly be included in the variable cost component.
 104. c.f. CAB Docket No. 21866-9, CAB Order 74/3/82, p. 125.
 105. See comments by Y. Pratte, op. cit., 21:78.
 106. The Civil Aeronautics Board began the major Domestic Passenger Fare Investigation in 1970 (CAB Order 70/1/147). The recommendations on discount fares were promulgated in CAB Order 74/3/82.
 107. CAB Order 74/3/82, p. 126.
 108. CTC Order No. 1970-A-23 and ATC Decision No. 3026.
 109. See testimony by Y. Pratte, op. cit., 22:103.
 110. Testimony by Mr. Cochrane (VP Finance, Air Canada) before the House Standing Committee, 29th Parliament, 1st Session, 24:21.
 111. Testimony by Y. Pratte, op. cit., 22:103.

112. Testimony by Y. Pratte, op. cit., 24:22.
113. ATC Decision No. 3026 (Review of CTC Order No. 1970-A-23)
August 12, 1970.
114. Particularly during the 29th Parliament, 1st Session.
115. Baldwin, testimony, op. cit., 22:43.
116. Cochrane, testimony, op. cit., 28:90.
117. Jamieson, testimony before the House Standing Committee, 28th
Parliament, 3rd Session, 1:29.

PART IV

EXPECTED PERFORMANCE DIFFERENCES

Part I of this thesis developed the theoretical underpinnings for an analysis of the Canadian and U.S. air transport regulatory structures. The next two parts dealt with the potential for, and actual types of, action on the parts of the various regulatory agencies in these countries.

Part IV will dwell on determining the expected differences in actions of the various firms under consideration, and the degree to which these expected differences have materialized.

In Chapter Ten, the first consideration will be the performance goals of the Canadian CTC-MOT and the counterpart United States CAB-DOT agencies. The actual performances of the two regulated industries will then be examined to determine the degree to which there are significant differences between them in consequence of regulatory intervention.

The final chapter will consist of a short summary, a few remarks on the strengths and limitations of the methodology utilized, and the implications of this study for future regulatory constraint of the Canadian air transport industry.

CHAPTER TEN

PERFORMANCE CRITERIA AND INDUSTRY PERFORMANCE

THE CTC VERSUS THE CAB: REGULATORY GOALS

The pervasive concern of the CTC is the application of day-to-day regulatory policy. In testimony before the House Standing Committee on Transport and Communications, Canadian Transport Commission President E.M. Benson noted that:

(The CTC) does not make transportation policy, but it is its duty to administer the policy...it is responsible not to the Minister of Transport or to the government per se (but) to Parliament.¹

(The) Canadian Transport Commission is a court of record and basically responsible not for setting policy in transportation but for administering the policy as laid down in the various Acts...²

Referring to Table V-III, the above can be seen to be consistent with the Rationalist ideology, Civil service bias, and would appear an adequate description of the role of the CTC as it operates to regulate

the Canadian air transport industry subject to the National Transportation Act, the Aeronautics Act, and the current Minister. This will not account for any particular performance goals which have been specified by the Minister; these "major" policy goals can be deduced from the public announcements of the Ministers.

The CAB, unlike the CTC, is not an agency which is part of the legislative function of government. It is a quasi-judicial agency, separate to a considerable degree from any other arm of the government. While it is responsible to Congress in that it reports ultimately to them and is financed by them, its judgment is held to be quasi-judicial. More importantly, it does not maintain the link to the executive branch which is represented by the Minister of Transport in the Canadian case. Potentially any "major" policy change must occur from, and as act of, Congress, albeit perhaps on advice from the Department of Transport; however, the CAB does not have to request, and has not in the recent past requested, the opinion of or direction from, the Secretary of Transportation regarding such decisions as those made in the DPFI. It would be inconceivable for the CTC to allow the implementation of minimum load factors for rate-making purposes without some discussion as to the Minister's point of view. In fact, it seems rather more likely that the Minister would be called on to decide whether or not such requirements would be placed upon the carriers. Thus the CAB, while taking account of the goals specified in the legislation, can be viewed as

basically Idealist in structure. It must, of course, defend its independence of action. Further it is concerned that the industry which it regulates have neither too much power over its decisions not too little credibility as a successfully regulated industry to continue in the present, regulated structure. Thus the CAB most closely resembles the Idealist (monopoly/oligopoly) of Table 3.

For the purposes of this analysis, we are concerned with the differences in the performance goals which result from legal and institutional differences in the two agencies, some of which have been noted in previous chapters. The remainder of the goals can be deduced from the major differences which occur as a matter of law or practice (given the rights and the approach of the regulatory boards) between the two agencies. These differences are listed below:

(1) Developmental Versus Adequacy Objectives: It has been noted that the U.S. Civil Aeronautics Board has a developmental responsibility; the CTC is expected to insure that service is adequate, particularly through the auspices of the crown carrier. This dichotomy leads to several performance differences. Under the developmental impetus, there was CAB encouragement for such tactics as discount fare pricing designed both to utilize excess capacity and to increase the (future) demand for the product. The CTC, lacking this impetus, therefore could be expected to

encourage or to approve relatively fewer discount fares, and thus, *ceteris paribus*, to generate lower standard (coach) fares.

(2) Frequency Control: The CTC has control over the frequency of the flight by each carrier both directly and indirectly. The CAB has frequency control only insofar as it can refuse to consider the expenses so generated as legitimate, or through other such indirect tactics as load factor standards. Thus one would expect a lower frequency in the Canadian market, higher load factors, lower costs per passenger mile on those costs which are fixed, and so on.

(3) Open Versus Closed: The U.S. CAB is an open agency, which holds itself directly responsible for ascertaining and enforcing the public interest. The CTC has a set of goals (regulation to produce the most economical, efficient, and adequate, industry possible) interpreted by the Minister. As such, the CTC has, for the purposes of the policy maker, whoever that may be (depending on the magnitude of the decision), a large research staff to provide data, analyze it, and present it to the relevant decision maker. However, it is not directly subject to the public scrutiny except as a matter of conscious choice. As such, if people are concerned, they can and would be expected to defend itself and its purported representation of the public interest, and hence it is to be expected that the CAB will ensure that its decision at least appear to be "fair".

(4) Flag Carrier: The individual U.S. trunks tend to be allocated route structures which are either principally domestic (especially under the 50 state designation) or principally overseas. In the Canadian case, the carriers serve both domestic and international routes. Thus, it would be expected that in years of rapid international expansion, Canadian carriers would do better, *ceteris paribus*, than U.S. carriers serving domestic routes, but in years of poor international service, Canadian carriers would do worse.

(5) Use of the Crown Carrier: Since there is a Canadian Crown carrier, various regulatory difficulties can be avoided. For example, the Crown, by serving all points also served domestically by the private carrier, can, if it desires or if the regulatory structures are so designed, act as a price regulator. Thus the difficulties inherent in determining the price which will guarantee the average carrier the minimum rate of return as defined by the regulatory Board on the basis of a reasonable rate base becomes unnecessary. Not only would there be no need to determine each of these variables; there would, in addition, be no incentive for carriers to generate substantial overcapacity to maximize profits.³

Further, since the Crown carrier might be expected to break even --substantial profits or substantial losses generating political pressure on the Minister--and must therefore serve some profitable routes (that is, earn normal or even slightly above normal profits

on the competitive, profit-making sections of the route) it can be assigned "duty" roles. This will fulfill both this goal of providing adequate service where none would otherwise be provided, the most elementary of developmental duties. Otherwise, there would have to be some sort of subsidization to guarantee carrier entry, either in direct form or through such diverse and complex methods as allocation of mail revenues (on the basis of need, for example) or the promise of lucrative submarkets if the carrier will serve another less lucrative market on the way. The further advantage that the Canadian CTC has is that it can work out not only the promise to serve, but specify in the licence the definition of 'adequate' in the form of a frequency of service. In addition, the existence of the Crown carrier allows the Crown's representative, for example the Minister of Transport, to make use of the carrier for other goals such as the hiring of minority status individuals.

DIFFERENCES IN INDUSTRY PERFORMANCE

Having discussed the major differences in the Canadian and U.S. regulatory institutions, it remains necessary to deduce and list the differences in performance of the two industries which would be expected to result. These are considered below, on the basis of the expected differences in those performance goals which were specified in Table 1.

TABLE 13

PERFORMANCE EMPHASIS DERIVED IN CANADA AND THE U.S. : DIFFERENCES		
PERFORMANCE CHARACTERISTIC	DEGREE OF CONCERN	
	CANADA-CTC	U.S.-CAB
Size of profit, P-AC	medium	high
Price relative to MC	high	low
Sales promotion expenditure level	low	medium-high
New techniques	high	medium-high
Quality of product	high-medium	low
Uncosted externalities	low	low
Factor market distortions	low-medium	medium-high
Macro considerations	medium-high	low
Other exogenous considerations	high	low

Source: Table 3, Chapter V, the "Rationalist-civil servant bias" and the "Idealist-monopoly/oligopoly"

These differences in emphasis, listed above as those which would be expected to result from the pure form of the given regulatory institutions, differ slightly in practice. For example, while the concern

with the price level relative to the marginal cost curve might be hypothetically high in the case of the CTC, it is difficult to apply the concept of the marginal cost curve on the basis of the data which is available. Since this is the case, certain proxy variables will be considered to represent the efficient output level in the discussion which follows. Given the information above and the discussion in the previous four chapters on the Canadian and U.S. theory and practice of regulatory constraints, the following differences would be expected in the performance of the two industries:

(1) Price Levels (Fares)

As mentioned above, there is a difference in expected emphasis in regard to the level and types of fares in the Canadian and U.S. markets. The basic concern of the U.S. regulatory Board is expected to be the level of profits of the industry. Insofar as the Board seeks to regulate a natural oligopoly in its perceptions of the public interest, its concern would rest on minimization of monopoly profits. As such, it would be expected that the carriers would be allowed to vary prices and profit levels fairly freely as long as the carriers do not generate industry profits which deviate from some specified maximum (traditionally a return of eight percent on capital, twelve after the DPFI). The Canadian regulatory structure, however, has authorized average cost pricing as a means of reflecting the true cost of service to the public.

It would thus be expected that Canadian rates would be relatively lower than those in the United States if the opportunity cost of capital were included in the cost curve (that is, as far as economic profit is concerned). However, since the market is divided in terms of the share which each of the two Canadian carriers can serve in the domestic sector, price changes, either through different fares or different fare structures, are less likely to hold any competitive interest for the two Canadian carriers. Therefore, it would seem likely that in the absence of frequent and substantial cost changes, the Canadian fare structure and level will change less rapidly than the U.S. carriers.

(2) Level of the Cost Curves

The Canadian regulatory body has not shown a great deal of concern with the level of any particular segment of the cost curves. However, Parliament has shown, during the period under consideration, a great deal of concern with the level of certain of Air Canada's expenditures. Insofar as there is some public body directly concerned that the level of these costs it seems likely that they would not be obviously in excess of achievable levels. Since the Canadian carriers, further, are average-cost-pricing, the CTC would be expected to be monitoring the level of the expenditures so that the carriers would not be able to "pad" these costs. Additionally, it is not clear that the CTC is, or has been, overly concerned with the carriers in terms of their profit-

maximizing success. The CTC has not, that is, been overwhelmingly concerned that the Canadian carriers might make excess profits--which if the firms behave as true average cost pricers, is hardly surprising. Finally, since the mainline carriers also serve as transborder operators, it is likely that the level of the cost curves, were they to be unreasonable, would make it impossible for these Canadian carriers to compete in the U.S. sector of their operations.

(3) Other Characteristics

Although reliable qualitative data is not available on the remaining characteristics, each will be considered in terms of the limited information which does exist.

(a) New Techniques: Since the CTC has control over the frequency and the type of plane used by the carriers, it is to be expected that there would be slower introduction of new, larger planes, in Canada than in the United States unless the market were sufficiently well developed to allow them, or unless they resulted in decreases in the cost of operation. Air Canada does consider itself a profit-seeker, and along with CP Air is likely therefore to be willing to add to its fleet if profit can thereby be increased, whatever the influence may be on average cost levels. However, it is less likely within the Canadian setting that new types of aircraft will be introduced purely on the

grounds of 'bigger and better' product differentiation. As such, while the new techniques which exist will be imported into Canada, the lower flight frequencies and the factors mentioned above make it likely that they will appear at a slower rate, *ceteris paribus*, than in the U.S. It is further likely that the higher cost of capital in Canada, combined with similar Canada-U.S. wage rates and implying a lower wage-rental ratio, has tended to encourage a lower capital-labour ratio, for example in the form of maintaining older, more fully depreciated planes rather than introducing new aircraft.

(b) Product Quality: The quality of the product in any service industry is always somewhat elusive. Certainly in the case of air transport, the creation of time and space utility can be said to be of superior quality insofar as, for instance, it occurs in less time than in the case of an alternative, occurs more comfortably, occurs with less loss and damage to persons or property, and so on. But while these factors are at least in principle amenable to quantitative analysis, there is no public record of consumer complaints to the CTC as in the case with the U.S. CAB, so that there cannot be direct comparison of the problems which consumers find with the quality of service.

(c) Macro Considerations: Concern over macroeconomic elements including the level of price inflation and levels of employment are, again, not directly evident from the evidence which exists, and, while it might

be expected that the CTC would take an interest in such matters particularly insofar as the Crown carrier is concerned, there is no direct evidence of this fact. The Minister of Transport, as the maker of policy and representative of the Government and the Queen, might be a more likely source of such policy considerations.

