AN ECONOMIC ANALYSIS OF CANADIAN PARTICIPATION IN THE NORTH ATLANTIC AIR TRANSPORT MARKET: 1947-1986

by

© Gordon Davies

A thesis
presented to the University of Manitoba
in fulfillment of the
thesis requirement for the degree of
Ph.D.
in
Economics

Winnipeg, Manitoba

ISBN 0-315-47903-5

AN ECONOMIC ANALYSIS OF CANADIAN PARTICIPATION IN THE NORTH ATLANTIC AIR TRANSPORT MARKET: 1947 - 1986

BY

GORDON DAVIES

A thesis submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfillment of the requirements of the degree of

DOCTOR OF PHILOSOPHY

I hereby declare that I am the sole author of this thesis.

I authorize the University of Manitoba to lend this thesis to other institutions or individuals for the purpose of scholarly research.

Gordon Davies

I further authorize the University of Manitoba to reproduce this thesis by photocopying or by other means, in total or in part, at the request of other institutions or individuals for the purpose of scholarly research.

Gordon Davies

The University of Manitoba requires the signatures of all persons using or photocopying this thesis. Please sign below, and give address and date.

ABSTRACT

This thesis analyses passenger air traffic between Canada and transatlantic points, the performance of Canadian air carriers in this market, and the effectiveness of Canadian government policies in promoting Canadian interests. An industrial organization approach is used in combination with historical and analytical methods. Substantial data series for fare movements and carrier performance were developed to provide an empirical base.

The thesis shows that: the market became the most important transoceanic air transport market as international travel revived and a major intermodal shift from sea to air occurred, but growth slackened in the mid 1970s; with changes in the relative importance of Canada and Europe as sources of effective demand, continued expansion of this market has depended on a strong Canadian dollar and a relatively favourable Canadian inflation rate; the growth pattern of the Canadian North Atlantic market and the balance between scheduled and charter traffic differ from those in the overall North Atlantic market; in scheduled markets since the early 1970s Canadian carriers' load factors have been better than average for major North Atlantic carriers, in part due to pooling; their 40% to 50% market share of the Canadian

transatlantic market has been consistently higher than the US carriers' share of their transatlantic market; Canadian carriers led by Wardair gained dominance in the Canadian North Atlantic charter market; Canadian carriers have been progressive in the use of technology and in price and service marketing; the Caribbean and other markets have interacted through Canadian carriers with the North Atlantic market; Canadian government policy has contributed significantly to the strong international performance of Canadian carriers.

In conclusion, this thesis has revealed distinct patterns of passenger air traffic in the Canadian North Atlantic market, an impressive strength and range of Canadian carrier performance in this market, and effective Canadian government policy in support of Canadian interests.

ACKNOWLEDGEMENTS

I wish to thank all the people whose combined contribution made the completion of this thesis possible. I will begin by expressing my thanks for all his help, encouragement, and assistance to my supervisor, Professor R. F. Harris. I also received much useful advice from the other people who sat on my committee: Professor W. S. Good, Professor R. C. Bellan, and Professor K. Dennis. Thanks are also appropriate for my external examiner, Roderick Heitmeyer of ICAO, for his input and painstaking examination of the thesis. Research done by Professor Martin Bradley of the McGill Institute of Air and Space Law and his then research assitant, Mr. J. M. Corrigan, was extremely useful in the development of the chronology of events. In Ottawa, Mr. M. Burchell of the Aviation Statistics Centre located much useful information on request, and I would also like to thank Ms. G. Pickett of the Air Transport Committee for her assistance. In Winnipeg I could always count on the fullest possible co-operation from Mr. E. A. Vitovec of the Transport Canada Library, the Statistics Canada Office, and the Government Documents Section of the University of Manitoba Dafoe Library. During my studies I received financial assistance from Professor Harris based on his research grants from the Centre for Transportation Studies, and

subsequently the Transport Institute, University of Manitoba. I must also thank my parents, Robert and Rosemary Davies, and, for all her patience, Carol Eileen.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter I

INTRODUCTION

This thesis is a study of Canada's participation in the North Atlantic air transport passenger market since 1947. Passenger traffic comprises the bulk of the total air traffic market on the North Atlantic; cargo flights comprise only a very small part of the total number number of flights. For example, flights devoted primarily to cargo were only seven per cent of all flights in 1966 (IATA 1966c, 42) and in 1983 the percentage was only five percent (IATA 1983c, 24). Most cargo is carried on scheduled passenger flights because of the frequency of passenger flights and the large volume of cargo capacity available on wide-bodied aircraft. Cargo can contribute significantly to the profitability of scheduled services. This study will, however, be limited to passenger traffic.

The thesis seeks to answer two basic questions about the evolution of the Canadian North Atlantic market for air passenger transport. First, how and why has the market evolved to its current character and size and how is it likely to continue to evolve? Second, have the actions of the Canadian carriers and policies of the Canadian government been effective in developing Canadian participation in this mar-

ket? Related to this, what lessons are to be learned from this experience?

These basic questions raise several sub-questions. Canada has had one or more "chosen instruments" on the North Atlantic since the Second World War. Has their use been appropriate? How has the "Canadian system" done in comparison with that of other countries? How internationally competitive are the Canadian carriers? What has been the effectiveness of the Canadian government in negotiating bilaterals which guard the Canadian interest and how good has been the management of Canadian gateways? What has been the impact of other regions on the evolution of the market? What have been the determinants of the development of the market and how have they changed over time? More specifically, what roles have demand, competition, and technological change played in the market? What has been the nature and role of the development of fares? Has Canadian public policy been constructive in this environment and have the Canadian carriers been enterprising and effective?

This thesis uses an historical-analytical approach in answering these questions. The research was guided by the basic paradigm used industrial organization analysis. This paradigm postulates that the success of firms is the result of their conduct, which is in turn shaped by the structure of the market, which is rooted in the basic conditions of the market. Feed-back can occur when the analysis stretches

over a long period of time so that, for example, conduct can alter market structure. The market being examined is one where substantial change has occurred in its basic conditions. If it is to be understood and the actions of certain of its policies and firms are to be evaluated then this is best done by examining the historical process of change. Particularly important in determining the shape of the market and the performance of Canadian carriers have been the basic demand conditions shaping the level and geographical locations of demand, the institutional conditions under which transatlantic carriers have been permitted to operate, and the technology, as embodied in aircraft, with which carriers have operated. The successful performance of Canadian carriers is reflected in their ability through price and non-price tactics to maintain a load factor equal to or better than other major carriers in the North Atlantic market and in their ability to gain and hold market share.

The international air transport industry, during the period under review in this thesis, has been conditioned by major underlying changes in technology and strong demand support. Governments and city pair markets have structured the industry into an oligopolistic pattern. Airline conduct has been marked by non-price product differentiation rivalry based on aircraft choice and price competition directed at the main types of service - scheduled and charter. Marketing of airline service has led to the offer of a variety of price and service "packages" to passengers. Relative air-

line performance has been demonstrated by market share and load factor results.

The market for passenger transport by air between Canada and Europe and beyond Europe is exceedingly complex and throughout the period has interacted with other markets for air transport. The chapters of this thesis will isolate and separately examine the most important factors.

Before 1978 the International Air Transport Association (IATA) defined North Atlantic air traffic as air traffic that flew between the Americas and Europe and/or Africa and/or the Middle East via a commercial stop, a "gateway", in North America north of Miami, Nassau, and Bermuda. As of 1978 traffic via Miami was included in their definition of North Atlantic traffic.

For the purposes of this thesis the Canadian North Atlantic air transport market is defined to include traffic originating or ending in Canadian gateways and travelling directly to foreign gateways across the North Atlantic Ocean. Canada's first gateway was Montreal. Service was initially available from Montreal to two gateways in Europe, Prestwick and London.