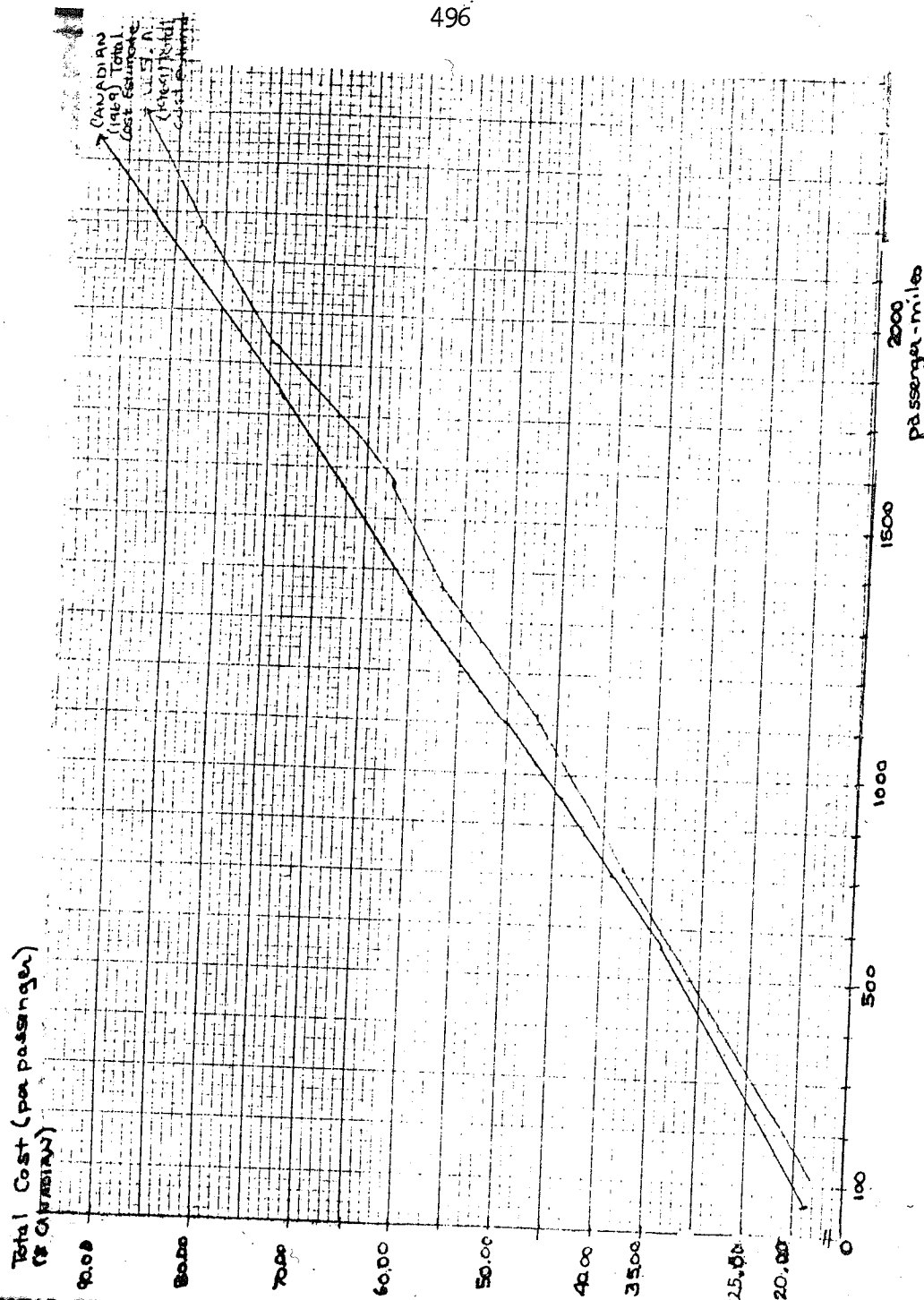
(d) Other Exogenous Considerations in Canada during the period of study included the traditionally unprofitable service to regions such as the Maritimes, and the development of Air Canada as a leader in the field of corporate bilingualism. The U.S. carriers were not concerned with these sorts of considerations at this or any other time.

Remembering the thrust of the thesis, it is expected that there will be observable differences in the performance of the two industries induced by the actions of the regulators. Insofar as the regulatory authorities are successful in altering in any fashion the conduct of the industries over which they have jurisdiction, the performance of these industries should show differences. The magnitude of these differences is considered below.

(1) Price Levels (Fares)

The first area of expected performance differences between the Canadian and the U.S. mainline air transport industries lies in the

area of prices. In the absence of the promotional impetus in the Canadian regulatory setting, it would be expected that there would be fewer promotional fares, and therefore, *ceteris paribus* lower coach fares. In the face of historically approved average-cost-pricing techniques, it would be expected that the Canadian industry would be making no more than a normal rate of return over time and thus, insofar as the cost curves in the Canadian industry are not higher than those in the U.S., the price level for the Canadian product should be lower than that in the U.S. Inspection of the cost data shown in Figure 19 (below) suggests that there is no reason to believe that U.S. and Canadian total cost curves differed substantially in 1969, at the beginning of the study period. However, when converted to a common currency, the U.S. costs were about 7% lower than the Canadian ones.



TOTAL COSTS; CANADA AND THE UNITED STATES MAINLINE AIR CARRIERS

- Sources:
- Baldwin, J. R. The Regulatory Agency and the Public Corporation, op. cit., p. 204 (cost method 1) (1.12) to allow for 1969 versus 1966 costs.
 - U. S. CAB, Order 74-5-80, Appendix 1, Column 1 x column 2.
 - Canada, Department of Finance, Economic Review, May, 1977.

In at least one study of the U.S. air transport industry, the long run marginal cost curve is estimated to be upward sloping.⁴ This suggests that the average cost pricer as compared with a profit maximizer will always set a lower fare, *ceteris paribus*. Further, there is much less evidence of cross-subsidiation across fare classes (i.e. first class or discount fares are less common in Canada).⁵

The expectations, therefore, are that the Canadian fares for comparable routes will be found to have been roughly the same or lower than the U.S. fares at least until early 1973, when the U.S. Civil Aeronautics Board "rationalized" the airlines' fare structures and encouraged fewer discount fares, higher first class fares and exit of excess (but costly) capacity in the form of "excessive" frequency of operations.⁶

Fare Levels: While Canadian fares were discussed in some detail in the preceding chapter, the U.S. fare structure was not compared with the Canadian at that point. Table 14 provides such a comparison. The figures are hypothetical fares constructed from the fare structures current in each time period. It should be noted that in both the U.S. and Canadian cases, due to historic fare anomalies,⁷ certain of these rates may have been slightly lower in practice. Finally, these are coach fares, and do not reflect any possible discounts obtainable in either market. That is, these are the "homogeneous prices" for air transport over differing distances in the Canadian market, using Canadian and U.S. fare formulae, respectively.

TABLE 14

HYPOTHETICAL FARE LEVEL COMPARISONS^a
(\$ Canadian)

City Pair (distance)	1967		1968		1969		1970		1971		1972		1973		1974		1975	
	C	US	C	US	C	US	C	US	C	US	C	US	C	US	C	US	C	US
Ottawa-Montl (94)	13	13.39	13	13.65	13	16.55	15	17	17	17	17	18	17	19	24.15	20	29.40	24
Ottawa-Quebec (229)	20	21.09	21	23.10	21	25.71	23	26	25	27	25	29	25	29	33.60	31	38.85	35
Wpg-Regina (330)	26	28.69	27	29.40	27	32.56	29	33	31	34	31	35	31	37	39.90	39	45.15	44
Calgary-Vict (452)	33	36.59	35	36.75	35	40.83	36	41	38	42	38	43	38	46	49.35	49	54.60	54
Torto-St Johns (686)	45	51.76	49	52.50	49	55.87	49	46	52	58	52	59	52	63	64.05	68	70.35	70
Wpg-Edmntn (738)	48	55.13	52	55.65	52	59.16	52	60	55	61	55	63	55	66	68.25	72	74.55	74
Wpg-Toronto (934)	59	67.84	64	67.20	64	71.57	63	72	66	74	66	76	66	80	80.85	87	88.20	87
Wpg-Van (1158)	71	82.36	78	81.90	78	85.37	79	86	79	88	79	90	79	96	94.50	103	103.95	101
Regina-Ottwa (1379)	83	96.68	91	95.55	91	98.36	89	99	92	101	90	104	90	110	109	119	119	116
Halifax-Wpg (1600)	95	111.00	105	110.25	105	111.13	101	112	105	114	101	117	101	124	122	134	133	130
Van-Toronto (2078)	121	135.22	134	140.70	134	137.66	128	139	133	142	122	146	122	154	148	167	162	160
Van-Ottawa (2207)	128	150.35	142	149.10	142	144.66	136	146	140	149	128	153	128	161	156	175	170	168
Edmntn-St Johns (2626)	151	177.51	168	176.40	168	175.38	160	168	164	173	147	177	147	187	179	203	196	194
Van-St Johns	178	209.27	197	207.90	197	194.01	188	195	193	200	169	200	169	216	207	235	226	225

Sources: a. Fares include all transportation taxes, are as of 31 December for each year and are constructed, i.e., hypothetical fares, for U.S.

(1) Canada, Department of Finance, Economic Review, "Indexes of Exchange Rates", April, various years.

(2) Information on various Canadian fares changes and formulae provided by Messrs. D.J. McIntyre (Air Canada) and W.L. Bobye (CP Air) in personal correspondence dated 7 Aug. 1975 and 15 July, 1975, respectively.

(3) U.S. C.A.B., Orders 73-3-46 (March 14, 1973); 73-5-10 (3 May 1973); 73-11-93 (20 Nov. 1973); 74-3-96 (20 March 1974); 74-9-82 (23 Sept. 1974); 74-11-62 (14 Nov. 1974); 74-12-109 (27 Dec. 1974).

(4) CAR Press Release, 75-87 (24 April, 1975).

The relevant fares for comparison purposes have been taken to include (federal) transportation taxes, and were converted into a common (Canadian) currency. As expected, the Canadian coach fares as calculated from the relevant formulae were generally lower than those obtained from the relevant U.S. fare formulae until 1974, when Canadian short haul fares exceeded those in the U.S., the sole exception being the 1969 fares on distances greater than 3,000 miles. This exception is not surprising when one considers that at this point in time, Canadian fares were still linear with respect to distance; that is, there was no fare taper. In the United States fare formula, however, such a taper did exist; thus it is reasonable to find that the fares equalize at some point. In 1975 with the substantial \$5 increase in the "terminal charge", the Canadian fares finally exceeded the U.S. fares at all distances. While for very short distances, the Canadian fares were over 10% greater than U.S. fares, the differences for distances over 300 miles on were under 3%. Since this difference could be accounted for (in the case of a thousand mile flight) by a change in the 1975 exchange rate (price of \$Canadian in \$U.S.) from .986 to 1.016, the significance of the price differential is questionable.

One point which remains, however, is that fares in both countries were increasing during the period of study. This increase was more pronounced during the latter part of the study. This is also an unsurprising result. By the end of the period, both fare formulae were obtained on

some cost-plus basis, and in both countries there was substantial inflation. In Canada, the change in wholesale prices (fully and chiefly manufactured goods), and in labour compensation per unit of output in service industries, are shown below. (The airlines' cost curves are dealt with at greater length in a subsequent section).

TABLE 15

PERCENT CHANGES IN PRICES AND COSTS: CANADA									
Indicator/Year	1967	1968	1969	1970	1971	1972	1973	1974	1975
Wholesale prices (fully and chiefly manufactured goods)	2.0	2.7	4.7	1.2	3.6	7.3	15.2	19.7	10.1
	6.0				47.9				
Labour Compensations per unit of output	5.4	2.2	6.3	5.1	4.0	6.3	6.0	11.3	13.5
	11.7				25.4				

SOURCES:

Department of Finance, Economic Review: May, 1976, Reference

Table 51, "Changes in Other Price Indexes", p. 164; and Reference Table 40, "Productivity and Costs, Commercial Service-Producing Industries", p. 170.

Given these sorts of price and cost increases facing the airlines, it would seem reasonable to expect that periodic fare increases would have been requested. They were, and they were granted by the regulators in both the U.S. and the Canadian markets. Since the fare structures were not always straight lines with respect to distances, there were different changes depending on the distance. Referring to Table 14 the fare changes can be observed. Taking some of the selected city pairs, the comparable Canadian and U.S. percent changes in fares can be calculated:

TABLE 16

Percentage Increases in Fare Levels, Selected City Pairs

City-pair/Year (Mileage)	1968		1969		1970		1971		1972		1973		1974		1975	
	C	US	C	US	C	US	C	US	C	US	C	US	C	US	C	US
Ottawa-Quebec (229)	5.0	1.9	0	11.3	9.5	1.1	8.7	3.8	0	7.4	0	0	34.4	6.9	15.6	12.9
Calgary-Victoria (452)	6.1	9.5	0	11.1	2.9	4.2	5.6	2.4	0	2.4	0	7.0	29.9	6.5	10.6	10.2
Wpg-Edmtn (730)	8.3	0.9	0	6.3	0	1.4	5.8	1.7	0	3.3	0	4.8	24.1	9.1	9.2	2.8
Wpg-Vancvr (1158)	9.9	0.6	0	4.2	1.3	.7	0	2.3	0	2.3	0	6.7	19.6	7.3	10	-1.9
Van-Toronto (2078)	10.7	4.1	0	-2.1	-4.5	1.0	3.9	2.2	-8.3	2.8	0	5.5	21.3	8.4	9.5	4.2
Van-St Johns (3115)	10.7	- .7	0	-6.7	-4.6	.5	2.7	2.6	-12.4	0	0	8	22.5	8.8	9.2	4.3

In attempting to compare the above fare changes with the changes in prices and costs, two difficulties must be noted. First, the U.S. fare data, while converted to Canadian currency, remains related to the U.S. economic experiences. During this time period, the Canadian and U.S. consumer prices indices moved fairly closely together. While the annual price increases in Canada in 1967 slightly exceeded those in the U.S., they were up to 2% lower in the period between early 1968 and late 1971. From that period until the end of 1974 when the two countries once again had approximately equal percentage increases, the U.S. rate was below that of Canada by about one percent much of the time. When comparing the U.S. fare change data to the indicators, therefore, we might expect these fare changes to be biased upward until about 1971, then downward. While both indicators were positive, much of the change in fare structure in the U.S. was an increase only in the short-haul market, or more strongly in this market than in the long-haul. As such, comparisons are fairly difficult, and specific comparisons almost impossible.

Second, when comparing the Canadian fare changes with the indicators, some allowance ought to be made for the fact that the Canadian fares changed in only five out of the eight years. In order to render a comparison more simple, the numbers in the lower part of each row of Table refer to the percentage change in the indicator over the time period during which the Canadian fares were changed only once. That is,

since the Canadian fares were changed less frequently than the U.S. fares, in order to get the same increase, they would have to be changed by larger amounts. When this adjustment is carried out, the increases of 1974 do not appear to be as drastic as they might otherwise seem. In fact, they appear to be quite in line with the expected increases of a cost-plus pricer, insofar as these indicators represent the actual increases of the cost levels of the carriers.

Price Levels (Fare Structures)

It was argued that there were more discount fares in the U.S. than in Canada, and that the first class fares were lower in the U.S. than in Canada relative to the coach fare. That is, it was argued that considerable cross-subsidization occurred from the coach class to other usages.

Two main pieces of evidence support this contention. The first, examined in some detail in Chapters VIII and IX, involves examination of the number of discount offerings and the relative ease of using these alternative discount fares in the U.S. as compared with Canada. A second method evaluating these fares involves looking at the yield obtained by various carriers and the two industries as a whole. Since U.S. fares are (in the coach class) slightly higher than Canadian (in equivalent currencies) United States yields should be higher, ceteris

paribus. However, insofar as discount and other sub-normal fares exist, some passengers will be paying lower prices, and therefore, the yield should fall. It is somewhat risky to compare overall yields, of course, since passengers flying on long-haul trips in the case of a tapered fare structure will pay proportionately less than short-haul traffic. Insofar as these tapers existed in the U.S. but not in Canada, and given that they were the rule rather than the exception, then with similar traffic patterns the yield in the U.S. as compared with that in Canada should be less. Table 17 shows the comparative yields of CP Air, Air Canada, the Canadian industry and the U.S. domestic operations of the domestic trunks. (All figures are calculated in Canadian dollars and correspond to the revenue obtained from passengers per passenger mile).

TABLE 17

Yield From Passenger Operations, Canada and U.S. (cents per rpm)				
Year	Air Canada	CP Air	Canadian Total	U.S. Domestic Trunks
1967	5.66	5.39	5.60	4.83
1968	5.84	5.38	5.74	4.87
1969	5.80	5.38	5.69	4.89
1970	5.42	4.65	5.21	5.31
1971	5.85	4.90	5.59	5.85
1972	5.87	4.88	5.39	6.03
1973	5.50	4.96	5.38	n/a
1974	6.52	5.94	6.37	n/a
1975	7.22	6.29	6.95	n/a

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967-1969
 (Catalogue No. 51-202), Tables 3, 4 and 5.
 Statistics Canada, Air Carrier Operations, 1970-1975
 (Catalogue No. 51-002), Table 1.
 Statistics Canada, Air Carrier Financial Statements, 1970-
 1975 (Catalogue No. 51-206), Table 2.
 U.S. Civil Aeronautics Board, 1973 Handbook of Airline
 Statistics, (U.S. Government Printing Office: Washington,
 1974) Part IV, Table 4 and Part III, Table 4.

The U.S. figures are further biased by the fact that they deal only with yields in the domestic market. Ideally, were similar Canadian data available, comparisons would be made with yields in the domestic markets in Canada. It can be seen that the yields in Canada in the initial period were higher than those in the United States. This situation alters drastically in 1970, after which Canadian yields dropped drastically and the U.S. carriers' yields kept increasing. From then on through the available data, Canadian yields remained lower than the U.S. industry average. During this (it is worth noting that Air Canada's yield was at least as high as the U.S. industry average until 1972). Since U.S. data from 1973 onward are unavailable, it is uncertain whether this trend continues, particularly past 1974 when Air Canada's yield increased substantially. More importantly, the most obvious explanation for the significantly lower yield of CP Air (since domestic fares were identical to those of Air Canada) is its substantially higher share of operation overseas. This data indicates that the yield on international operations is substantially lower than that on domestic operations. Thus the Canadian yields, on balance, ought to

be lower than the U.S. due to the higher fares in the U.S. and the fact that the U.S. data is domestic rather than all services. In fact, it is not lower in all periods, and only in one year did the U.S. carriers' yield exceed that of Air Canada, an indication that the U.S. yield was being diluted by some other factor; this dilution resulted from the common discount fares and the relatively lower first class fares.

Fares: Summary

During the time period of this study, two significant differences appeared between the Canadian and U.S. fares for air transport. First, Canadian fares were, until the very end of the study period, lower than those in the U.S., a result which would seem surprising since there is no indication that costs are generally lower in Canada than in the United States. Secondly, there is evidence that the reason for this is the much more common use of discount fares and lower (relative) first class fares in the United States than in Canada. Whether or not there were sufficiently large numbers of these discount fares to lower the yield of the carriers in the United States to less than those in Canada depended on the time period. The effects of these differential yields on the relative rates of return of the U.S. and Canadian carriers remains to be examined.

(3) Rates of Return and Profitability

One comparison of the performance of the two industries which gives some indication of the relative policies of the two regulatory boards is the level of profits. In the U.S. airline industry, for reasons best known to the CAB, rate of return calculations include a series of allowable expense manipulations which are impossible to duplicate.⁸ A comparative profit, interest and net income table is shown below, however, based on the assumption of operating expense comparability.

Since Air Canada is an average cost pricer, and since CP Air in general charges identical fares, one might expect, other things being equal, similar profitability. There are however, substantial differences in the cost levels which would be expected in the two carriers; these differences will be dealt with later in this chapter. Nevertheless, the net income figures of the two carriers follow remarkably similar paths. From 1969 onward they rise and fall at the same times, for example. (So, for that matter, do those of the U.S. carriers). A more interesting comparison, however, is not the absolute level of any of these expenditures, but their level relative to the financial structure and size of the carriers and to their markets. Table 19, below, shows the comparative levels of equity, long term debt, reserves, and deferred taxes of the two Canadian carriers and of the (system) U.S. trunk carriers. With aid of these two tables, it is possible to construct a table of annual rates of return in the two industries.

TABLE 18

PROITS, INTEREST CHARGES, AND NET INCOME: 1967-1975

Year	Air Canada (\$ C 000)			CP Air (\$ C 000)			U.S. Domestic Trunks (\$ U.S. 000)		
	Profits ^a	Int.Chg.	Net Y ^b	Profits	Int.Chg.	Net Y	Profit	Int.Chg.	Net Y
1967	20,955	13,857	3,547	7,488	1,763	3,395	758,548	120,974	411,633
1968	34,611	18,247	8,184	8,669	3,766	2,375	587,906	177,262	262,076
1969	28,338	25,246	1,548	11,623	3,690	3,495	462,648	215,712	147,310
1970	29,776	31,920	-1,702	8,478	6,415	1,003	90,657	244,324	-100,839
1971	34,723	31,861	1,662	10,955	6,715	2,140	325,832	270,488	325,832
1972	49,703	32,487	8,648	15,335	5,664	5,161	524,612	258,327	180,295
1973	51,966	39,948	6,123	15,160	6,961	4,199	601,949*	299,330*	183,185*
1974	40,477	59,136	-9,225	16,589	11,785	2,441	886,499*	363,123*	311,599*
1975	41,585	65,445	-12,473	3,101	15,636	-6,399	n/a	n/a	n/a

* Figures calculated for the previous 12 months from the current September.

a profit=net income before Tax plus interest expense

b net income is after taxes and interest expenses

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967-1969 (Catalogue No. 51-202) Queen's Printer, Hull. Table 4.

Statistics Canada, Air Carrier Financial Statements, 1970-1972; 1974-1975 (Catalogue No. 51-206) Information Canada, Ottawa. Table 2.

Statistics Canada, Air Carrier Operations in Canada, 1973 (Catalogue No. 51-002) Information Canada, Ottawa. Table 3.

U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, Part IV, Table 4.

U.S. Civil Aeronautics Board, Air Carrier Financial Statistics, September 1974, Table 1.

TABLE 19

CAPITAL STRUCTURE, Air Canada, CP Air & U.S. Trunks: 1967-1975

Year	(System) Air Canada (\$C 000)				(System) CP Air (\$C 000)				(System) U.S. Trunks (\$U.S. 000, 000)			
	E	LTD	R	DT	E	LTD	R	DT	E	LTD	R	DT
1967	16, 631	302, 820	6, 249	6, 460	23, 497	-	368	1, 692	2, 942	4, 191	23	625
1968	24, 614	392, 820	6, 249	14, 040	24, 288	12, 362	4, 822	1, 654	3, 122	5, 266	27	772
1969	32, 725	467, 602	-	15, 885	26, 356	69, 988	8, 513	2, 191	3, 288	5, 433	32	890
1970	37, 689	547, 602	-	19, 816	33, 170	76, 209	9, 610	1, 181	3, 008	6, 120	42	920
1971	39, 152	631, 602	-	21, 020	33, 877	78, 164	11, 710	1, 016	3, 585	5, 684	49	874
1972	47, 599	640, 114	-	28, 502	36, 888	74, 052	14, 470	655	3, 984	5, 647	50	913
1973*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3, 812	5, 134	49	967
1974*	44, 097	893, 519	-	29, 646	29, 218	149, 401	20, 911	1, 069	4, 060	4, 968	52	1, 203
1975	31, 425	1, 011, 430	-	16, 711	21, 740	168, 295	14, 775	1, 277	n/a	n/a	n/a	n/a

E refers to equity calculated as the capital stock subscribed (common and preferred) plus unissued capital stock plus other paid in earnings plus unappropriated earnings plus unappropriated surplus.

LTD refers to long-term debt which includes notes and debentures including borrowing from associated companies.

R refers to the sum of all reserves other than DT.

DT refers to deferred taxes.

* Data for 1973 and 1974 in the U.S. industry are not annual data but refer to the periods Oct. 1972-Sept. 1973 and Oct. 1973-Sept. 1974, respectively.

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967, 1968 and 1969 (Catalogue No. 51-202) Queen's Printer, Hull. Table 11. Statistics Canada, Air Carrier Financial Statements, 1970-1972 and 1974-1975, (Catalogue No. 51-206) Table 4. U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office; Washington, D.C.) Part V, Table 2. U.S. Civil Aeronautics Board, Air Carrier Financial Statistics, Sept. 1974 (U.S. Government Printing Office; Washington, D.C.) Table 2.

TABLE 20
RATE-OF-RETURN; CANADIAN AND U.S. DOMESTIC CARRIERS;
AND LONG-TERM BOND RATE

Year	Air ^a Canada	Air Canada ^b	CP Air	XCanadian System	Canadian Long-Term Bond Rate	U.S. Long-Term Bond Rate	U.S. Trunks (Systems)
1967	5.2	6.43	31.0	8.18	5.96	4.85	9.78
1968	6.3	8.01	22.6	9.24	6.75	5.26	6.42
1969	4.8	5.49	11.7	6.49	7.68	6.12	4.84
1970	4.5	4.93	7.7	5.35	7.91	6.58	0.90
1971	4.6	5.01	9.69	5.68	6.95	5.74	3.21
1972	5.7	6.94	13.74	7.86	7.23	5.63	4.96
1973	5.8	n/a	n/a	n/a	7.56	6.30	6.07
1974	5.0	4.18	9.23	4.97	8.90	6.99	8.66
1975	5.1	3.92	1.62	3.57	9.04	n/a	n/a

a These figures are the calculations of Air Canada and do not correspond to those computed by the author. The difference lies in the denominator, where Air Canada uses a weighted average of long-term liabilities over time.

b Calculated, as are all of the other Rates-of-Return, as:

$$\text{Rate-of-Return} = \frac{\text{Net Income} + \text{interest expense (=profit) before tax}}{\text{Equity} + \text{long-term debt} + \text{deferred income taxes}}$$

* The figures for the U.S. data in the years 1973 and 1974 are not annual data, but correspond to the data for Oct. 1972-Sept. 1973 and Oct. 1973-Sept. 1974, respectively.

SOURCES:

Air Canada, Annual Report, 1976.
Dominion Bureau of Statistics, Civil Aviation, 1967, 1968 and 1969 (Catalogue No. 51-202) Queen's Printer, Hull. Tables 3, 4, 10 and 11.
Statistics Canada, Air Carrier Financial Statements, 1970-1972 and 1974-1975 (Catalogue No. 51-206) Information Canada, Ottawa. Tables 1, 2, 3, and 4.
U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics (U.S. Government Printing Office, Washington, D.C.) 1974, Part IV, Table 4 and Part V, Table 2.
U.S. Civil Aeronautics Board, Air Carrier Financial Statistics, Sept. 1974 (U.S. Government Printing Office, Washington, D.C.) Tables 1 and 2.
International Monetary Fund, International Financial Statistics, Vol. XXIV, No. 1 and Vol. XXVIII, No. 2, Canada Long Term Bond rate and U.S. Long Term Bond Rate (E. Hicks, Washington, D.C.)

The first thing which is apparent from Table 20 is that the U.S. interest rate, as proxied by the long-term bond rate, is uniformly lower than the Canadian. If the rate of return which is appropriate (and which incidentally must be earned in order to pay interest on borrowed funds and to return at least a corresponding rate to the shareholders) is the government long-term bond rate, then one would expect the Canadian carriers, particularly Air Canada as an average cost pricer, to attempt to obtain a rate-of-return which is fairly close to this rate.

Since the pricing structure in the U.S., on the other hand, was not uniformly related to costs, one might expect a less closely related rate-of-return to the U.S. bond rate. Looking at Table 20, this is clearly shown to be the case.

The average Canadian long-term bond rate during the eight years we have system rate-of-return data is 7.56 percent. During the eight years for which there is U.S. data, the long-term bond rate is only 5.93 percent; that is, a difference of 1.63 percentage points. If both Canadian and U.S. carriers were long-term, zero profit obtainers, and if the long-term bond rate is accepted as the appropriate rate-of-return highly unlikely except for the crown carrier as a "public instrument")⁹, then one would expect the Canadian carriers' rate-of-

return to be 1.63 percentage points higher during this time period. During the eight years for which we have rate-of-return data for the U.S., the average rate-of-return is 5.61, slightly lower than the long-term bond rate average. In the Canadian system, for the eight years for which there is data, the average rate-of-return is 6.42%, slightly below the long-term Canadian bond rate. The difference between the rates-of-return in the two systems of .81 percentage points is, therefore, at least partially attributable to the differential cost of borrowed funds.

The U.S. carriers' actual rate-of-return falls far below the appropriate rate-of-return, as determined in the decisions of the DPFI, "...of 12%, based on a cost of debt of 6.2% and a cost of equity of 16.75% [and given an] optimum capital structure of 45 percent debt and 55 percent equity".¹⁰ It is by no means clear in precisely what sense this is the optimal debt equity structure however. If this difference in the cost of obtaining the two types of capital is expected to persist, *ceteris paribus*, in the long run one would expect that the air carriers would substantially increase the ratio of debt to equity capital until the long run (expected) costs of borrowing are equal. It is reasonable to expect the cost of debt capital to increase as the ratio of equity to debt decreases, so the "optimal" in this sense is probably some rate between the two, perhaps as high as 12%, but no higher (or it would not be "optimal" in the later sense of the minimum

cost of obtaining capital). In any case, the average 1967-74 rate-of-return of 5.61 in the U.S. is below the cost of borrowing debt and suggests future contraction of the industry. In fact, this optimum rate-of-return was specified in 1971 and in the years following the disastrous 1969-72 period the U.S. rate-of-return has increased.

The Canadian system, while having a less variable rate-of-return, as might be expected in either a duopoly-cartel or any milder mutual consent market-sharing situation, has been facing a declining rate-of-return situation. Again this would suggest future contraction (or slower expansion in response to demand increases) of the air carriers involved. Unlike the situation in the U.S., the rate-of-return in the Canadian system did not increase during the last few years examined.

Finally, while the Canadian system had a higher apparent average rate-of-return than its U.S. counterpart, it is instructive to standardize the figures in terms of the respective bond rates. During the seven years (1967-1972 and 1974) for which comparative figures are available, the long-term bond rates and rates-of-return were as shown in Table 21.

TABLE 21

COSTS OF BORROWING AND RATES-OF-RETURN: CANADA AND THE UNITED STATES			
	Canada	U. S.	Canada-U. S.
Long-term bond rate (mean, 1967-72, 1974)	7.34	5.88	1.46
Rate-of-return (mean, 1967-72, 1974)	6.82	5.54	1.28
Ltb-Rr	.52	.34	.18

SOURCE:

Calculated from figures in Table 20.

While there was a shortfall between the bond rate and the rate-of-return, the differential was smaller in the United States than in Canada. That is, the Canadian rate-of-return was relatively (to the cost of borrowing) lower than that in the U.S. on average, although it is not clear that the amount of that difference is significant.

In summary it can be said that, given the present structure of capital purchases in both industries, the profit rate has been higher

in absolute in Canada than in the U.S., but has been lower relative to the cost of borrowing.