Throughout the period, the market for air transportation on the North Atlantic has been the largest intercontinental air transport market in the world. In 1982, for example, IATA reported that carriers flew 100.9 thousand million pas-

senger kilometers over the North Atlantic. The next largest market was that between Europe and the Far East. In this market 30.1 thousand million passenger kilometers were flown by non-polar routes and another 10.7 thousand million were flown by polar routes for a total of 40.8 thousand million passenger miles, about one half the former market.

The North Atlantic market has grown greatly in size during the period examined by the thesis. For example, between 1956, the date of the first annual World Air Transport Statistics, published by IATA, and 1983 there was an increase of over 2,200 per cent in the total number of passengers carried. In the former year, fifteen IATA carriers flew 834,790 scheduled and charter passengers on the North Atlantic (IATA 1956c, 42) and in the latter year over fifty carriers transported 19,689,000 scheduled and charter passengers on the North Atlantic (IATA 1983c, 24).

Of particular relevance to this thesis is that portion of the market which has been defined as the Canadian North Atlantic market. When transborder traffic to the United States is excluded, the majority of international air passengers carried by Canadian carriers are carried on North Atlantic and polar routes between Canada and Europe. In 1982, for example, North Atlantic and polar traffic comprised 1,016,357 out of 1,683,658 international scheduled passengers and 867,688 out of 1,253,391 international charter passengers carried by Canadian carriers, transborder traffic excluded (Statistics Canada 1982b).

Three Canadian carriers have played major roles in the North Atlantic market. These were Air Canada (initially TCA), Canadian Pacific Airlines (which became Canadian Airlines International in 1987) and Wardair, a specialist in charter traffic. Several other Canadian carriers have also participated in this market.

The Canadian government has been deeply involved in the evolution of the Canadian North Atlantic market. It affected the operation of air carriers through the bilateral agreements on air transportation that it negotiated with other countries and through its ability to determine the destinations that a Canadian carrier served. Further, it played a strategic role in the selection of carriers and the nature of their participation in international markets.

The volume of traffic between Europe and Canada reflected the many historical, family, and economic ties between them. In 1962, 378,081 of 522,273 international air passengers on scheduled airlines (including 45,890 who paid bulk fares, but excluding all transborder traffic) travelled between Canada and Europe (Statistics Canada 1962e). In 1982 1.809 million out of 3.209 million Canadian and foreign travellers between Canada and other countries (excluding transborder traffic) travelled between Canada and Europe (Stat. Can. 1984k).

Chapter II examines the nature of international aviation, explains the difference in organization of non-scheduled and scheduled traffic, and states the role of international agreements and international organizations in air traffic.

Chapter III is composed of four sections which examine various aspects of the evolution of the Canadian North Atlantic air passenger market. The first section sketches the main trends in passenger travel between Canada and Europe since the Second World War. The section examines the intermodal shift to air transport on the North Atlantic and the shifts in the character of air traffic service. The second section documents the entry and exit of carriers into and out of the Canadian North Atlantic market. The third section follows the evolution of the fare structure categories in the North Atlantic market. The fourth section discusses the evolution of the three main components of the market for travel between Canada and Europe: Canadian travellers to Europe, European travellers to Canada, and European immigrants to Canada. It also examines the movement of national levels of inflation and the movements of the exchange rates for Canada and the major European countries and looks at their possible relation to changes in the main components of demand beginning in the early 1970s.

Chapter IV examines the evolution of the civil aviation technology available for use on the Canadian North Atlantic. It is concerned with the choices made by Canada's carriers

for long range aircraft and with the implications of those choices for the carriers and the market.

Chapter V examines the evolution of Canadian government policy. Because of the important role that international treaties and agreements play in international air travel government policy always has an important effect on any international air passenger market. On the Canadian North Atlantic this role is even more important in the Canadian context because the Canadian government chose to limit the access of its own national carriers to European destinations. The first section looks at Canada's role in the negotiations that led up to the "First Bermuda Agreement" between the US and the UK. The second follows the process that opened Europe to Canadian carriers while increasingly opening Canada to European air carrier penetration. The third section discusses the evolution of the Canadian government's policy towards allocating destinations in Europe and beyond Europe to Canadian carriers.

Chapter VI studies the behaviour of Canada's scheduled carriers. The first section examines Air Canada's expansion into Europe and CPA's successful attempt to gain entry into this market in the face of officially stated government policy and its subsequent development of European services. Wardair's and Nationair's participation in the market is also noted. The second section follows the development of the pooling phenomenon on the Canadian North Atlantic in

detail from its appearance until the early 1980s. The third section examines the performance of Air Canada, CPA, and Wardair in their scheduled operations on the North Atlantic.

Chapter VII looks at the history of charter traffic on the Canadian North Atlantic. The emergence of charter travel on the Canadian North Atlantic occurred in response to changes in technology and government policy. This emergence brought about many changes in the way scheduled carriers carried out their business and brought about the rise to international prominence of a new third Canadian international carrier, Wardair. The first section looks at the evolution of charter traffic on the Canadian North Atlantic. The second section examines the role of Canadian carriers in this market, particularly Wardair. The third section discuses the explosive emergence of ITC, inclusive tour charter, traffic and its implications for the Canadian North Atlantic market.

Chapter VIII is concerned with the interaction of the Canadian North Atlantic market and other markets, in particular those markets whose peak and low seasons differ from that of the Canadian North Atlantic. The Canadian North Atlantic is a strongly seasonal market and any carrier wishing to operate in it will wish to have another market in which it can employ its surplus capacity during the Atlantic's low season. The solutions of Air Canada, CPA, and Wardair are each explored.

Chapter IX examines the evolution of the institutional structure for rate-making on the Canadian North Atlantic. The first section outlines the method by which scheduled fares were set prior to 1978. The second looks at strains on the system that emerged as charter services expanded on the North Atlantic. The third section follows the build up of US deregulatory pressure on IATA. The fourth outlines the resolution of the crisis and the resulting restructuring of the system for rate-making on the North Atlantic.

Chapter X studies the evolution of fares on the Canadian North Atlantic from 1947 to 1987. The first section follows the evolution of scheduled passenger fares throughout the period. The second looks at the role taken by Canadian carriers, Air Canada in particular, on several crucial occasions in the setting of fares on the North Atlantic. The third compares fares and costs on the North Atlantic at several points in time in the last two decades. The fourth will examine the evolution of charter fares, particularly as they relate to the Canadian North Atlantic.

Chapter XI reviews and evaluates Canadian policy and Canadian carrier performance in the light of the historical evidence and economic analysis previously presented. It also reflects and comments briefly on recent changes in government policies. Finally, Chapter XII contains the thesis conclusion.

Chapter II

INTERNATIONAL AVIATION AND THE NORTH ATLANTIC MARKET

This chapter begins by distinguishing between scheduled and charter services. It then outlines the concept, "freedoms of the air". The nature of bilateral air agreements between countries is examined and the practise of "pooling" is outlined. Attitudes to non-scheduled operations on the North Atlantic are reviewed and differences in the cost structures of scheduled and charter operations are explored. The question of the values of the demand elasticities for air passenger transport on the North Atlantic is then examined and the seasonal nature of the demand for passenger transport on the North Atlantic is brought out. Finally the existence of an "S-Curve" for air passenger carriers is noted and its implications are explored.

2.1 THE CONCEPTS OF SCHEDULED AND CHARTER SERVICES

International passenger traffic on the Canadian North Atlantic has two main parts, scheduled traffic and charter, or non-scheduled, traffic.

Scheduled services follow regular timetables and their operation is governed by a system of bilateral agreements

and by a number of multilateral agreements which regulate various areas of concern. Charter services traditionally only operate when an aircraft is chartered to make a specific trip and individual permission is obtained from both countries concerned.

2.2 THE FREEDOMS OF THE AIR

Countries claim sovereignty over the airways above their territory and claim the right if necessary to force down or destroy any trespassers. As a result, the concept of a number of specific "freedoms of the air" has evolved which countries may extend to the representatives of other states to permit air service.

Eight "freedoms" have been defined. The first freedom is the right to fly over the territory of another state. The second freedom is the right to land in that state for a "technical stop" to obtain something such as fuel or repairs, but not to discharge or pick up passengers. The third freedom is the right to set down passengers from the home country and the fourth freedom is the right to pick up passengers for the home country. The fifth freedom is the right of a nation's carrier to pick up or set down extra-national traffic. Nation A's airline, for example, when enroute from A via B to C, stops in B and pick up passengers which it discharges in C, or, when returning from C via B to A, it carries passengers from C who are set down in B. The

sixth freedom[1] permits A's airline to pick up in various other countries passengers who wish to travel to C, transporting them first to A, and then from A transporting them onward to C. Seventh freedom traffic occurs when traffic is moved between two countries by the airline of A without reference to the territory of A, for example, if a Canadian airline carried traffic between Kenya and Uganda but did not serve either country from Canada. Eighth Freedom traffic occurs when A's airline has the right to pick up passengers at one point in C and carry them onward to a second point which is also in C. It is sometimes referred to as cabotage, a term carried over from maritime transport. Bilaterals are normally concerned with third and fourth freedom rights. Fifth and sixth freedom rights are less frequent, but may become significant for airline system development, while the last two freedoms rarely arise.

2.3 BILATERAL AIR AGREEMENTS BETWEEN COUNTRIES

At the end of World War Two it was hoped that there could be a multilateral exchange of the various rights concerning civil aviation. In 1944 the representatives of 52 states were present at a conference in Chicago but agreement could not be reached on an exchange of traffic rights nor on the

---

[1] Countries for which such forwarded traffic is important will often insist that sixth freedom traffic does not exist and that only third and fourth freedom traffic is involved. They argue that traffic is picked up in the initial state and discharged in A under the third and fourth freedoms and is then picked up in A and discharged in C again under third and fourth freedoms.

amount of control that states could impose on tariffs or capacity. The Chicago Conference, however, did produce The "International Air Services Transit Agreement". This provided for a multilateral exchange of the first two freedoms. The most notable non-signatory to this agreement was and is the USSR. The Chicago Conference also developed the "Convention on International Civil Aviation". This "provided the framework for the orderly and safe development of international air transport ... through its various articles and Annexes ... which deal with every aspect of the operation of aircraft and air services both in the air and on the ground" (Doganis 1985, 26). Finally it created an international organization to provide for the future inter-governmental discussions of important aviation questions and to establish a basis for a co-ordinated evolution in technical and operational standards and practices, the International Civil Aviation Organization (ICAO), now part of the UN system of organizations. This organization would also assist many states to develop their civil aviation systems and their civil aviation infrastructure.

In the absence of a multilateral system to regulate the movement of passengers, nations began to make bilateral agreements between themselves.

The main body of a bilateral air agreement will usually specify the circumstances under which, and the methods by which, capacity will be regulated. On the North Atlantic it

has traditionally been the practice that capacity was to be reviewed on an **ex post** basis to prevent the emergence of any unacceptable imbalance in the carriage of passengers between the carriers of the two states. In other parts of the world, capacity has sometimes been specified down to the type of equipment used and the number of flights that the designated airline may make.

A bilateral will specify how rates are to be set for transport between the two states. On the North Atlantic it was traditional that the rates to be charged were determined by the Traffic Conference system of setting fares developed by the International Air Transport Association. Article 6 of the appendix to Canada's 1947 bilateral air agreement with the U.K., for example, specified

> Tariffs to be charged by the designated airlines referred to in this annex shall be agreed in the first instance between themselves, having due regard to the rate fixed by any Tariff Conference of airlines operated in this area.

The International Air Transport Association was formed by the international airlines at a meeting in 1945 at Havana. During the greater part of its existence its membership was restricted to scheduled carriers and this remains true in practice to the present. While IATA was concerned with all aspects of the needs of its members, two of the most important functions that evolved were its role as a clearing house for interline revenues and its convening of "Traffic Conferences" at which the tariffs to be charged and various

related conditions and procedures are agreed upon by its members. These related conditions and procedures include such items as conditions of service and passenger and cargo agency matters. IATA also has acted to co-ordinate various other aspects of airline operations and it may represent its members in negotiations or relations with various government authorities.

A bilateral air agreement between two countries will also specify the procedure to be followed when disagreements arise. Any disagreement between the carriers on rates will ultimately rise to the inter-governmental level since all tariffs must ultimately be approved by the governments of both countries. For situations where the two governments cannot reach agreement, Canada's bilaterals generally provide for a system of arbitration which usually includes the involvement of the ICAO.

Usually appended to the bilateral agreement is an annex specifying the traffic rights which are granted to the airlines of the two parties. Frequently the city-pairs between which the airlines of the two parties can operate are different. The airline of A can perhaps operate from any point in A to the city X in B and the airline of B is permitted to operate from X and Y in B to the city Z in A.

It is unusual for the bilateral to specify which airlines will operate between the designated points. Typically the

agreement will simply state that each party may designate one airline to exercise the rights granted and received. Some bilaterals permit more than one carrier to be designated by one or both parties.

The annex to a bilateral may also state that the designated airlines have the right to pick up and/or set down traffic for points between or beyond the two states immediately concerned. Such rights are Fifth Freedom rights. They can not be exercised, however, until permission to do so is secured from the points concerned. Such Fifth Freedom rights also frequently have capacity constraints imposed upon them.

A bilateral may also have appended to it at the time of its agreement or subsequently, one or more "memoranda of understanding" or "exchange of notes". These will amplify or modify aspects of the agreement and may be kept confidential. Should one country wish to change the bilateral, for example, by changing a city its airline may serve to another city, the other country may agree to make the desired change through an exchange of notes or it may refuse any such change leaving it up to the first party to denounce the existing bilateral. This would force the negotiation of a new formal bilateral, or some other less formal agreement, to prevent a cessation of air services following the end of the bilateral.

Instead of operating under a bilateral, airlines sometimes operate under licences issued by the necessary governments. CPA and Iberia operated under licences between Canada and Spain for many years. CPA also frequently operated under licence in South America.

Aircraft must meet all the performance and maintainance standards of any country which they serve. These standards are determined by the aviation authorities of each country individually, but this is usually done in line with the "International Standards and Recommended Practices" of ICAO, the International Civil Aviation Organization. These ICAO standards and practices are included as a series of annexes to the "Convention on International Civil Aviation".

A practice that may be required in a bilateral, or which may be entered upon by two or more international carriers if the laws of their countries permit, is "pooling". A pooling agreement provides most commonly for airlines to jointly provide capacity and share the revenue produced under some formula. When traffic is not adequate for more than one airline to operate, where two (or more) are permitted to operate, the airlines may form a "revenue cost" pool. In such a pool only one of the airlines operates the service but the costs and revenues are shared on some stated basis. Another more common pool is a "revenue pool". In such a pool the capacity to be offered by each member is agreed and revenue is shared according to this capacity. Usually

departure times, etc. are co-ordinated to allow the best possible use of the capacity allocated. Frequently the theoretical revenue shared is not the actual revenue received by the the partners but is a notional revenue based on an accounting unit times the number of revenue passengers travelling in a particular class. A pool may also limit the amount of revenue that will be transferred. Typically a pool will be formed for a particular time period of one or more years. The agreed upon levels of capacity and agreed-upon accounting unit(s) are usually examined more frequently, perhaps quarterly. The account is commonly settled monthly. Such pools may cover passenger and/or freight services.