Finally, neither of the air carrier industries generated high rates-of-return on capital during the period under study. This is not surprising in the Canadian case where the use of the "chosen instrument" to operate in unprofitable market areas would be expected to hold the rate-of-return of the crown carrier (in total) down to some standard such as the bond rate,¹¹ but is somewhat surprising in the United States case. It is, perhaps, merely substantiation of the Miller and Douglas thesis¹² that frequency will be increased on competitive routes to the break-even point, and, if so, should pass with the DPFI's load-factor-restricted-pricing.¹³

(4) Operating Costs

Several aspects of the performances of the two industries can be grouped under the heading of operating costs. These include: (i) the level of the average cost curve; (ii) the level of selling and promotional costs; (iii) the level of administrative costs; and (iv) the level of equipment costs.

(i) The Level of the Average Cost of Operations

If the industries are efficient, then they must be operating on the lowest possible long-run average cost curve. Since the purpose of this thesis is to effect a comparison of two specific alternative regulatory institutions rather than to construct a hypothetical model of an optimum industry, there will be no attempt here to construct the minimum possible long-run cost curves. The relevant question is: how do the levels of average cost compare in the two regulated industries? Figure XIX (supra) shows a comparison of the total cost over distance in the U.S. and Canadian industries. The United States cost curve is based on data calculated by the CAB. The Canadian data consists of calculations by Baldwin,¹⁴ by 12%, the the percentage increase in the CPI transportation index from 1966 to 1969.¹⁵ This index was chosen for several reasons. Insofar as the transport industries (particularly the regulated ones, which account for much of the series weighting) are cost-plus pricers, increases in this industry correspond to increases in the actual average costs. Secondly, during the same time period, the increase in the wholesale price index of manufactured goods was 9.6%,¹⁶ while the increase in the level of labour compensation per unit of output in the service industries was 15.6%.¹⁷ Since at least 50% of the cost of operations for air carriers is labour,¹⁸ the assumed increase of 12% similarly seems not unreasonable on this basis.

While Figure XIX shows Canadian costs in 1969 to be higher than those in the United States industry, the difference amounts to only

about seven percent, and it is clear that the distance-cost schedules, at least, are quite similar.

To gain insight into the changes in the levels of operating costs during the time period under study, consider Table 22.

Year	Air Canada		CP Air		Canadian Industry		U.S. Trunks	
	¢/ASM ^a	¢/P-M ^b	¢/ASM	¢/P-M	¢/ASM	¢/P-M	¢/ASM	¢/P-M
1967	4.09	6.31	3.65	6.48				
1968	3.70	6.40	3.02	6.01	3.99	6.35	2.99	5.23
1969	3.84	6.73	3.09	6.16	3.53	6.31	2.85	5.37
1970	3.93	6.85	3.16	6.04	3.63	6.58	2.83	5.62
1971	4.10	7.47	3.37	6.17	3.71	6.63	3.08	6.25
1972	4.42	6.89	3.68	5.79	3.90	7.11	3.19	6.60
1973	4.53	6.79	3.79	6.05	4.23	6.54	3.46	6.60
1974	5.05	7.93	4.12	6.72	4.35	6.62	3.42 ^c	n/a
1975	5.27	9.08	4.59	7.74	4.79	7.60	3.50 ^c	n/a
					5.07	8.68	n/a	n/a

a c/ASM refers to the level of operating expenses per available seat mile in c Canadian.

b c/P-M refers to the level of operating expenses per passenger mile sold in c Canadian.

c Figures for 1973 and 1974 cover the twelve month periods from October 1972-September 1973 and October 1973-September 1974, respectively.

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967-1969 (Catalogue No. 51-202) Queen's Printer; Hull. Tables 3, 4 and 5. Statistics Canada, Air Carrier Financial Statements, 1970-1972 and 1974-1975 (Catalogue No. 51-206) Information Canada; Ottawa. Table 2.

Statistics Canada, Air Carrier Operations in Canada, 1970-1975 (Catalogue No. 51-002) Information Canada; Ottawa. Tables 1 and 4. U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office, Washington, D.C.) Part IV, Table 4 and Part III, Table 4.

It is clearly the case that, if operating expenses accurately reflect the appropriate cost curves, the costs of operations in Canada and the United States rose significantly during the study period. Between 1969, when the data presented in Figure XIX suggests that U.S. costs were slightly below Canadian costs, and 1972, for instance, Canadian operating expenses increased 39% while U.S. operating expenses only increased 33%. It would be expected that the Canadian carriers as average cost pricers, would be increasing the fare level by more than the U.S. carriers, as did indeed happen during that period. While U.S. data is not available, Canadian costs increased 112% from the 1969 level by 1974. It should be noted that this discussion is based only on operating, not on interest, expenses. The fact that Air Canada had such a large debt-to-equity ratio in a time of increasing interest rates suggests that, *ceteris paribus*, the total cost of the Canadian air carriers would have increased even more rapidly than the U.S. carriers, if interest rates rose at the same rate in both countries. Thus by the end of the time period, it seems reasonable to argue that the level of the average cost curve in Canada was significantly higher than that of the U.S. carriers.

(ii) The Level of Selling and Promotional Costs

In the case of the industry which is price regulated, it is expected that there will be more non-price competition than in an

unregulated industry, other things being equal, simply because the carriers cannot compete on a price basis. It is hypothesized that there will be relatively less of this sort of advertising expenditure in Canadian than in United States' mainline air transport since the Canadian market shares are set. While additional advertising might for instance, increase the use of the CP Air's available seats, it would also, because of the constraint on CP Air's share of the market, have to increase the operations of Air Canada for there to be a significant increase in the potential operations of the former. Table X-12 provides a comparison of some of the measures of promotional expenses for the various carriers and industries.

The statistics presented above at first sight clearly appear to contradict the original hypothesis. First, the Canadian industry spends a considerably larger amount on promotional and selling expenses than does the U.S. industry. Second, the private carrier spends more than does Air Canada. To a large extent, however, these figures (albeit the best available) are misleading. In fact, although consistent data is not available, there is evidence that Air Canada spends less on advertising than do the U.S. carriers.¹⁹ First, promotional (advertising) expenses are lumped in with the costs of selling; the latter includes both the salaries of the people who work at the airport ticket desks and commissions paid to the various travel agencies.²⁰ As such, while Canadian carriers may spend less on advertising there

TABLE 23
PROMOTIONAL AND SELLING EXPENSES

Year	Air Canada		CP Air		Canadian Industry		U.S. Domestic Trunks	
	%Pass. Rev. ^a	c/P-M ^b	%Pass. Rev.	c/P-M	%Pass. Rev.	c/P-M	%Pass. Rev.	c/P-M
1967	18.1	1.02	24.8	1.34	19.5	1.09	12.9	.66
1968	17.2	1.01	24.9	1.34	18.9	1.08	13.0	.66
1969	19.0	1.10	24.5	1.32	20.4	1.16	13.1	.68
1970	19.5	1.05	23.6	1.10	20.4	1.07	13.2	.73
1971	18.4	1.08	23.6	1.16	19.61	1.10	12.5	.76
1972	17.7	.99	23.1	1.13	18.94	1.02	12.6	.79
1973 ^c	16.6	.91	24.3	1.21	18.20	.98	12.6	.79
1974 ^c	15.6	1.02	20.6	1.22	16.87	1.07	12.2	.88
1975	15.4	1.11	21.2	1.34	16.9	1.18	n/a	n/a

- a % pass rev is the annual operating expenses classified as promotional and selling expenses, divided by the level of passenger revenue that year.
- b c/p-m is the level of the above-mentioned selling expenses over the number of passenger miles operated by the firm (or industry) (in c Canadian)
- c U.S. Domestic Trunks data corresponds to the periods Oct. 1972-Sept. 1973 and Oct. 1973-Sept. 1974, respectively.

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967-1969 (Catalogue No. 51-202) Queen's Printer; Hull. Tables 3, 4 and 5.

Statistics Canada, Air Carrier Financial Statements, 1971-1975 (Catalogue No. 51-206) Information Canada; Ottawa. Table 2.

Statistics Canada, Air Carrier Operations in Canada, 1971-1975 (Catalogue No. 51-002) Information Canada; Ottawa. Table 4.

U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office; Washington, D.C.) Part III, Table 4 and Part IV, Table 4.

U.S. Civil Aeronautics Board, Air Carrier Financial Statistics, Sept. 1974 (U.S. Government Printing Office; Washington, D.C.) Table 1.

is no way to know for certain that this is typically the case. The second difficulty with this data is clarified by the statistics shown in Table 24.

TABLE 24
DENSITY CHARACTERISTICS FOR VARIOUS CARRIERS
(1969)

Miles per Route Mile	Air Can.	CP Air	Amer.	Brani.	Delta	Eastern	Nat'l	Pan Am	TWA	United
	749	272	13,908	3,938	8,592	8,948	11,849	663	1,242	21,031

SOURCE:

Baldwin, John R., The Regulatory Agency and the Public Corporation, Ballinger Publishing Company (Cambridge, Massachusetts; 1975) p. 214.

The lower the number of miles flown per route-mile, the lower the density of the run. Since there are a certain number of stations which must be served, and since for each flight there are a certain minimum number of employees who can handle the passengers arriving a few minutes before take-off, (without causing passenger ire to increase to the point where it is more expensive than providing the extra personnel), there is a lower limit on relevant employees and thus on this cost to the carriers. The Canadian carriers operated at a substantial disadvantage in this respect. The only one of the major United States carriers to experience such a low density route structure is Pan Am, and it is closer in density to Air Canada than to CP Air. Pan American, operating almost entirely as an overseas service, for 1969, incurred costs of sales promotion and selling equal to 23.04% of passenger revenue,

higher than Air Canada but lower than CP Air. Pan American's expenditure in c (Canadian) per passenger mile was 1.09, slightly above the Canadian system figure, below CP Air's and above Air Canada's.²¹ This data thus suggests that there may be substantial economies of scale in this area of the cost structure which mask any other effects.

Similar problems may be indicated for any of the cost comparisons which include a minimum number of employees per station, rather than per unit distance. This would also suggest that the fixed element, or the so-called terminal charge portion of the fare, might be expected to be higher in Canada than in the United States. In fact this has been seen, in the fare comparison section, to be the case.

A second aspect of non-price competition is the level of passenger service provided by the carriers. Again, in the absence of indications to the contrary, the Canadian carriers might be expected to have lower costs than United States carriers in this area. On the other hand it should be noted that Canadian carriers provide fewer promotional fares such as "no-frills" service, and therefore might be expected to have, on average, a higher level of passenger service expenditure. In addition, both Air Canada and CP Air carry passengers across the borders and compete on a service basis with the U.S. carriers. Finally, there is substantial evidence that Air Canada desires to be thought of as a 'top notch' service carrier.²² Thus

on balance, depending on the existence of or lack of any economies of scale in such areas, we might expect the Canadian level of such costs to be as high as or higher than those of the U.S. carriers. Table 25, below, shows that the latter is the case. Air Canada's costs are shown to be very similar to those of CP Air, and appear to have been closer to U.S. trunk domestic figures on an expenditure per passenger-mile basis during the latter part of the period under investigation.

TABLE 25
PASSENGER SERVICE EXPENSES

Year	Air Canada		CP Air		Canadian Industry		U.S. Domestic Trunks	
	¢/P-M ^a	% P.R. ^b	¢/P-M	% P.R.	¢/P-M	% P.R.	¢/P-M	% P.R.
1967	.61	10.8	.65	11.8	.62	11.0	.52	9.0
1968	.65	11.1	.67	12.5	.65	11.3	.56	9.8
1969	.72	12.8	.74	14.2	.73	12.9	.58	9.9
1970	.71	13.1	.68	14.7	.70	13.5	.65	10.5
1971	.78	13.3	.68	14.0	.75	13.4	.69	10.2
1972	.77	13.9	.68	14.0	.75	13.9	.74	10.6
1973 ^c	.80	14.6	.72	14.6	.78	14.6	.76	12.1
1974 ^c	.86	13.2	.84	14.2	.85	13.4	.79	11.0
1975	.93	12.8	.92	14.7	.93	13.3	n/a	n/a

a c/p-m refers to the cost of passenger services per passenger mile sold and is in c Canadian.

b % P.R. refers to the cost of passenger services as a percent of passenger revenues.

c U.S. trunk domestic data is for the periods Oct. 1972-Sept. 1973 and Oct. 1973-Sept. 1974, respectively.

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967, 1968, 1969 (Catalogue No. 51-202) Queen's Printer; Hull. Tables 3, 4 and 5. Statistics Canada, Air Carrier Financial Statements, 1970-1975 (Catalogue No. 51-206) Information Canada; Ottawa. Table 4.

- Statistics Canada, Air Carrier Operations in Canada, 1971-1975 (Catalogue No. 51-002) Information Canada; Ottawa. Table 4.
- U.S. Civil Aeronautics Board, Air Carrier Financial Statistics (U.S. Government Printing Office, Washington, D.C.) Sept. 1974, Table 1.
- U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office; Washington, D.C.) Part III, Table 4 and Part IV, Table 4.

(iii) The Level of Other Administrative Costs

It is important to consider the levels of administrative costs other than those for sales and promotions, particularly in the case of a crown corporation. It is one of the traditional 'free enterprise' hypotheses that government corporations will be relatively top heavy. According to this hypothesis, the level of Air Canada's administrative costs--even if the airline is, subject to its constraints, as efficient as possible--might be expected to be higher than in the other carriers. That is, in addition to the extra staffing and other administrative expenses imposed upon Air Canada by the requirement that the airline serve certain points which would not be served by a profit-maximizer, Air Canada might be expected to display a higher level of such expenses than CP Air and the U.S. trunk carriers.

Tables 26 through Table 28 examine different dimensions of the administrative costs of operations, including yield per employee.

TABLE 26
GENERAL ADMINISTRATION

Year	GENERAL ADMINISTRATION							
	AIR CANADA		CP AIR		CANADIAN		US DOMESTIC TRUNK	
	%O.R. ^a	¢/p-m ^b	%O.R.	¢/p-m	%O.R.	¢/p-m	%O.R.	¢/p-m
1967	4.10	.27	4.32	.28	4.14	.27	3.81	.22
1968	4.09	.28	4.72	.31	4.22	.29	4.05	.23
1969	4.48	.32	5.42	.37	4.72	.33	4.18	.25
1970	4.97	.33	5.94	.34	5.20	.33	4.50	.28
1971	4.53	.33	6.06	.37	4.89	.34	4.64	.32
1972	4.33	.30	6.30	.38	4.78	.32	4.46	.31
1973 ^c	4.78	.32	5.10	.31	4.85	.32	4.29	.31
1974 ^c	5.44	.42	4.88	.34	5.30	.40	4.15	.35
1975	5.62	.49	5.92	.44	5.70	.48	n/a	n/a

a % O.R. calculates the cost of general administration as a percent of the operating revenue of the carrier(s).

b c/p-m is the number of c Canadian which is spent on general administration per revenue passenger mile.

c U.S. trunk carrier data is for the periods October 1972 to September 1973, and October 1973 to September 1974, respectively.