Airlines sometimes sell the rights to operate between particular points to other carriers in return for a payment or royalty. Such a payment may be a fixed sum or may vary with the traffic carried.

2.4 NON-SCHEDULED SERVICES

Non-scheduled rights are only rarely included in formal bilateral negotiations between governments and enshrined in formal bilateral agreements. Unlike Article 6 of the Chicago Convention which required "special permission or authorization" from the destination country for scheduled services, Article 5 gave the aircraft of other contracting states, which aircraft were not engaged in scheduled international services, the first two freedoms and

> the privilege of taking on or discharging passengers, cargo, or mail subject to the right of any State where such embarkation or discharge takes place to impose such regulations, conditions or limitations as it may consider desirable.

Non-scheduled services have never been defined explicitly.

The attitudes of states to incoming non-scheduled flights have varied considerably. A few, such as Belgium following the Second World War, have prohibited them entirely (F. Marx, 1981, 140). Others, particularly tourist destinations like Spain, have very readily authorized non-scheduled services in a liberal "open skies" policy (Doganis 1985, 39). Both the US through its CAB, and the UK, through its Air Transport Licencing Board, brought non-scheduled operations under some form of national regulatory control (Doganis 1985, 39). In Canada, the Air Transport Board, followed by the Canadian Transport Commission, was made responsible for regulating international non-scheduled services.

Charter carriers played a very important role on the North Atlantic because their lower costs of operation permitted them to offer an alternate method of crossing the North Atlantic to that provided by scheduled carriers at a lower price. This ensured that a form of price competition would be provided to the scheduled carriers of IATA.

By the middle of the 1960s the aircraft of the major charter carriers on the North Atlantic were basically the same as those of the scheduled carriers. This was particu-

larly true of Wardair which would evolve into the dominant carrier in the Canadian North Atlantic charter market.

When the equipment is basically the same, the flight operating costs, which are the largest single element of direct costs, are likely to prove much the same. Charter operators sometimes use older aircraft acquired on the second-hand market. This eases entry into the market through reduction of capital requirements, whether by lease or purchase, but increases direct operating costs such as fuel or maintenance. Unlike the early days of charter, pilots' unions have generally succeeded in ensuring that the salaries of pilots are basically comparable for handling similar aircraft. In 1985, for example, the average salary paid by Wardair to its pilots and co-pilots was higher than that paid by Air Canada or CPA, which was probably due to Wardair pilots on average flying larger aircraft than the pilots of the other two airlines. Indeed, the average salary paid by Wardair to its other flight personnel was also higher than that paid by Air Canada or CPA (Stat. Can. 1985b, 39, 41). As long as a charter carrier is flying a sizeable number of flights to a particular destination, fuel costs are likely to be similar, although if only a few flights are made to a particular destination it may not be able to secure as favourable a price as that charged scheduled carriers. Insurance and en-route navigational charges will be similar. Maintenance costs are likely to be similar for both types of

carriers. Carriers large enough to do their own maintenance may be able to make some savings which are not open to smaller carriers. Small scheduled carriers, however, will be similarly placed to charter carriers which are rarely large enough to do their own maintenance.

One possible advantage that charter carriers may exploit is the use of less expensive airports, particularly at home and where a major tourist center such as London offers a number of airports. In the case of London, which is served by Heathrow, Gatwick, and Luton, a carrier can save 31 per cent on its airport fees by using Luton instead of Heathrow, 42 per cent by using Gatwick, rising to 84 per cent by using Gatwick on Tuesdays and Wednesdays (Doganis 1985, 138-139).

Another possible area where a charter carrier may be able to gain an advantage is the utilization of its aircraft fleet. Charter passengers demonstrate a greater willingness to fly at odd hours than do scheduled passengers. Thus during peak seasons charter carriers are likely to use their aircraft more hours each day. They likely face, however, a more sizeable difference between peak and off-peak seasonal demand in any particular market. If, however, they compete in two different markets which have complementary peak periods, as Canadian charter carriers are, for example, able to do by operating on the North Atlantic in summer and to "Fun in the Sun" destinations in winter, they may be able to secure annual higher utilization. A scheduled carrier which

also operates charters may, on occasion, have superior utilization to that of a charter specialist. For example, CPA had utilization figures for its long-range wide bodied aircraft which exceeded Wardair's by about one revenue hour per day in a recent year (ICAO 1984b, C-2, C-3).

These two areas, airport charges and depreciation charges, only make up a relatively small proportion of direct costs, perhaps 10 per cent in 1984, and in neither are savings certain. There may also be some advantage on personnel costs and a disadvantage on fuel costs. Thus "the differences in direct costs are likely to be no greater than might exist between two scheduled airlines flying on that route" (Doganis 1985, 140).

Charter carriers have had historically a major advantage with indirect costs. Since their flights to any destination are likely to be seasonal they do not need to maintain year round-staff to handle the aircraft, its passengers, and their baggage at charter destinations. They will also not require the permanent acquisition of equipment and facilities that such staff would need. A proportion of these gains, however, may be lost through the costs associated with the rental of equipment or the subcontracting of personnel, etc.. The charter carrier may also employ fewer cabin staff and offer less in the way of inflight meals. Where charter carriers rent out their aircraft during the off peak periods they may also make considerable use of sea-

sonal staff hired at lower wages or just not retained during off-peak periods. Charter carriers are also highly unlikely to ever be responsible for interlining passengers over night. Since they do not sell, in principle, directly to the public they do not have the costs which are associated with ticketing, sales and promotion. The carrier need only supply its charterer with a book of tickets. It needs no retail sales offices, nor computer reservation system, nor associated staff. It need only inform a relatively small number of organizations engaged in large scale chartering of the nature of its services. It can also reduce personnel that would otherwise be necessary for planning, forecasting, and the settlement of ticketing credits and debits. The joint savings in direct costs, which are marginal, and in indirect costs, which are sizeable, can be about 20 to 30 per cent overall (Doganis 1985, 143).

Charter carriers historically have been able to improve their cost advantage in two other ways. These are by installing more seats in its aircraft than would a scheduled carrier and by maintaining a higher load factor than do scheduled carriers.

There are several reasons why such a charter carrier can install more seats than can a scheduled carrier. With only one class there is no space lost to cabin partitions, the space devoted to kitchens and washrooms can likely be reduced, and there are no superior class seats with greater pitch, leg room, or greater width.

When the aircraft of Wardair are compared to the aircraft of other scheduled carriers, particularly Air Canada and CPA, they tend to have a greater number of seats, except where the scheduled carrier is also operating the aircraft in a charter configuration. Wardair's Boeing-707 had 183 seats, its Boeing-747-100s had 337, its Boeing-747-200s had 457, and its DC-10-30s had 301. CPA's Boeing-747s had 317 or 387 seats and its DC-10-30s had 281 seats. Air Canada's Boeing-747s had 275 or 452 seats. The Boeing-707s in operation with scheduled airlines in 1976 tended to have between 135 and 160 seats (ICAO 1984b and 1976b).

A charter carrier can act to maintain a higher load factor than can a scheduled carrier for several reasons. It need only operate to a destination when this higher load factor is available, otherwise it is perfectly at liberty to switch destination. It need not be concerned about any diplomatic problems that such a cessation of service might cause if it were scheduled service, nor about any sizeable fixed costs at its previously served destination since such costs are unlikely to have been incurred. Before individual ticketing was common on the North Atlantic for charter flights, the effort of charter carriers to maintain high load factors was assisted by the fact that the tour organizer moved the passengers as a group and often took care of their accommodations and travel needs at their destination. The tour organizer made every effort to completely fill the

aircraft and could offer the consumer a complete package tailored to a full aircraft. The effect of the greater seat density together with the higher load factors could increase the basic advantage of 20-30 per cent on cost to 50-65 per cent (Doganis 1985, 143).

The difference in load factors between scheduled and charter carriers has tended to fall during the last two decades. The restrictions attached to the sale of charter tickets have gradually been reduced and at the same time the scheduled carriers have developed special fares which are similar in many ways to charters. Scheduled carriers on the North Atlantic have raised their load factors from 50-60 per cent in the 1960s to close to 70 per cent in mid 1980s, as can be seen in Table 6.5. The load factors of charter carriers on the Canadian North Atlantic have declined since the introduction of individually ticketed advance booking charter fares in 1973. In 1970, for example, the load factors of charter carriers serving Canada in each of four quarters tended to fall between 90 and 100 per cent (Stat. Can. 1970g). In 1980 the load factors of charter carriers on the Canadian North Atlantic were between 70 and 90 per cent (Stat. Can. 1980h).

A number of attempts were made in Europe to either take a scheduled airline's cost per passenger, carry out systematic adjustments for known differences in scheduled and charter costs, and determine what the charter cost would be, or,

starting with a charter carrier's costs, to work back to those faced by a scheduled carrier. Three of these "Cascade" or "Reverse Cascade" studies were carried out between 1977 and 1981 and were concerned with intra-European routes. The Cascade studies found that the charter carrier had a cost advantage of 63-66 per cent over the scheduled carrier, reduced to 46 per cent in the case where the scheduled carrier chosen had a higher than usual seating density. In the first Cascade study the higher seating density of the charter carrier was held responsible for 15% of the advantage (reducing the advantage to 48-51 per cent had it been absent) while the higher load factor gave 21 percentage for a joint role of 36 out of the total 63-66 per cent advantage. The Reverse Cascade study found an advantage of 54 per cent for the charter carrier over the scheduled carrier (Doganis 1985, 149).

It is also important to note that charter carriers, while more economic than scheduled carriers on the cost side, have important demand-side limitations. Scheduled carriers, with their provision of on-demand service throughout the year, provide the appropriate system for business travellers. While this handicaps the scheduled carriers in terms of load factors, it ensures they capture this higher fare market. Scheduled carriers also receive considerable revenue from their ability to carry cargo below deck which is a right not normally held by charter carriers. "Normal" fare traffic

generates a relatively large proportion of their revenue and they are able to control the proportion and timing of the seating capacity offered to low promotional fare traffic through "load control". The charter carriers appeal to passengers with lower value-of-time costs and more flexible travel needs. Charter operators can offer bargains based on cost economy but travellers have a much more limited choice of flight times and destinations than is available with full fare flights. Further, route extension flexibility is non-existent or limited with charter services.

Many of the advantages discussed above accrue only to pure charter carriers. The dominant charter carrier on the Canadian North Atlantic, Wardair, had taken on many of the characteristics of a scheduled carrier on its North Atlantic routes even before it began offering scheduled flights between Canada and the U.K. in the mid 1980s. After the 1973 liberalization of charter rules it established a subsidiary, Intervac, to oversee the marketing of its seats. The overall financial health of the enterprise thus became involved with marketing to the public. It established a series of offices not only throughout Canada but also in several cities in Europe. It discovered the growing importance of computerized booking systems and developed links to another of the smaller North Atlantic carriers, BCAL, to secure better exposure on those systems. By losing some of the advantages of a pure charter carrier it thus became

vulnerable to the emergence of Canadian rivals which had inferior aircraft but which were closer to the purely charter model, such as Worldways and Nationair.

2.5 ELASTICITIES OF DEMAND ON THE NORTH ATLANTIC

One important aspect of the North Atlantic market which has made it quite different from many markets was that it became and remained a market dominated by pleasure travel rather than business travel. Pleasure and business travel respond differently to changes in the surrounding economic environment.

The responsiveness of a demand for air transportation to fare changes and to income changes is known as its price elasticity and its income elasticity. The elasticity of a variable affecting demand is equal to the percentage change in demand divided by the percentage change in that variable. A change in the price of a commodity usually causes the amount demanded to move in the opposite direction to the changes in price so the own price elasticity of a service such as transportation normally has a negative sign. A change in the income of a consumer usually causes the amount demanded to move in the same direction as the change in income so the income elasticity of a service normally has a positive sign. When the value of an elasticity is from 0 to 1, the response of demand is less than the change in price or income and it is said to be inelastic. At 0 there is no

response in demand. At 1 the response is directly proportional to the change in the indicator. Elasticity here is thus unitary. When the value is greater than 1 the response of demand is increasingly greater than the initial movement of price or income. Such a value is said to be elastic.

The own price elasticities of business and pleasure travel are quite different. Pleasure travel is much more responsive to price changes and its elasticity has a larger absolute value. The demands for both business and leisure travel also respond to changes in the level of economic activity in the economy but the mechanism of the response of each is rather different. The demand for pleasure travel tends to respond to the purchasing power of disposable income and that for business travel tends to respond to broad movements of the economy such as GNP or international trade. In both cases the response of the change in demand is in the same direction as the change in the economic indicator so these income elasticities have a positive value.

Because of the aggregated nature of statistics available on the North Atlantic, and the fact that when disaggregated they tend to move in the same direction at the same time, relatively few studies available to the public have been made of the price and income elasticities of the demand for air transport on the North Atlantic and of necessity the available studies paint the picture in very broad strokes indeed. They are nevertheless useful because they at least indicate orders of magnitude and directions of response.

A fully specified model would at the very least have to keep track of the different movements of income in all the countries generating traffic, both in terms of disposable income and at least one major economic indicator. It would also have to keep track of what happens to the purchasing power of that income when it moves abroad, therefore exchange rates and differences in inflation rates would have to be included. In addition, many countries during the last four decades have had exchange controls of varying degrees of severity and success so allowance should be made for these. Because a sizeable proportion of pleasure travel has been to visit friends and relatives, allowance should be made for such ties. In addition to ties of affection, friends and relatives also provide means to evade the consequences of exchange control and thus may gain additional importance during such time periods. There have been secular movements in the nature of holidays people take. Finally, access to various fares and to the charter market has been limited by various regulations which have changed over time. Allowance should be made explicitly for all of these complications. A fully specified model is thus not feasible.

The British Airports Authority used the volume of travellers at twelve European airports in the period 1965-1975 to produce aggregated income elasticities for short haul and long haul business and leisure travel. The income elastici-

ty for long-haul business travel was 1.2 and for long-haul leisure travel was 2.0. It subsequently did a second study in 1981 using more recent and more disaggregated data and estimated the income elasticity of long-haul leisure travel for UK residents in 1981-1985 would be 2.0, declining to 1.7 for 1985-1990. For non-UK residents the corresponding elasticities would be 1.7 declining to 1.31 (Doganis 1985, 174). One implication is that as incomes continue to rise the effect of the rise in income on long-leisure travel declines. Europeans have had lower incomes compared to North Americans in the past and thus the effect of continuing income increases on them is likely to be stronger in encouraging them to engage in long distance leisure travel. The role of Europe in providing North Atlantic traffic, therefore, is likely to increase, compared to the role of North America.

Estimates of fare elasticity are variable to say the least. A British Department of Trade study in 1978 postulated that it was -2.6 for UK originating leisure travel which was neither on an ITC flight nor directed to Western Europe. The BAA study on UK leisure travel in 1981, however, put it at 0.7 for travel on the North Atlantic to North America (Doganis 1985, 176).