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967, 1968 and 1969, (Catalogue No. 51-202) Queen's Printer, Hull. Tables 3, 4 and 5.

Statistics Canada, Air Carrier Financial Statements, 1970-1975, (Catalogue No. 51-002) Information Canada, Ottawa. Table 4.

U.S. Civil Aeronautics Board, Air Carrier Financial Statistics, (U.S. Government Printing Office, Washington, D.C.) September, 1974. Table 1.

U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office, Washington, D.C.) Part III, Table 4, and Part IV, Table 4.

Within the category of general administrative expenses are the residual of those administrative expenses which are not classified as belonging to promotional and selling; passenger service; or aircraft and traffic servicing. It is not clear whether any supposed staff top-

heaviness in Air Canada's operations should be attributed to these employees or to the total of all administrative costs, shown below in Table X-16. In either case, while the costs for Air Canada are indeed higher than those of the U.S. carriers, they are generally at parity with or below those for CP Air. Thus, if there is in fact any inefficiency involved, it is certainly not evident, from these figures, that it is caused by the "publicness" of Air Canada, rather than by the circumstances of its route operations.

TABLE 27

Year	ADMINISTRATIVE COSTS							
	AIR CANADA		CP AIR		CANADIAN		US DOMESTIC TRUNK	
	¢/p-m ^a	%O.R. ^b	¢/p-m	%O.R.	¢/p-m	%O.R.	¢/p-m	%O.R.
1967	2.88	43.5	2.97	45.9	2.90	44.1	2.31	40.4
1968	2.97	43.0	3.09	47.7	3.00	44.0	2.39	41.9
1969	3.26	46.2	3.23	47.9	3.25	46.6	2.49	42.2
1970	3.15	47.2	2.84	49.4	3.07	47.7	2.78	44.7
1971	3.32	45.8	3.00	49.7	3.23	46.7	2.96	43.7
1972	3.10	45.5	3.00	50.3	3.08	46.6	3.07	44.2
1973 ^c	3.10	45.9	3.13	51.6	3.10	47.1	3.15	44.0
1974 ^c	3.52	45.1	3.46	48.2	3.48	45.8	3.43	44.1
1975	3.94	44.9	3.77	50.2	3.89	46.2	n/a	n/a

a c/p-m corresponds to the cost (in c Canadian) of all general administration costs. Not included in these cost figures, but included in operating expenses, are the cost of flying operations, maintenance, and amortization and depreciation. These costs will be discussed in the following section.

b % of O.R. refers to the cost of administration as a percent of the operating revenue of the carrier(s).

c U.S. Trunks Domestic figures are for the periods October 1972 to September 1973, and October 1973 to September 1974, respectively.

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967, 1968, 1969, (Catalogue No. 51-202) Queen's Printer, Hull. Tables 3, 4 and 5.

Statistics Canada, Air Carrier Financial Statements, 1970-1975, (Catalogue No. 51-206) Information Canada, Ottawa. Table 4.

Statistics Canada, Air Carrier Operations in Canada, 1970-1975, (Catalogue No. 51-002) Information Canada, Ottawa. Table 4.

U. S. Civil Aeronautics Board, Air Carrier Financial Statistics, (U.S. Government Printing Office, Washington, D.C.) September, 1974. Table 1.

U. S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office, Washington, D.C.) Part III, Table 4, and Part IV, Table 4.

A final indicator of the potential administrative top-heaviness of Air Canada is the yield per employee, shown in Table 28.

TABLE 28

YIELD PER EMPLOYEE (ATM/ EMPLOYEE)				
Year	Air Canada	CP Air	Canadian Industry	U. S. Trunks
1967	77, 556	n/a	n/a	97, 014
1968	89, 558	n/a	n/a	108, 883
1969	96, 026	n/a	n/a	131, 147
1970	109, 850	120, 537	112, 367	138, 415
1971	113, 636	111, 654	113, 170	146, 789
1972	115, 618	109, 406	114, 157	144, 401
1973	124, 759	110, 040	122, 509	n/a
1974	126, 550	127, 539	126, 800	n/a
1975	136, 908	131, 517	135, 460	n/a

SOURCES:

Air Canada, Annual Report, 1976, Ten-Year Summary.

Statistics Canada, Air Carrier Operations in Canada, 1970-1975, (Catalogue No. 51-002) Information Canada, Ottawa, Table 4.

U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office, Washington, D.C., 1974) Part III, Table 4.

As in the case of the cost data, it seems likely a priori that the low densities on the Canadian routes will generate lower overall carrier yields than those in the U.S., and it is clearly the case that yields in the Canadian industry are lower than those in the U.S. The figures for Air Canada however, while below those of the U.S. industry, demonstrate quite a significant increase in the yield per employee over time. Further, while they are lower than CP Air's in some years, they are greater in others, showing no signs of a constant pattern. There thus appears no indication that Air Canada, relative to other U.S. and Canadian carriers, is inefficient in the sense of overemploying people.

The final area of comparison of the cost dimensions of the two industries is with aircraft, maintenance and depreciation (equipment) costs.

(iv) Aircraft and Equipment Operations Costs:

There are several dimensions to the cost of aircraft traffic and servicing, one of which is the stage length. The longer the stage length, the smaller the required aircraft servicing, since the fewer the take-off and landings per passenger-mile or per available ton-mile sold.

Since Air Canada has a relatively short stage length,²³ and CP Air has a relatively long one,²⁴ as compared with the U.S. carriers, other things being equal, one would expect Air Canada to have slightly higher costs than the U.S. average, and CP Air to have lower costs. On the other hand, since the average route density is higher in the United States,²⁵ one might expect slightly lower U.S. trunk carrier costs. Labour was marginally more costly in the U.S.,²⁶ whereas the cost of take-offs and landings is higher in Canada.²⁷ On balance, therefore, one might expect to find CP Air's servicing costs to be lower than the U.S. trunk costs, with Air Canada's figure roughly comparable to the U.S. carriers' figures. Table 29 indicates that these expectations are borne out for the period of study.

TABLE 29

AIRCRAFT AND TRAFFIC SERVICING COSTS								
Year	AIR CANADA		CP AIR		CANADIAN		U. S. TRUNK	
	¢/pm ^a	¢/atm ^b	¢/p-m	¢/atm	¢/p-m	c/atm	¢/p-m	¢/atm
1967	.976	4.24	.731	2.77	.919	3.89	.920	3.61
1968	1.032	3.94	.778	2.71	.975	3.64	.940	3.41
1969	1.116	4.00	.784	2.83	1.031	3.70	.981	3.34
1970	1.054	3.88	.718	2.99	.989	3.70	1.116	3.81
1971	1.138	4.01	.791	3.44	1.043	3.88	1.196	3.85
1972	1.051	4.36	.811	3.92	.991	4.26	1.238	4.50
1973 ^c	1.062	4.51	.891	4.18	1.023	4.44	1.255	4.46
1974 ^c	1.218	4.90	.963	4.15	1.150	4.71	1.412	5.50
1975	1.408	5.32	1.063	4.65	1.308	5.14	n/a	n/a

a The cost of aircraft and traffic servicing in c Canadian per passenger-mile sold.

b The cost of aircraft and traffic servicing in c Canadian per available ton-mile flown.

- c U.S. Trunk figures are for the time periods October 1972 to September 1973, and October 1973 to September 1974, respectively.

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967, 1968, and 1969, (Catalogue No. 51-202) Queen's Printer, Hull. Tables 3, 4 and 5.

Statistics Canada, Air Carrier Financial Statements, 1970 - 1975, (Catalogue No. 51-206) Information Canada, Ottawa. Table 4.

Statistics Canada, Air Carrier Operations in Canada, 1970 - 1975, (Catalogue No. 51-002) Information Canada, Ottawa. Table 4.

U.S. Civil Aeronautics Board, Air Carrier Financial Statistics, September 1974, (U.S. Printing Office, Washington, D.C.) Table 1.

U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office, Washington, D.C.) Part III, Table 4 and Part IV, Table 4.

Another dimension to the cost of equipment is the cost of aircraft maintenance. Since the cost of labour is slightly lower in Canada, but the more severe winter weather imposes substantial additional maintenance requirements, it might be expected that maintenance costs would be comparable for Canadian and U.S. carriers. Since aircraft parts are typically dutiable imports into Canada from the United States, however, Canadian carrier expenses might be expected to exceed those of their United States' counterparts. Table 30 shows aircraft maintenance costs per passenger-mile and per available ton-mile of operation for the Canadian and U.S. carriers.

TABLE 30

TABLE 30								
MAINTENANCE COSTS (cents Canadian)								
Year	AIR CANADA		CP AIR		CANADIAN		U. S.	
	¢/ pm	¢/ atm	¢/ p- m	¢/ atm	¢/ p- m	¢/ atm	¢/ p- m	¢/ atm
1967	1.28	5.57	.84	3.23	1.18	5.00	.96	3.76
1968	1.24	4.74	.77	2.68	1.14	4.24	.91	3.41
1969	1.20	4.30	.73	2.62	1.08	3.87	.88	3.00
1970	1.16	4.25	.73	3.04	1.04	3.96	.97	3.21
1971	1.15	4.06	.64	2.77	1.00	3.76	.98	3.05
1972	1.02	4.21	.64	3.11	.92	3.96	.99	3.39
1973	1.00	4.25	.64	3.00	.92	3.99	n/a	n/a
1974	1.03	4.16	.74	3.17	.95	3.91	n/a	n/a
1975	1.09	4.11	.76	3.32	.99	3.91	n/a	n/a

SOURCES:

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967, 1968 and 1969, (Catalogue No. 51-202) Queen's Printer, Hull. Tables 3, 4 and 5.

Statistics Canada, Air Carrier Operations in Canada, 1970 - 1975, (Catalogue No. 51-002) Information Canada, Ottawa. Table 4.

Statistics Canada, Air Carrier Financial Statements, 1970 - 1975, (Catalogue No. 51-206) Information Canada, Ottawa. Table 4.

U. S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U. S. Government Printing Office, Washington, D.C.) Part III, Table 4, and Part IV, Table 4.

It is not entirely clear why Air Canada's maintenance costs are so high relative to those of the rest of the carriers. Certainly the shorter stage length will have a strong impact. This reasoning is supported by the relatively low costs for CP Air's maintenance, but it is difficult to believe that the entire cost differential is a consequence of differing stage lengths. An additional reason might be found in the age of aircraft in operation, but since comparative statistics are not available on this breakdown of capital stock, there is no way to test this hypothesis. The higher Canadian load factor of

course lowers the Canadian carriers' cost per passenger-mile relative to the U.S. industry, making Air Canada's figures all the more striking.

Two remaining categories of equipment costs deal with flying operations and depreciation (and amortization) costs. This data is shown below, in Tables X-20 and X-21 respectively. It would be expected that if Canadian labour costs are in fact lower than their U.S. counterparts,²⁸ flying operations would be cheaper in Canada. However, since the opportunity cost of capital is higher in Canada, and since Canadian carriers' aircraft tend to be imported and therefore taxed, one would expect depreciation and amortization to be higher in Canada if the pattern of airplane usage is similar. If the relative frequencies are lower, however, and load factors higher, this will serve to lower the cost of depreciation and amortization in the Canadian industry relative to the U.S. industry, thereby offsetting some of the U.S. industry's cost advantage.

TABLE 31

FLYING OPERATIONS COSTS (cents Canadian)								
Year	AIR CANADA		CP AIR		CANADIAN		U. S.	
	¢/pm	¢/atm	¢/p-m	¢/atm	¢/p-m	¢/atm	¢/p-m	¢/atm
1967	1.39	6.04	2.10	8.14	1.55	6.55	1.80	5.44
1968	1.49	5.67	2.03	8.73	1.61	6.01	1.53	5.39
1969	1.53	5.50	1.58	5.70	1.55	5.55	1.64	5.38
1970	1.42	5.23	1.34	5.60	1.40	5.32	1.83	5.92
1971	1.53	5.41	1.40	6.10	1.50	5.57	1.98	6.31
1972	1.42	5.90	1.30	6.31	1.39	5.99	1.89	6.45
1973	1.47	6.23	1.49	6.99	1.47	6.39	n/a	n/a
1974	2.08	8.38	2.06	8.85	2.08	8.50	n/a	n/a
1975	2.47	9.32	2.32	10.13	2.42	9.53	n/a	n/a

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967, 1968 and 1969, (Catalogue No. 51-202) Queen's Printer, Hull. Tables 3, 4 and 5.

Statistics Canada, Air Carrier Operations in Canada, 1970 - 1975, (Catalogue No. 51-002) Information Canada, Ottawa. Table 4.

Statistics Canada, Air Carrier Financial Statements, 1970 - 1975, (Catalogue No. 51-206) Information Canada, Ottawa. Table 2.

U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office, Washington, D.C.) Part III, Table 4 and Part IV, Table 4.

Examining the data presented in Table 31, it appears that in terms of CP Air and Air Canada there is at least some indication of economics of scale of operation. However, except for the very early years of the period under examination, there is no substantial difference between Air Canada's and CP Air's costs on a per passenger-mile basis. While the U.S. carriers appear, from the data available, to fly larger planes, since the cost per atm is substantially lower, particularly in the first half of the available data, it is also the case that measured on the basis of cost per passenger-mile sold, the cost of flying operations is lower in Canada.

The final equipment-related expenditure is the cost of depreciation and amortization. The level of this expenditure will depend on the type of capital equipment, the value thereof, and on the opportunity cost of the funds devoted to this particular form of investment. It is also dependent on the rate at which the carriers are allowed by tax regulations and by the relevant industry regulatory body, to write-off

this capital expenditure. Since the cost of borrowing money, and thus the amount of income forgone by buying aircraft, has been higher in Canada than in the U.S. (Table 20), it would be expected that the depreciation per unit of capital equipment would be greater than in the U.S. However, there is some indication that, at least in the early years of the study, the U.S. carriers were using larger (more expensive) aircraft at lower load factors. Thus on a per revenue-passenger-mile basis, the equipment costs in the U.S. might approach those in Canada. Table 32 provides depreciation and amortization figures for the two industries, expressed both as cost per passenger-mile sold, and as cost per available ton-mile.

TABLE 32

TABLE 52

DEPRECIATION AND AMORTIZATION EXPENSES (cents Canadian)								
Year	AIR CANADA		CP AIR		CANADIAN		U. S.	
	¢/p-m	¢/atm	¢/p-m	¢/atm	¢/p-m	¢/atm	¢/p-m	¢/atm
1967	.76	3.30	.13	.51	.62	2.63	.53	1.98
1968	.71	2.69	.12	.50	.57	2.14	.55	1.92
1969	.74	2.65	.62	2.10	.71	2.55	.60	1.99
1970	.66	2.43	.59	2.45	.64	2.44	.67	2.17
1971	.84	2.95	.64	2.77	.78	2.91	.69	2.18
1972	.75	3.10	.57	2.77	.70	3.03	.66	2.24
1973	.74	3.13	.45	2.11	.67	2.91	n/a	n/a
1974	.86	3.48	.49	2.05	.76	3.12	n/a	n/a
1975	.93	3.51	.59	2.58	.83	3.27	n/a	n/a

SOURCES:

Dominion Bureau of Statistics, Civil Aviation, 1967, 1968 and 1969, (Catalogue No. 51-202) Queen's Printer, Hull. Tables 3, 4 and 5.