Another study that placed the price elasticity of scheduled North Atlantic air travel at close to -1 was that by Mutti and Murai (1977). As in the 1981 BAA study, attention was directed to both income and fares. Mutti and Murai ini-

tially estimated an overall income and fare elasticity imposing the condition of no money illusion. An income elasticity of 1.89 and a fare elasticity of -0.89 was obtained for a group of six countries including the United States. The fare variable was the ex-post average fare revenue. They then examined the demand for charter and scheduled transport in terms of real income and real fares without imposing any constraint regarding money illusion. Charter income and fare elasticities were estimated at 2.74 and -1.43 respectively while the respective scheduled demand elasticities were found to be 1.69 and -0.74. Mutti and Murai also attempted an examination of the concept that people initially budget the amount they will spend on North Atlantic travel and then allocate between scheduled and charter operations. While not content with their results, they stated that they found that for scheduled carriers the introduction of a substitute increased their scheduled carriers own price elasticity and that a positive cross elasticity was present (Mutti and Murai 1977, 46, 49-50). Their results were consistent with the belief that people taking advantage of charter or similar fares are more responsive than those travelling at higher fares to both the effects of income and price.

An example of a detailed study of the factors affecting intercontinental demand in a somewhat similar situation is provided by the study of international travel to Australia

from Europe, the United States, and Oceania carried out by Smith and Toms (1978). It made allowance for the real disposable income in the countries concerned, for the exchange rates, for the real fares, for family ties, and for some of the restrictions on various fares. The final result gave an elasticity of -1.8 for fares, taking into account the monetary equivalence of various restrictions on fares, and an income elasticity of 2.4. The study also noted that income elasticity was likely to decline as the market approached saturation and the growth in demand leveled off, and stated that real income, real fares, exchange rates, and family ties, which had all been measured, all proved significant (Smith and Toms, 27).

In his 1978 study, Straszheim attempted to determine the elasticities of the different types of real fares on the North Atlantic between 1948 and 1973. Unlike Mutti and Murai, his study relied upon ex-ante fares rather than ex-post fares and he expressed concerns about the auto-correlation problems in their study.

For First Class fares he found an own price elasticity of -0.76 with no cross elasticity to Economy fares. Income was irrelevant. This is what one would expect since the most frequent user of First Class is a business man travelling for the purposes of his company and not paying for it out of his own pocket.

Straszheim examined the Tourist/Economy fare in the context of it and First Class fares for the period 1952-1973 and in the context of it and Discount and Promotional fares for the 1963-1973 period.

When examined in the former context there was an income elasticity 0.53 and the peak Economy fare had an own price elasticity of -1.92 while the own price elasticity of an average of the high and low season Economy was lower at -1.48. The low season and high season Economy fares had evolved somewhat differently and the higher value for the peak fare picked up the predominance of the price conscious tourist during the summer and indicated that the proper strategy for profit maximization was the provision of summer discounts. No cross elasticity was picked up with regard to First Class fares and an income variable with a passable fit was found when lagged by one year indicating the existence of a sizeable lead time in planning by tourists.

For the period 1963-1973 the available data allowed Straszheim to divide the Economy market into three parts: "Standard Economy", "Promotional" (comprised of 14/17-21/28 day excursion travel), and "High Discount" (comprised of 29-45 day excursion, group inclusive tour, and incentive group fare travel). The variables used were "income", "the peak Economy fare" (an average of peak and low season Economy fares was not used because they moved together during this period), "the highest available discount fare for that

year" (the short excursion fare from 1963 to 1970 and the long one thereafter), a dummy variable for the institutional change in 1970 introducing the longer period excursion fare, "the average of the short and long excursion fares", and "(the peak Economy fare)/(the highest available discount fare)".

The Standard Economy fare was found to be insensitive to income and its own price elasticity was close to -1.0. The dummy variable for the 1970 institutional change was found to be significant but the effect declined over time. The attempt to find a cross elasticity to Promotional and Discount fares proved to have the wrong sign and a very low level of significance and can therefore be assumed not to exist. These findings are in line with the observation that the Standard Economy fare was evolving into a "poor man's First Class" for those who could not afford First Class but are required to travel and can not meet the requirements of Promotional and Discount fares.

The examination of the highest available discount fare found a very high own price elasticity, -2.74, and the 1970 dummy variable was relevant indicating the relaxation of restrictions on various of the discount fares had effects not picked up by the price variable. The income variable was relevant at a low level of statistical significance.

When the combined promotional and high discount fares were examined the result was similar to that for the highest available discount fare. There was a slightly lower own price value of -1.82. No cross elasticity to the Standard Economy fare could be found.

The evidence indicates that both the rising trends in income since the Second World War and the movement of fares are important explanatory variables in the evolution of traffic. The importance of income, however, seems to be declining as the market approaches maturity. There is a considerable difference in the behaviour of different price segments of the market with travellers in the higher price segments being much less responsive to both income and own price effects. The demand of those in the higher price categories, even Standard Economy, is inelastic with respect to price while the demand of those in the lower price categories (who are travelling for pleasure) is quite price elastic, perhaps with an elasticity around -2.0. There also has been a drift from higher to lower price categories when the conditions restricting access to the lower price categories were relaxed, as in 1970.

2.6 THE SEASONAL NATURE OF NORTH ATLANTIC TRAFFIC

An important characteristic of the North Atlantic is the seasonal nature of demand. In 1966, for example, February saw only 154,103 passengers carried by IATA carriers on the North Atlantic which was only 26 per cent of the 597,836 carried in August (IATA 1966c, 45). In 1986 comparable figures were 988,000 in February which was 36 per cent of the 2,746,000 carried in August, a slight improvement from the point of view of the carriers. When, however, the Canadian North Atlantic market is examined, the February figure was still only 26 per cent of the August figure, no improvement at all (IATA 1986c, 45). This seasonality makes the achievement of an adequate yearly load factor difficult and required Canadian carriers entering this market to develop other markets with complementary peaks to allow the redirection of excess equipment and staff during the off season on the North Atlantic.

2.7 THE S-CURVE PHENOMENON

One possible explanation for sustained over-capacity in an air passenger transport market, such as that on the North Atlantic, is the S-curve phenomenon. This idea was developed by W. E. Fruhan in 1972. The S-curve phenomenon exists where a carrier finds that the market share it holds will decline faster than the reduction it makes in the proportion of the frequencies it provides of the market. It is,

therefore, unlikely to be willing to be the first carrier to reduce capacity since it faces what amounts to an oligopolistic kinked demand curve situation.

The reason that its market share might decline faster than its proportion of capacity offered may lie in the fact that the carrier will no longer be able to match its competitors at all of daily or weekly peak travel times. It will also have less overall exposure in the public eye.

The actual existence of such a phenomenon in air transport markets has been the subject of some discussion. An attempt to document its existence on the North Atlantic was made in Mutti and Murai's 1977 article. Their results showed that a prediction of a one per cent reduction in seats offered resulting in a one per cent reduction in passengers carried was slightly pessimistic for large airlines and slightly optimistic for small airlines. (A reduction in passengers carried which is in line with the reduction in the seats flown by the carrier will be greater than a reduction in passengers carried which is in line with the change in the proportion of seats provided by the airline out of the total of seats provided). The S curve thus apparently existed in a mild form.

The result of the S-curve phenomenon, the unwillingness of carriers to act individually to reduce capacity, can occur, however, even where the proportion of passengers car-

ried declines in line with the proportion of seats provided. This can be illustrated by a numerical example.

Between 1980 and 1984, station expenses, general administration and miscellaneous expenses, which are all predominantly fixed costs, comprised between 17 and 19 per cent of North Atlantic operating costs. If half of ticketing, sales and promotion costs are also assumed to be fixed costs, then fixed costs comprised approximately 23 per cent of operating costs (ICAO 1985f, III). In addition, passenger economic costs which are not included in operating costs, like interest charges, the remuneration of equity capital, and taxes, are likely to be fixed costs. At the end of the 1970s they added an additional 15 per cent to passenger operating expenses (Taneja 1980, 128). Fixed costs are therefore likely to form one third of passenger economic costs in a market like that on the North Atlantic.