Statistics Canada, Air Carrier Operations in Canada, 1970 - 1975, (Catalogue No. 51-002) Information Canada, Ottawa. Table 4.

Statistics Canada, Air Carrier Financial Statements, 1970 - 1975, (Catalogue No. 51-206) Information Canada, Ottawa. Table 2.

U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office, Washington, D.C.) Part III, Table 4 and Part IV, Table 4.

As previously noted in discussion of Table 20, the average U.S. bond rate for the period 1967-74 was 5.93% and the Canadian bond rate was 7.56%. This corresponds to an opportunity cost of borrowing which is (assuming an efficient capital market) at least 27% higher in Canada than in the United States. Baldwin estimates capital costs to be 11.25% higher in Canada than in the U.S. during the 1967-1969 period.²⁹ During the period 1967-1972 when there is comparable data, the U.S. depreciation and amortization payments were about 26% lower, on average, than the Canadian payments, calculated on a cost per available ton mile. On a passenger-mile basis, the Canadian costs were, on average, 8.64% higher than the U.S. costs. Since the higher densities of U.S. routes will tend to increase the number of available ton-miles flown per plane and thus lower the cost figures on an available ton-miles basis, the former figures tend to represent a larger gap than would otherwise be the case. The higher load factors in the Canadian market tend to mitigate against the lower densities. In any case, it appears that however the costs are measured the depreciation and amortization expenses of the Canadian carriers are high relative to those of the U.S. carriers. A more interesting issue is that of the difference between Air Canada

and CP Air. The depreciation figures are very low for CP Air, suggesting a relatively large number of 'written-off' planes, particularly during the early years under study. The fact that these costs remained lower than CP Air expanded into the domestic market suggests that few new planes were needed to fill this expanding route mileage. Since CP Air was initially limited to a single route, later expanded to two, and finally to a 25% share of the transcontinental route, and since during much of the period of comparison there were specified beginnings and end points of the run, there were obviously very few positioning problems. A single aircraft, undertaking continual round trips, would be adequate to service such a route, and would hence involve a relatively low aircraft expense whether new or already depreciated.

(4) Comparative Costs

Having considered annual cost figures for the relevant Canadian and United States carriers, it is useful to examine the relative performances of those carriers during the six-year period for which data is available.

TABLE 33

TABLE 33				
COMPARATIVE COSTS, PER PASSENGER-MILE ^a , 1967-1972				
Cost Category	Carriers	Air Canada	CP Air	Gen Industry
		U. S. Trunks	U. S. Trunks	U. S. Trunks
Operating Expenses		13. 99	2. 69	10. 76
Promotion & Selling Expenses		46. 48	73. 24	53. 52
Passenger Service Expenses		12. 90	9. 68	12. 00
General Administration		13. 66	27. 33	16. 77
Administration		16. 75	13. 31	15. 81
Traffic Servicing		- . 36	-27. 81	-6. 92
Maintenance		23. 91	-23. 55	11. 78
Flying Operations		-17. 73	- 8. 62	-15. 65
Depreciation		20. 49	-27. 84	8. 65

a [Canadian carrier costs - U.S. industry average costs] % U.S. industry average costs.

SOURCE:

Calculations based on data included in Tables 22 through 31.

Table 33 shows the percentage difference in the average cost of operations between the two mainline Canadian carriers and the average of the U.S. trunks' domestic operations. The picture which emerges is

that actual flying operations and air traffic servicing were cheaper in Canada, and administration and operating expenses were lower in the United States, while it was substantially more expensive to sell a passenger-mile of air transport in Canada than in the United States.

Table 34 presents the same data in a slightly different form. Rather than showing the percentage difference in the various cost levels, this table presents the Canadian costs as an index with the average Canadian cost being divided by the average U.S. cost. In both of these tables, it is clear that it was, on average, during the first two thirds of the study period, cheaper to operate an air carrier in the U.S. than in Canada. This is certainly true insofar as the observed expenses of the carriers accurately reflect the minimum possible costs for the operation. Since, according to Baldwin,³⁰ the estimated cost curves showed a difference between the Canadian and U.S. minima of about 8 percent in 1969, that is, in the middle of this time period, it seems quite reasonable that there should be, on average, a ten percent premium per passenger-mile, in the level of operating expenses, and an 8 percent difference in the amount of depreciation. Tables 35 and 36 deal with the changes in the levels of expenses during the time period.

TABLE 34

COMPARATIVE COST INDICES, 1967-72 AVERAGES				
Cost Category	Carriers	Air Canada	CP Air	Can. Industry
	U. S. Trunks	U. S. Trunks	U. S. Trunks	U. S. Trunks
Operating Expenses	113	103	111	100
Promotion & Selling Expenses	146	173	154	100
Passenger Service	113	110	113	100
General Administration	114	127	117	100
Administration	117	113	116	100
Traffic Servicing	100	72	93	100
Maintenance	124	76	112	100
Flying Operations	82	91	84	100
Depreciation	120	72	108	100

SOURCE:

Calculations based on data included in Tables 22 through 31.

TABLE 35

COMPARATIVE COST CHANGES, 1967-72 (percent changes)				
Carrier Cost Category	Air Canada	CP Air	Gdn. Industry	U. S.
Operating Expenses	63.09	78.43	66.36	92.17
Promotion & Selling	57.69	64.60	59.55	82.17
Passenger Servicing	106.71	109.44	107.33	116.90
General Administration	78.28	161.94	97.20	116.35
Administration	76.29	97.08	80.99	102.27
Traffic Servicing	76.19	121.44	83.96	105.01
Maintenance	29.76	50.32	32.96	56.68
Flying Operations	67.50	21.25	53.64	100.19
Depreciation	61.21	745.00	93.55	90.67

SOURCE:

Calculations based on data included in Tables 22 through 31.

Table 35 shows the change in the level of the various expense categories during the time period for which annual comparative data is available. The implications from this table must be tempered with the fact that the incomplete data from the U.S. for 1973 and the first part of 1974, presented in the various tables in the first part of this section, indicate that for these last two years, Canadian costs were

rising substantially more rapidly than their United States counterparts. During the initial stages of the period under study, operating costs (expressed in Canadian dollars) rose more rapidly in the U.S. than in Canada. This provides at least a partial explanation for the fact that fares in Canada did not exceed the U.S. fares until 1975, rather than in late 1973 as expected initially. It should be pointed out that the exchange rate used for converting U.S. to Canadian dollars rose from .9268 in 1967 to 1.0091 in 1972; in other words, it became increasingly cheaper for Canadian carriers to purchase equipment, parts, etc., from the United States, *ceteris paribus*. This exchange rate trend continued until 1974, when it reversed itself, and the price of the United States dollar in Canadian dollars began to rise. Thus at least part of the explanation for the less rapid rise of costs in Canada, the declining relative cost of imported materials from the United States, was due to factors exogenous to the air transport industries.

The final table deals with the percentage changes in costs on a passenger-mile basis, expressing the final level of cost (in 1972) as a percentage of the initial (1967) level of this cost and calculating the percentage change over the interval. This comparison is included to note the size of the changes over the five year period on a per-mile basis, rather than on an absolute expenditure basis.

TABLE 36

Carrier Cost Category	PERCENTAGE COST CHANGES, 1967-72 (per passenger mile)			
	Air Canada	CP Air	Cdn. Industry	U. S. Trunks
Operating Expenses	9.19	(-10.65)	2.99	26.20
Promotion & Selling	(-2.94)	(-15.67)	(-6.42)	19.70
Passenger Service	26.23	4.62	20.97	42.31
General Administration	11.11	35.71	18.52	40.91
Administration	7.64	1.01	6.21	32.90
Traffic Servicing	7.68	10.94	7.83	34.57
Maintenance	(-20.31)	(-23.81)	(-22.03)	3.13
Flying Operations	2.16	(-38.10)	(-10.32)	5.00
Depreciation	(-1.32)	338.46	12.90	24.53

SOURCE:

Calculations based on data in Tables 12 through 31.

While in absolute terms all costs are shown by Table 35 to have increased over the time period, on a per passenger-mile basis, Table 36 demonstrates that only two thirds of the cost categories were higher in the Canadian industry. Of the remaining six categories, three showed increases of less than ten percent, while no increase exceeded twenty-

one percent. The level of operating expenses per passenger-mile, for example, increased by less than ten percent for Air Canada, decreased by over ten percent for CP Air, for a net Canadian industry increase of about three percent. During the same time period, the U.S. trunks experienced small increases in only two categories and increases of over twenty percent in six categories, with the greatest increases (Passenger Service and General Administration) exceeding forty percent. Excluding the relative increases in U.S. Trunk costs generated by shifts in the exchange rate, the United States industry increases remain substantially greater than those in Canada. The pattern of increases in the industries, however, as revealed by a simple correlation coefficient in excess of .97, was virtually identical. Passenger Service and General Administration expenditures (per passenger-mile) showed the greatest increases in both, while increases were smallest (decreases greatest) for Maintenance and Flying Operations.

The evidence on costs of the Canadian and United States carriers during the 1967-72 period, in short, suggests that by the end of the period the two industries were operating with roughly similar operating costs per passenger-mile; certainly there is little to suggest that Canadian costs were in excess of those of the United States airlines. For the period from 1973 onwards, it appears likely that Canadian costs were rising faster than those in the United States, although the available data is fragmentary. This trend, combined with the higher load factors, pursued by the CAB as a consequence of the Domestic Passenger Fare

investigations, implies higher Canadian expenses per passenger-mile.

OTHER CHARACTERISTICS

(1) New Techniques: There exists no comparative data on the degree of progressiveness of the Canadian and United States carriers. A priori it might be expected that with lower densities on similar runs, lower frequencies, and relatively smaller sizes of the Canadian carriers, economies of scale in risk-taking might lead to slower adoption of new technology by those carriers. On the other hand, there is evidence that Air Canada sought during the period under consideration, to introduce the newest sizes and types of airplanes whenever demand was sufficient to warrant such a policy³¹. Further, in order to speed and rationalize the reservation system of Air Canada, the newest available form of reservation system was instituted³². There is thus, it appears, no evidence to suggest that the Canadian carriers have been any less willing to institute any changes in technology which are profitable.

(2) Quality and Safety: As previously mentioned, product quality, as in any service industry, is at best difficult to define in terms of air transport output. There is evidence that Air Canada pays at least lip service to a desire to maintain a 'top quality air transport network'³³, whatever that might mean in practice. It should be noted that (competitive) transborder operations would tend to act to homogenize the two industries in respect of technology, quality and safety. The fact that Air Canada

did not keep easily available operations data on a domestic basis³⁴, but rather on a transcontinental and North American basis³⁵, suggests that it views such operations as part of a homogeneous whole. Finally, assuming adequate maintenance, if similar equipment is in use, it would be expected that similar safety records would result, *ceteris paribus*. The higher load factors on the Canadian carriers might, of course, be viewed as evidence of lower quality by some observers if less fully occupied aircraft are a source of direct satisfaction, or are regarded as inversely related to the quality of service to in-flight passengers, but it is difficult if not impossible to provide a useful index of such components of service quality.

As a subset of quality, the frequency of service and the pattern of service, including such issues as the ease of connections, are clear concerns of both industries. It has been noted that the members of the U.S. industry have complete control over service frequencies, while Canadian carriers' frequencies are regulated by the CTC. The DPFI served, albeit incidentally, to mitigate to some extent against the results of this unbridled control; that is, to restrain the impetus for competitive expansion in any submarket to the point of breakeven operations. Such expansion served only to reduce profit and not to reduce prices, since the latter were determined as a joint decision within what Jordan has concluded should be viewed as a cartel³⁶. In the Canadian case, the lower density of service, in part the result of the physical size of the

market and twice the number of carriers per capita, was partially generated by the lower frequency of service which resulted from the control which the CTC exercised over market shares. The CTC, of course, had the power to regulate frequency directly, although it did not exercise this option. In addition, the linear routing allocated to CP Air, combined with specific beginning and end points (making positioning impossible, according to CP Air³⁷) suggests a constraint on expansions into or within various submarkets.

'Pattern of service' refers to the service within the submarkets. In a strongly made case, Jordan argued that the regulated carriers were charging substantially higher prices than were unregulated carriers in the California market³⁸. While it is not clear precisely what caused the price discrepancies which he indicates, and which he further argues are applicable to Canadian markets such as Montreal-Toronto, this observation is entirely consistent with non-discriminatory pricing based on curves generated by serving the entire system³⁹. These costs include those incurred in the service of those routes which would not be profitable in themselves, as clearly pointed out in the Canadian case by Baldwin⁴⁰. It is, however, not clear to what extent the performances of carriers in such unregulated markets as the California case can be viewed as entirely independent of the past successes of the developmental policies of the CAB. There is some reason, for instance, to believe that the use of air transport as a common mode of travel, in both

Canada and the United States, and hence the level of demand in unregulated markets, is substantially dependent upon past safety campaigns, developmental fares, and service levels and patterns in the country as a whole. Further, it is not clear that total levels of satisfaction, however measured, in either country would have been higher were no air transport to have developed in the areas here regulation was required to ensure the provision of service. Finally, it is not clear that without those segments of operation, the level of demand would remain at its present level in either country. Thus the comparison of 'regulated' with 'unregulated' carriers, while suggestive, cannot be regarded as conclusive.

(3) **Uncosted Externalities:** There was no indication that these would be of substantial concern as an economic variable, to either carriers, industries, or regulatory boards. In fact there was little evidence of any concern about such issues as the amount of air or noise pollution by these particular agencies under consideration.

(4) **Factor Market Distortions:** Table 12 suggests some degree of concern with the factor markets, particularly in the U.S. industry. There is very little evidence of such concern in Canada except insofar as individual Members of Parliament felt concern over labour markets within their jurisdiction. The removal of substantial maintenance operations from Winnipeg by Air Canada elicited such concern in the case of

Manitoba M.P.'s, although it is somewhat less than certain that this concern was with the economic rather than political optimality of the move. There was rather more concern displayed in the United States over the influence of any potential excessive frequency on the fuel crisis; however, it is somewhat questionable to consider this a concern over actions of the industry in terms of misallocations in other markets.

(5) Macroeconomic and Other Exogeneous Considerations: There appears in the public record very little concern with any matter of the macro considerations involved in air transport. Neither regulatory body exhorted its charges to minimize costs, for instance. In the Canadian case, a new Minister of Transport, not surprisingly, instituted changes in policy. In the initial portion of the period under study, the introduction of CP Air into the Canadian industry as a mainline carrier was allowed in order to increase consumer satisfaction, but only after it was determined that this would not cause Air Canada to lose money⁴¹. The regime of Mr. Jamieson fostered such profitability on the part of Air Canada by encouraging the transfer to non-mainline carriers of routes not consistent with the operating characteristics of the mainlines⁴². Under Mr. Marchande the emphasis shifted to development of Air Canada as a public servant, emphasizing quality service and operation as a model corporation in terms of labour, bilingualism, decentralization and technological change, an interesting set of goals⁴³. At no time was it suggested that the private carrier

should attempt such exogenous goals, either in Canada or in the United States.