It is assumed that there are 1,000 passengers travelling regularly between A and B. Airline Y is providing 400 seats out of the 2,000 currently provided by all operating carriers. It carries the same proportion of passengers as the proportion of total seats that it provides. It thus carries 200 passengers at $500 a head for a total revenue of $100,000. Its total costs are $105,000 of which one third, $35,000 are fixed costs, and the rest, $70,000, are variable costs. The variable cost per seat is $175. The airline decides to reduce capacity by one fifth to 320 seats. It

will now provide 320 out of 1,920 seats and will therefore carry 167 passengers. Total cost will now be $35,000 + (320x$175) = $91,000 and total revenues will be $83,500. The airline will now loose $7,500 instead of $5,000. If, on the other hand, it increased capacity by one fifth to 480 seats, it would carry 231 passengers. Its revenues would rise to $115,500 while its costs would rise to only $119,000 so its losses would be reduced to $3,500.

It is only when a joint decision by all the carriers can be taken, such as when a pool is formed, that a reduction in capacity will be likely to occur and it is likely that, in the absence of a mechanism to agree on capacity reductions, there will be a tendency for capacity increases to occur.

2.8 SUMMARY

Chapter II has thus outlined the freedoms that provide the structure for scheduled air service. It has outlined the basic content of the bilateral air agreements that govern civil scheduled aviation and identified the institutional provisions which control market entry for international scheduled air transport. Charter carriers operate under less constrained institutional conditions and have a large cost advantage over scheduled carriers. They do, however, have demand side and competitive constraints. The studies of income and price elasticities which have been carried out are conflicting but it is clear that both income and fare

changes have had important implications for the evolution of North Atlantic travel. The North Atlantic market has two main segments, a small one composed primarily of business travellers whose price elasticity was and is somewhat inelastic, and a large one made up of pleasure travelers whose price elasticity is quite elastic. The North Atlantic market is seasonal, creating major problems for carriers entering the market. The scheduled carriers are also unlikely to readily respond to a market showing over capacity by acting individually because of the structure of their costs and pattern of reaction of passengers to reductions in capacity by a single carrier.

Chapter III will review the evolution of the market on the Canadian North Atlantic.

Chapter III

EVOLUTION OF THE MARKET

This chapter examines the evolution of the Canadian North Atlantic market for air transport. The first section examines the development of the traffic, the second the evolution of the pattern of scheduled services, the third the development of special fares by the scheduled carriers to compete with the charter carriers, and the fourth the main components of demand and the changes in inflation and exchange rates in the main countries providing passenger traffic. A fifth section contains the conclusion.

3.1 CANADIAN NORTH ATLANTIC PASSENGER TRAFFIC

This section first examines the basic outlines of the evolution of Canadian North Atlantic air traffic. It then looks at the shift from sea to air travel and at other structural shifts.

3.1.1 Outline of The Evolution of Canadian North Atlantic Air Passenger Traffic

The realized demand for air transport on the Canadian North Atlantic grew rapidly from the late 1940s until the mid 1970s. In the late 1940s, approximately 30,000 scheduled passengers flew between Canada and Europe together with

a few thousand immigrants from Europe being flown to Canada on government chartered aircraft. In the mid 1970s the total of scheduled and charter passengers passed 3,000,000. This market growth was not only substantial but was also relatively steady. It then ceased and the total of scheduled and charter traffic then fluctuated between 2.8 million and 3.4 million during the next decade.

The development of total Canadian North Atlantic passenger traffic can be followed in some detail from the later 1950s. An impression of the preceding decade can be gained, nevertheless, from the available statistics. The period prior to 1957, when the first really accurate picture is available, is outlined in Table 3.1.

The growth of Canadian carriers will be summarized first. Canadian carriers, in particular TCA, began scheduled commercial operations on the Canadian North Atlantic in 1947. A decline in passengers carried occurred in 1949-1950 before growth resumed in 1951.

Before attempting to outline the development of foreign carriers, it is important to note that the statistics for foreign carriers presented in Table 3.1 include the traffic for areas other than Canadian North Atlantic region. These statistics include Qantas's operations in the Pacific and BOAC's and KLM's to the Caribbean. The steep increase in passengers carried by foreign carriers shown in 1953, a year

TABLE 3.1

Scheduled Civil Aviation Operations 1947-1957 on the Canadian North Atlantic

Year	Passengers carried by Canadian carriers on North Atlantic routes	Passengers carried by Foreign Carriers on all scheduled transocean routes
1947	14,393	-
1948	23,429	-
1949	21,872	-
1950	17,340	-
1951	21,200(est.)	-
1952	23,100(est.)	31,525
1953	25,100(est.)	40,289
1954	29,000	40,229
1955	35,000	41,072
1956	47,000	56,707
1957	62,000	75,938 (67,084 N.At.)

Sources: The totals for the Canadian carriers are from TCA annual reports until the end of 1953 with the estimates for 1951-1953 being based on data in those reports. Thereafter the totals are from p. 46 of Davies (1964), except in 1955 when an additional one thousand passengers was allowed for CPA's first year of Polar operations. The totals for foreign carriers come from Statistics Canada series 51-202.

of slow growth for Canadian carriers, may refer to an expansion in foreign carriers' southern services. Foreign carriers' total operations stagnated in 1954 and 1955, both years of rapid growth for Canadian carriers on the North Atlantic, but it is impossible to determine if the Canadian carriers were reaping the benefit of market growth during a period when foreign carriers stagnated or if foreign carriers were also enjoying growth on the North Atlantic while reducing

their operations to Canada from elsewhere. It is reasonable to expect that the increases in passengers carried by foreign carriers in 1956 and 1957, which like the Canadian increases of those two years were both over 30 per cent, were due to both foreign and Canadian carriers, enjoying rapid growth in the Canadian North Atlantic region.

It would seem likely that during most of the first decade Canadian carriers and foreign carriers alternately had advantages in their shares in the growth of the market, perhaps due to surges in available capacity, but in 1956 and 1957 they were all able to benefit from the very rapid expansion of the market.

During the period from the the late 1950s through the late 1960s there was considerable variability in the growth rate of scheduled traffic on the Canadian North Atlantic, as shown in Table 3.2. The high growth rates of the mid 1950s continued through the late 1950s and into the early 1960s. Then in 1962 the growth rate fell to 9 per cent and in 1963 it dropped still further to 1.1 per cent. In 1964 it recovered to over 25 per cent and it remained high through 1967, the year of EXPO 67 and Canada's centennial celebrations, when it reached over 34 per cent. This was followed by another collapse of the growth rate to -2.7 per cent in 1968 and it recovered only slightly to 3.0 in 1969. The growth of charter traffic on the Canadian North Atlantic, as long-distance piston aircraft were replaced on scheduled services

TABLE 3.2

Canadian North Atlantic Scheduled Passenger Growth

1957-1969

Year	Canadian Carriers	Foreign Carriers	Total Passengers	Growth Rate
1957	(62,000)	67,084	129,084	
1958	(83,000)	85,585	168,585	30.6
1959	(89,000)	109,605	198,605	17.8
1960	(111,000)	148,625	259,625	30.7
1961	(141,000)	173,092	314,092	21.0
1962	150,899	191,515	342,414	9.0
1963	157,295	189,107	346,402	1.1
1964	190,728	245,089	435,817	25.8
1965	251,369	290,979	542,348	24.4
1966	317,083	380,403	697,506	28.6
1967	395,467	541,256	936,723	34.3
1968	455,570	455,650	911,220	-2.7
1969	493,967	444,901	938,868	3.0

Sources: The figures for the Canadian carriers for 1957-1961 are from p. 46 of Davies (1964). The remainder come from Stat. Can. series 51-201 and 51-202.

by jets, at least partly accounted for the slowdown in the growth of the scheduled market in 1962 and 1963. During this period the charter market more than doubled its size from that in 1961, as can be seen in Table 6.3. During the slowdown of 1968 and 1969 the charter market on the Canadian North Atlantic showned an impressive expansion of about 100,000 additional passengers in 1968 over 1967 and 240,000 additional passengers in 1969 over 1968.