Since the Canadian carriers were traditionally cost-plus pricers, during the time of inflation in the costs of air transport, prices not surprisingly, were increased. There was no indication that during this period the carriers were attempting to increase the prices more rapidly than the rise in cost of providing such service. However, with the retirement of Mr. Marchand as Transport Minister and with recent losses on the part of Air Canada, it appears that there will be a return to a profit-maximizing emphasis by Air Canada. Since there was no evidence of concern about other factors by the private carriers, no similar shift in emphasis occurred.

Other than these matters, and the level of fuel costs, there was little concern with the implications of air transport either in terms of its impact on the various macro variable or other exogenous considerations.

CONCLUSION:

There is considerable evidence that the Canadian and U.S. industries did differ in terms of such variables as the price level, the load factors, frequency of service, level of profit, and degree of price discrimination, and further, that these differences were not simply the

result of differing unregulated market environments. There is, therefore it seems, some support for the hypothesis that differing regulatory structures foster, at least over some time period, differing industry performances. While this study will not venture into a cost effectiveness comparison of alternative regulatory systems, it seems appropriate to note that the Canadian system, with the CTC as a daily regulator, the Minister as the policy maker, and the crown carrier as the instrument of any ideals which the Canadian regulatory model wishes to institute may be able to achieve its goals relatively efficiently in terms of time and other resources devoted to air transport regulation. As an alternative, of course, it would be possible to contract with private air carriers to perform such duties as serving unprofitable markets or fostering employee bilingualism in exchange for the promise of profitable routes or monopoly profits in other submarkets. However, it might be substantially easier from a regulatory standpoint, to constrain a public carrier and allow it to freely compete as a profit maximizer subject to these binding constraints. The degree to which the various alternatives would be more or less costly is, however, another topic and will not be considered further here.

FOOTNOTES

1. House of Commons Standing Committee on Transport and Communications Hearings. 29/2, 2: 10.
2. Ibid, 2: 5.
3. Averch, Harvey and L.L. Johnson, "Behavior of the Firm Under Regulatory Constraint", AER, LII, December, 1962.
4. Keeler, Theodore E., "Airline Regulation and Market Performance", Bell Journal of Economics and Management Science, Vol. 3, No. 2 (Autumn 1972), 412-421.
5. See the discussion supra, Chapter 9.
6. CAB Order 72-12-18 (December 5, 1972). Since thirty days notice is required, no changes could take effect until January 1973.
7. Some examples of these anomalies were fare parity for 'long distance' destinations from Calgary and Edmonton; a number of artificially low prices for short haul movements; and through fares where stopovers are necessary (charging fares on great circle mileages rather than on actual miles flown) .
8. For an example of the calculations involved, see 1973 Handbook of Airline Statistics, (U.S. Government Printing Office, Washington, 1974) Part VI, Table 2 ff.
9. Baldwin, op. cit., p. 96 argues that this corresponds to a "break-even" rate of return for Crown corporations, which generally obtained funds at one-eighth of one percentage point above the long term bond rate. There is evidence in testimony by Mr. Cochrane of Air Canada before the House Standing Committee, 29/1, 28:101, that at least on some occasions the rate may have been lower than this. It seems likely, therefore, that the long term bond rate may overstate, and certainly does not seriously understate, Air Canada's break-even rate-of-return.
10. Lowenfield, Andreas F., Aviation Law, op. cit., p. I-182.
11. Note that in only three of the eight years for which data is available did CP Air's rate-of-return fail to exceed the bond rate by at least two and one-half percentage points, and that only in 1975 was CP Air's rate-of-return significantly below that rate.

12. Douglas, G.W. and J.C. Miller III, Economic Regulation of Domestic Air Transportation: Theory and Policy. (Washington, DC: The Brookings 1974).
13. Since the CAB is not empowered to directly regulate frequency, it announced that it would effect that control by indirect means, allowing a twelve percent rate-of-return on the investment which would have been appropriate had carriers operated at a load factor deemed by the Board to be reasonable. See CAB Order 71-4-54, p. 3, and CAB Order 74-3-81, p. 5.
14. Baldwin, op. cit., p. 204.
15. Canada Department of Finance, Economic Review, 1975 (Ottawa: Supply and Services, April 1976).
16. Ibid., Reference Table 44.
17. Ibid., Reference Table 42.
18. Dominion Bureau of Statistics, Civil Aviation, 1967-1969 (Catalogue No. 51-202) Queen's Printer, Hull, 1970. Table 6.
19. Testimony by Mr. Y. Pratte of Air Canada before the House Standing Committee, 29/1, 21:79.
20. Ibid.
21. U.S. Civil Aeronautics Board, 1973 Handbook of Airline Statistics, (U.S. Government Printing Office, Washington, 1974) Part III, Table 4.
22. There are many examples of Air Canada's representatives expressing strong concern when their airline is criticized on the grounds of any service deficiency.
23. Testimony by Y. Pratte of Air Canada before the House Standing Committee, 29/1, 21:78.
24. Ibid.
25. Ibid., 21:80.
26. Ibid.
27. Ibid.
28. Since Mr. Pratte's comparisons were based on unconverted dollar cost comparisons, it is not certain that labour cost differences

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for instance, were not simply a function of the exchange rate.

29. Baldwin, op. cit., p. 217.
30. Ibid., p. 204.
31. See comments by Y. Pratte of Air Canada before the House Standing Committee, 29/1, 21:63.
32. Remarks by Mr. D. Jamieson, Minister of Transport, before the House Standing Committee, 28/3, 3:79.
33. Testimony by Mr. J. Pickersgill, President of the CTC, before the House Standing Committee, 28/3, 3:30.
34. Letter from Mr. D.J. McIntyre, Director, Accounting Reports and Policy, Air Canada, dated 7 August 1975.
35. Ibid.
36. Jordan, W.A., Airline Regulation in America: Effects and Imperfections (Baltimore: John Hopkins Press, 1970).
37. Canadian Transport Commission, ATC Decision No. 3026, p. 4 (12 August 1970).
38. Jordan, Airline Regulation, op. cit.
39. Jordan, W.A., "Further Comparisons of American and Canadian Airline Regulation", unpublished paper presented at the Western Economic Association Annual Conference, San Diego, California, June 1975.
40. Baldwin, op. cit., p. 134.
41. Pickersgill, Hbn. J.W., "Statement of Aviation Policy Principles", (Ottawa: Ministry of Transport, 27 March 1967) p. 1.
42. Jamieson, Hbn. D., "Statement of Aviation Policy Principles", (Ottawa: Ministry of Transport, 15 August 1969).
43. Marchand, Hbn. J., "Statement of Air Policy", (Ottawa: Ministry of Transport, 23 November 1973) p. 3.

CHAPTER ELEVEN

SUMMARY AND CONCLUSION

In the first chapter, it was hypothesized that differing regulatory practices will tend to generate differing performance characteristics in industries which might be expected to have, *ceteris paribus*, similar performances. In other words, it was postulated that regulators do indeed--contrary to Stigler's arguments--alter the performance of the industries which they regulate, and that the effects of regulation need not simply be industry cartelization. In order to provide at least a partial test of this hypothesis, a study of the Canadian and U.S. air transport industries was undertaken.

In Part I, a model of the manner in which differing regulatory bodies can be expected to alter the performance of their respective industries was presented. Following the lines taken by Bain and others in the field of industrial organization, a relationship between the structure and the conduct of the industries under study was assumed to alter the performance of the industry. Thus, if the performance of the Canadian air transport industry was to differ from that of its United States counterpart, it would have to be the case that these differences would show up in different structures or in differing manners of conduct in these two industries. Having defined as the specific markets to be compared the

domestic, mainline scheduled, air passenger services, the areas for potential interference in the structural characteristics or the conduct of the carriers serving these markets were considered.

In the particular industries under consideration, the specific areas of structure which were considered to be important were classified into demand side characteristics and supply side characteristics. These were areas in which the regulatory body, if it had the power and was interested in so doing, could intervene. On the demand side, potential points of intervention included: (1) the level of buyer concentration; (2) the income distribution; (3) the ease of obtaining and using information about the product; (4) the tastes for the product; (5) differences in the product as provided by the carriers involved; and (6) factors which generally affect the level of demand and shape of derived demand schedules, including the availability of substitutes; the elasticity of the supply of complements; the elasticity of demand for the final product; and the relative importance of transport costs in the total cost of the trip. On the carriers' supply side, those structural characteristics in which the regulator might intervene were found to include: (1) the existence of interlocking relationships; (2) the degree of seller concentration; (3) the ease or difficulty of the entry into and exit from the mainline passenger industry and the implications of differing types of barriers to entry; (4) the creation of product differentiation; (5) the marketing or sales characteristics; (6) the degree of internal and external information flows; and (7) the objective functions of the carriers.

Similarly, the regulatory bodies might intervene in the manner in which the market participants respond to changes in the structural variables, in the level of demand for the outputs of fellow participants or in the level of supply by other participants in these markets. The possible areas of intervention into the conduct of the carriers and the buyers of air transport were considered once more from the standpoint of supply side and demand side categories. It was argued that there were essentially no areas of conduct in which the regulatory boards might be expected to intervene on the demand side of these particular markets. However, on the supply side, those areas of potential regulatory activity were deemed to include: (1) the pricing policies of the firms; (2) the extent of allowable price discrimination; (3) the product policy; (4) the level of coordination between the sales and product policies; (5) the research and development policies; and (6) any predatory practices in which the carriers engage.

In addition to the potential dimensions of regulatory intervention within a market or set of markets, the limitations of particular regulatory structures had to be considered. These were examined in Chapter 5. The result of this consideration was a set of expected goals for regulated industry performance dependent upon the objective function of the regulator, and completed the development of the model to be used in examining the data on United States and Canadian air transport.

Part II constituted the application of this model to the air transport industries in Canada and the United States. The first step in applying the model was to establish the proposition that the underlying economic circumstances of the two industries were sufficiently similar, both in the expected cost and the expected demand structures; that they could be used to effect a comparison of regulatory influences. It was determined that it was at least a reasonable assumption that, in the absence of contrary regulatory intervention, the two industries might be expected to have developed similar performance characteristics. It then remained to consider the levels of actual intervention and to search for performance differences.

Chapters 6 and 7 considered the nature of regulatory intervention which was possible given the limitations imposed by the structures of the United States' and Canadian regulatory bodies, respectively. This was carried out in terms of the above-mentioned categories of structural characteristics and dimensions of conduct with which the regulatory body might be concerned. Thus Chapters 6 and 7 give the limits which are institutionally imposed on the regulatory bodies of the industries under consideration by elements exogenous to the production of air transport. Certain important differences in the two countries' regulatory environments were noted. These included particularly the existence of the Canadian 'chosen instrument' policy in the form of the crown carrier, Air Canada; less Canadian emphasis on an air transport development

impetus; the control over the frequency of service by the Canadian regulatory agency; and the role of the Minister in the development of regulatory policy in Canada.

Having considered the legislative constraints, the next step was to examine the choice of alternative actions available to the regulators. In Chapters 8 and 9 the actual types and circumstances of intervention which occurred within the specified time period were considered. From these considerations emerged a list of differences in attitude, approach, and therefore regulatory intervention, between the two regulatory structures. The expected industry performance differences which were expected to result were discussed in Chapter 10, and included lower coach class fares in Canada, less price discrimination, a higher degree of correspondence between price and level of cost curve, and a lower frequency of service in Canada set within the expected development of a national domestic service in both countries. In the main, the anticipated performance differences were found to exist, although in some cases the supporting data was suggestive rather than conclusive. The hypothesis that regulatory actions influence industry performance was, therefore, deemed to have received some support from the evidence of the air transport industries.

Caveats and Comments:

A number of comments on the results of the study are in order at this point.

First, although it has been argued that the form and style of regulatory structure can affect performance, it should not be inferred that there must therefore exist a unique optimal form of regulatory intervention. Performance goals which are considered best by one society may not be the same ones another society would prefer. Even agreement on the best goals and the appropriate emphasis to be placed on each will not necessarily imply a single least-cost method of obtaining them. Since societies have different mores, at least to some extent, an instrument which is fairly simply used in one economy, like that of the 'chosen instrument', may be less likely to work in another. For that reason, among others, there is no possible direct deduction that any one set of regulatory policies is a priori transferable in whole or in part to Canada without further consideration of the applicability of such policies.

Second, a regulated industry which has developed within the mantle of regulation ought not, in the opinion of the author, to be considered as a linear transformation of the industry which would have developed without regulation. That is, it is not a simple task to envision Canadian air transport as it would have developed in the absence of a regulatory body. One cannot, for example, blithely assume that in the absence of regulatory intervention firms would be willingly serving the

same markets they do under regulation. Nor is it, therefore, reasonable to assume that the demand curve in any one submarket would have the same level or shape, or that the cost structure of the carriers in a particular submarket would automatically be higher, or lower, or the same. For these reasons, this study has viewed the regulatory bodies as endogenous to the production of air transport in Canada and the United States: to test the hypothesis of the force of a regulatory body, the comparison was carried out between two regulated industries, and not against a hypothetical Canadian unregulated market.

Third, since the output unit, even if accepted as the passenger-mile, is not homogeneous across possible interpretations of increases (or decreases) in output, it is particularly hazardous to generalize about future expansion or contraction of the air transport industry. That is, an increase in passenger-miles resulting from a doubling of the number of people wishing to fly in each submarket served by the carriers would not be the same sort of increase as a doubling of the distance each passenger wished to fly. For instance, in order to adequately fill each of these different doublings in ton-miles demanded (at a given price), the carriers would almost certainly have to respond in different fashions. In the first case, there might need to be a doubling of flying (operational) services, while in the second case there might simply be a shift to long- from short-haul positioning. The first would thus cause a smaller decline in operating costs per passenger-mile

sold, than the second. On a per passenger basis, however, the first would cost less than the second, since in the latter case a given number of passengers would bear the cost increases. The implication of this is simply that one must be careful when attempting to extrapolate the results of the Canadian industry into a hypothetical larger (or smaller) industry, simply because the precise nature as well as the size of that expansion or contraction must be specified.

With these warnings in mind, certain conclusions can be derived from this study concerning the present Canadian regulatory structure and the structure of the mainline passenger transport industry in Canada.

(1) Given the high ratio of debt to equity capital on the part of Air Canada, that airline is likely to suffer obvious dollar losses in the case of rising interest rates. Carriers with a higher proportion of equity capital might not suffer such losses, since they can be buried in the form of lower retained earnings and other forms of non-payment to the holders of equity capital. This of course does not mean that the latter are necessarily in any sense better (or even differing) air carriers; however it might well be the case that people do prefer a crown carrier such as Air Canada not to generate accounting losses. If this were the case, perhaps some sort of artificial equity might be assigned to Air Canada for purely 'political' purposes, generating obvious (but entirely illusory) indications of improved carrier performance.

(2) There seems to be no evidence that the Canadian airline industry, at least to the mid 1970's, had performed in any manner which suggests inefficiency in terms of unreasonable levels of cost or fares, either in absolute terms or relative to the performance of United States carriers. There is available insufficient evidence of a public nature to compile comparative indicators of the level of quality of service, on the other hand, although it is likely that Air Canada, C.P. Air, and potentially the CTC, might be able to carry out such a study, if they have not done so already.

(3) The exact weightings of elements in the objective function of the crown carrier is not certain. Nor is it clear the extent to which a compromise between profit maximization as a stated goal, and zero-profit achievement, or some other floor level of profitability as is probably the practice, is necessary in order to develop an economically viable, low-cost carrier, pursuing developmental goals.

(4) It is not certain that the present goals of the regulatory instruments are viable, as a part of a long-run transport strategy. While the use of the crown carrier may in the short-run develop and serve markets which might not otherwise be served, and keep prices down to reasonable levels by competing on a system zero economic profit basis, and so on, it is not self-evident that this will in the longer run develop the sort of passenger traffic which society in fact wants. For example, might the capital investment in airports be diverted to rail projects, with

the job of passenger traffic movement being filled better by trains?
Ought the mainline air carriers to compete with the regional carriers in the future?

There seem to be certain stages at which the development of transport in the large must be reconsidered. With the development of a viable trans-Canadian air network, it would seem that the time may well have come, with prices increasing but not necessarily uniformly, to determine the future development of the Canadian transportation industries both in total and in terms of their respective parts. In the absence of such a comprehensive transport strategy, however, it would seem reasonable to determine the optimal size of the air transport facilities which would be expected to develop in the future. It has been argued by Jordan, for example, that the air carriers as they stand, under the influence of the regulatory bodies, have provided service at much higher prices in at least some markets than they would have in the absence of such regulation. The degree to which the present pattern of service, the types of service offered to passengers, etc., ought to continue in Canada is certainly open to choice. The existence of the crown carrier as a major policy instrument would allow a very rapid conversion of service from the present structure to any other viable alternative, if society were to so desire and back up such desires with financial guarantees, etc. There is every evidence to support the competence of the crown vis a vis the present pattern of service. Similarly, there

is no reason to expect, on the face of present evidence, that Air Canada's ability to service any new structure would be inferior to that of any of the private carriers.

Matters for Further Investigation:

While this thesis has attempted to answer a number of questions regarding the effects of regulatory intervention, concentrating specifically on mainline passenger air transport, there inevitably remain unanswered issues and in turn, arise new areas of interest. Among those matters are the following:

(1) To what extent does the nature of regulation depend upon societal constraints? If different social settings restrict the choice of regulatory structures and policies, what are the corresponding adjustments in the optimal use of resources and in the desired means of achieving given standards of industry performance? What is the actual current resource costs of regulation in the Canadian case as contrasted with the U.S. or other markets?

(2) More specifically, within which contexts will a chosen instrument policy work? To what degree must the instrument be free of day-to-day political interference? In what manner ought the carrier to respond to or be allowed to respond to its competitors? What limitations are imposed upon regulators if they are constrained to operate with (or without) the existence of a chosen instrument?

- (3) To what extent does the objective function of the crown carrier matter in terms of achieving a given set of regulatory goals and for the comparatively inexpensive maintenance of these standards?
- (4) How have the Canadian performance results differed from those in other countries with similar service patterns? In particular, how does the Canadian experience compare with that of countries like Australia, which also possesses a crown carrier and a private carrier on the domestic level, but which has a third carrier as the international flag carrier?
- (5) Given the various observed differences in performance in the Canadian market from those in the U.S. domestic trunk service, to what extent is it in fact possible for the Canadian market to develop differently from the U.S. market? That is, could Canadian carriers operate services which differ drastically in the level of customer services from those of their United States counterparts and still remain economically viable? Could regulatory intervention effect such differences if desired?
- (6) To what extent does the quality of service in the Canadian context differ from that in the U.S. markets (or in other markets)? Have there been more or fewer customer complaints per passenger or per passenger-mile? Have there been fewer or more cases of loss and damage of customers' property? If such differences do exist, why have they developed?

The questions listed above are not in any sense intended to be exhaustive. There remain many others, specific and general, both with regard to the mainline passenger air transport industry, and with regard to the regulation of industry in general. This thesis has examined the hypothesis that it is reasonable to expect that regulatory bodies, given a set of goals which derive at least in some part from the society within which they are situated, can alter the performance patterns of the industries which they regulate. It has been argued that the respective regulatory activities in Canada and the United States are sufficient to account for such differences in industry performances as lower Canadian fares for coach class service, lower service frequency, and higher load factors. Similarities in the types of service offered, the lack of evidence to demonstrate quality superiority or inferiority, and generally similar national market development are consistent with the hypothesis of similar market demand environments and cost structures. It was further argued that the behaviour of Canadian air transport regulators has been at least competent, although the direct evidence to test the absolute cost efficiency hypothesis is not available. Finally, on the basis of comparisons with other mainline air carriers in Canada and the United States, it was concluded that the performance of Air Canada, as the chosen instrument in Canadian regulatory policy, was nonetheless relatively efficient on a system basis.

BIBLIOGRAPHY

- Averch, H. and L.L. Johnson. "Behavior of the Firm Under Regulatory Constraint," American Economic Review, LII (December 1962), 1053-69.
- Bain, Joe S. Industrial Organization, (New York: John Wiley and Sons, Inc.) 1959.
- Baldwin, John R. The Regulatory Agency and the Public Corporation, (Cambridge, Massachusetts: Ballinger, 1975).
- Bator, F.M. "The Anatomy of Market Failure," Quarterly Journal of Economics, LXXII (August 1958).
- Becker, Gary S. "Crime and Punishment: An Economic Approach", Journal of Political Economy, LXXVII (1968).
- Canada. Aeronautics Act, Chapter A-3, Revised Statutes of Canada, 1970.
- Canada. Air Canada Act, Chapter A-11, Revised Statutes of Canada, 1970.
- Canada. Air Regulations, As Amended, SOR/61-10, Canada Gazette, 1961.
- Canada. Air Service Fees Regulations, Aeronautics Act, SOR/70-409, Canada Gazette, 1970.
- Canada. Air Transport Committee, Decision, Serial Numbers 2592, 2913, 3026, 3225, 3566, and 3833.
- _____. Order, Numbers 1970-A-23, 1971-A-360, and 1971-A-369.
- Canada. Canadian Transport Commission, General Order, Numbers 1967-1, 1968-2, 1969-3, 1969-4, 1970-5, 1971-6, 1972-7, 1972-1 Air, 1972-2 Air, 1972-3 Air, 1973-1 Air, 1973-2 Air, 1973-3 Air, 1973-4 Air, 1973-5 Air, 1974-1 Air, and 1974-2 Air.
- _____. Systems Analysis Branch, "Air Travel Projections, Canadian Domestic and Transborder 1971-1981," Research Publication 29, (Toronto: Canadian Transport Commission, 1972).
- Canada. Department of Finance, Economic Review, (Ottawa: Supply and Services, April, 1976).
- Canada. Department of Transport, Press Release, August 15, 1969: "Statement of Aviation Policy Principles".
- Canada. Federal Courts Act, Chapter F, Revised Statutes of Canada, 1970.

- _____. Press Release, February 14, 1974: "Statement on the Change in Transcontinental Route Policy for CP Air".
- _____. November 23, 1973: "Statement on Air Policy".
- Canada. Dominion Bureau of Statistics, Civil Aviation, Catalogue Number 51-202, (Hull: Queen's Printer, 1967, 1968 and 1969).
- _____. House of Commons, Reports of the Standing Committee on Transport and Communications, (Ottawa: Queen's Printer and Information Canada), Sessions 27/1, 28/1, 28/2, 28/3, 28/4, 29/1, 29/2, and 30/1.
- _____. Federal Court Act, Revised Statutes of Canada, 1972 C.I.
- _____. National Transportation Act, Chapter N-17, Revised Statutes of Canada, 1970.
- Canada, Statistics Canada, Air Carrier Operations in Canada, Catalogue Number 51-002, (Ottawa: Information Canada, 1971-1975).
- _____. Air Carrier Financial Statements, Catalogue Number 51-206, (Ottawa: Information Canada, 1970-1975).
- _____. Trans-Canada Airlines Act, Chapter 43, Revised Statutes of Canada, (1937).
- Capron, W. et. al. Technological Change and Welfare in the Regulated Industries, (Washington, D.C.: Brookings Institution, 1971).
- Carter, A.M. Theory of Wages and Employment, (Homewood, Ill.: Richard D. Irwin Inc., 1959).
- Caves, R.E. Air Transport and Its Regulators, (Boston: Harvard University Press, 1962).
- Citizen Publishing Company versus U.S. 394, U.S. 131.
- Coleman, James S. Foundations for a Theory of Collective Decision Making", American Journal of Sociology, 71 (1955-1956).
- Coke, Robert A. The Economics and Regulation of Commerical Air Transportation with Particular Reference to Manitoba and the "Third" Level Carriers, M.A. Thesis, (University of Manitoba, 1973).
- Currie, A.W. Economics of Canadian Transport, (Toronto: University of Toronto Press, 1967).
- Dartmouth College Case, 4 Wheaton 518, 1819.

- Denver Service Case, 22 CAB 1178, 1955.
- Dhruvarajin, P.S. and R.F. Harris, et. al., "A Productivity Study of the Canadian Airline Industry," Canadian Transport Commission, Research Branch Report No. 10-78-03, (Ottawa: March, 1978).
- Eads, George C. The Local Service Airline Experiment, (Washington, D.C.: The Brookings Institution, 1972).
- Federal Reserve Bank of St. Louis, Press Release.
- Fellner, W. Competition Among the Few: Oligopoly and Similar Market Structures, (New York: Knopf, 1949).
- Fortman, Bastiaan de Gaay, Theory of Competition Policy: A Confrontation of Economic, Political and Legal Principles, (Amsterdam: North Holland Publishing Company, 1966).
- Harder, J. Mathematical Theory of Economic Behaviour, (Reading, Massachusetts: Addison-Wesley, 1971).
- Jordan, W.A. Airline Regulation in America, Effects and Imperfections, (Baltimore: Johns Hopkins Press, 1970).
- _____. "Comparisons of American and Canadian Airline Regulation", unpublished paper presented at the Society of Government Economics Sessions, Allied Social Sciences Association, (Toronto, December 28, 1972).
- _____. "Regulatory Research", unpublished paper presented to the Conference on Research on the Regulatory Process in Canada, (McGill Management Institute, December 28 and 29, 1975).
- Keeler, T.E. "Airline Regulation and Market Performance", Bell Journal of Economics and Management, Vol. 3, No. 2, (Autumn, 1972).
- Kliman, M.L. "The Setting of Domestic Air Fares: A Review of the 1975 Hearings," Canadian Public Policy, Volume III, No. 2, (Spring, 1977).
- Lamberton, D.M., ed. Economics of Information and Knowledge, (London: Penguin, 1973).
- Lipsey, R.G. and Kelvin Lancaster "The General Theory of the Second Best", Review of Economic Studies, Volume 24, (1956-1957).
- Locklin, P. Philip Economics of Transportation, (Georgetown, Ont.: Irwin-Dorsey Limited, 1972).

- Lowenfeld, Andreas F. Aviation Law, (New York: Matthew Bender, 1972).
- Macdonald, A. Smith "Developments in Canadian Aviation and the Activities of the ATB", The Institute of International Law, (McGill University, December 6, 1954).
- Miller, J.C. and G.W. Douglas Economic Regulation of Domestic Air Transport: Theory and Policy, (Washington, D.C.: The Brookings Institution, 1974).
- Porter, J. The Vertical Mosaic, (Toronto: The University of Toronto Press, 1965).
- Posner, Richard A. Economic Analysis of Law, (Boston: Little, Brown and Company, 1972).
- Purdy, H.L. Transport Competition and Public Policy in Canada, (Vancouver: University of British Columbia Press, 1972).
- Rajani, S. "Comparison of the Growth of U.S. and Canadian Domestic Air Travel", Canadian Transport Commission Research Publication, Report No. 58, (Ottawa, 1972).
- Redford, E.S. The Regulatory Process, (Austin: University of Texas Press, 1969).
- Rink, John A. Regional Air Carrier Economics and Canadian Public Policy with Particular Reference to TransAir Ltd., M.A. Thesis, (University of Manitoba, 1974).
- Robinson, J. "What is Perfect Competition", reprinted in W. Breit and Hochman, H.M. Readings in Microeconomics, (New York: Holt, Rinehart and Winston, 1968).
- Russell, M. "Resource Allocation in Utility Certification Decision", Michigan State University Utility Studies, (East Lansing, Michigan: Michigan State University, 1969).
- Sampson, Roy J. and Martin T. Farris, Domestic Transportation: Practice, Theory and Policy, (Boston: Houghton Mifflin, 1966).
- Scherer, F.M. Industrial Market Structure and Economic Performance, (Chicago: Rand McNally & Co., 1970).
- Schubert, G. The Public Interest, (Illinois: Free Press, 1966).

- Sobieniak, J.W. "Forecast of Passenger Travel in Canada's Domestic Long-Haul Air Market", CTC Research Publication, Report No. 44, (July, 1972).
- Sosnick, S.H. "A Critique of the Concepts of Workable Competition", Quarterly Journal of Economics, Volume LXXII, (August, 1958).
- Stigler, G.J. "The Optimum Enforcement of Laws", Journal of Political Economy, Volume 78, (1970).
- _____. and Claire Friedland, "What Can the Regulators Regulate", Journal of Law and Economics, Volume V, (October, 1962).
- Studnicki-Gizbert, K.W. "The Structure and Growth of the Canadian Air Transport Industry", presented at the Canadian Political Science Association Conference on Statistics, (1960).
- Thompson and Smith, Public Utilities Economics, (New York: McGraw Hill, Inc., 1941).
- United States Civil Aeronautics Board, Air Carrier Financial Statistics, (Washington, D.C.: U.S. Government Printing Office, September, 1974).
- _____. Domestic Passenger Fare Investigations, Phases 1-9, (Washington, D.C.: CAB).
- _____. 1973 Handbook of Airline Statistics, (Washington, D.C.: U.S. Government Printing Office, September, 1974).
- _____. Press Releases, (1969-1975).
- United States Code, Annotated, 72 Stat. 731 (as amended) U.S.C. 1301.
- United States Senate and House Debates, S. 2, 1937 and H.R. 5234, 1937.
- United States versus The New York Great Atlantic and Pacific Tea Co., et. al., 67 F. Supp., 626, 1946.
- Warford, J.J. Public Policy Toward General Aviation, (Washington: Brookings Institution, 1971).
- Wilson, G. Essays on Some Unsettled Issues in Transportation, (Washington, D.C.: The Brookings Institution, 1966).
- Wolff Packing Company Case, 262 U.S. 522, 1914.