Foreign carriers were able to establish and maintain a market share of about 55 per cent on the Canadian North Atlantic from 1959 until 1967. The available capacity of both Canada's main carriers expanded considerablely in 1968/1969. They then enjoyed a steady growth of scheduled traffic at the expense of foreign scheduled carriers during the period of relative stability at the end of the 1960s.

During the mid 1970s the pattern of scheduled passenger growth changed profoundly from what it had been since 1947. This new pattern would endure basically until the end of the period under consideration in the thesis. The change in the scheduled market came following the first oil crisis which began as a by product of the 1973 Arab-Israeli War. This period is summarized in Table 3.3.

Annual growth rates of greater that 10 per cent per year in the scheduled market continued basically until the end of 1974. The slowdown in 1971 corresponds to another year of rapid growth in the charter market. An additional 121,000 passengers flew charter in 1971 over 1970. The explosive growth in 1972 was achieved in the same year that charter traffic on the Canadian North Atlantic recorded its first decline since the begining of the 1960s. The scheduled market was also able to enjoy continued growth during the first year of the oil crisis in 1974 at the expense of the charter market. It is interesting to note that in the following year the charter market made a strong recovery producing the

TABLE 3.3

Canadian North Atlantic Scheduled Passenger Growth

1969-1986

Year	Total Passengers (IATA Figures)	Total Passengers (Canadian Figures)	Growth Rate
1969	955,262/ 955,000	938,868	
1970	1,135,794/1,137,000	1,156,670	19.0/23.2
1971	1,147,804/1,151,000	1,230,000	1.2/ 6.3
1972	1,606,519/1,612,000	1,596,000	40.0/29.8
1973	1,846,179/1,852,000	1,888,000	14.9/18.3
1974	2,093,852/2,101,000	2,080,000	13.4/10.1
1975	1,969,820/1,978,000	1,982,000	-5.9/-4.7
1976	2,113,000/ -	2,105,000	7.3/ 6.2
1977	2,223,000/ -	2,182,000	5.2/ 3.7
1978	2,291,000/2,250,000	2,268,000	3.1/ 3.9
1979	2,407,000	2,411,000	7.0/ 6.3
1980	2,260,000	2,272,000	-9.4/-5.8
1981	2,187,000	2,189,000	-3.2/-3.7
1982	2,066,000	2,091,000	-5.9/-4.5
1983	2,140,000	2,126,000	3.6/ 1.7
1984	2,431,000	2,405,000	13.6/13.6
1985	2,649,000	2,632,000	9.0/ 9.4
1986	2,691,000	2,738,000	1.6/ 4.0

Sources: The right hand of the first column represents IATA figures for passengers carried by IATA carriers on the North Atlantic to and from Canada. The left hand presents IATA's estimates for all scheduled carriers. This material is drawn from various IATA World Air Transport Statistics, from the appendix to its 1975 North Atlantic Charter Study, and from its North Atlantic Passenger Reports. The second column shows the figures released by the Canadian government in Stat. Can. series 51-201 prior to 1970 and in series 66-202 and 87-401 for 1970-77. The data for the period after 1977 are unpublished statistics received directly from Statistics Canada.

shrinkage in the scheduled market recorded in 1975. Thus, until the end of early 1970s, growth continued steady over-

all, with changes in growth rate of the charter market explaining much of the fluctuation in the scheduled market.

In 1972 there was a major shift in passengers on scheduled IATA North Atlantic services away from economy fares to the long period excursion fares (Table 6, Appendix). This was due to a reduction in the long period excursion fare by IATA which occurred primarily as a result of the efforts of Air Canada, as discussed in Section 10.2. In 1972 average revenue per passenger on IATA scheduled services on the North Atlantic declined by six per cent and reached its lowest value ever (Table 10.5).

From 1976 until 1983 or 1984 the scheduled market remained basically stagnant. The expansion in 1976-1978 corresponded to years of decline in the charter market and the decline in 1982 corresponded to a year of considerable growth (14.6) per cent, in the charter market. The year 1980 saw declines in both the scheduled and charter market; in 1981 the charter market was steady.

Although APEX fares were introduced in 1975, they initially only occupied seven per cent of the market (Table 6, Appendix). When initially introduced, as discussed in Chapter IX, the proportion of passengers who could be sold APEX fares was restricted. During 1976-1979 they expanded steadily in importance (Tables 6 and 7, Appendix). In 1978 Super APEX fares were also introduced. By 1979, 37 per cent

of passengers on IATA scheduled services on the North Atlantic travelled on APEX or Super APEX fares.

In 1984 and 1985 it appeared that a recovery was beginning in the scheduled market and, if Statistics Canada figures are correct, the charter market also remained healthy. In 1986, however, there seemed to be another slow down in overall demand with the growth rate in the scheduled market falling below 5 per cent at the same time as Statistics Canada recorded a decline in the charter market.

The year 1987, however, would show a large improvement over 1986. IATA compared the year ending September 1986 to September 1987 and recorded an increase in scheduled traffic on the Canadian North Atlantic of 16.7 per cent to 3.1 million passengers and an increase of 0.7 per cent in the charter market. In all, it calculated 3.8 million passengers were carried in the year ending September 1987 compared to 3.3 million in the year ending September 1986. (IATA Peak Season 1987b, 8-11)

3.1.2 The Shift from Sea to Air Travel

During the 1950s and 1960s the scheduled carriers benefitted both from the absolute increase occurring in the number of passengers seeking transport between Canada and Europe and from the shift occurring from passenger sea travel to passenger air travel. The magnitude of this shift in terms of

total North Atlantic air passenger market can be obtained from Table 3.4. It is impossible to determine the relative impact, if any, of individuals who arrived in Canada directly from Europe and who returned to Europe via the United States, or vice versa. The two effects may be offsetting and cancel.

During the 1950s there was a major modal shift on the North Atlantic from passenger sea travel to passenger air travel. Prior to 1952, when tourist class air travel was introduced, two thirds or more of the passengers on the North Atlantic chose to travel by sea. The share of maritime carriers fell to 50 per cent by 1957 which was also the last year that marine carriers enjoyed an increase to a new high in their total of North Atlantic passengers carried. The share of maritime carriers in the total North Atlantic market continued its rapid decline falling to a little under one third in 1960, to under one sixth in 1964, to under one tenth in 1967, and was only 2.5 percent in 1970. Sea travel was increasingly limited by difficult cost conditions for ocean liner operators in the conditions of post war prosperity, by the lower number of trip frequencies, and, above all, by the markedly inferior travel times across the Atlantic when compared with air transport. Air transport completely eclipsed even the most impressive efforts of the major transatlantic ocean liners to speed passengers across the ocean. The introduction of tourist class air fares in

1952 and economy class fares in 1958, along with the expanded offering of promotional fares, also contributed greatly to the shift of passenger travel from sea to air. Passenger travel by sea was increasingly to be the domain of cruise

TABLE 3.4

Switch to Air from Sea Travel on the North Atlantic

in thousands

Year	Total Passengers	Sea Passengers	Air Passengers	Percent By Sea
1947	624	415	209	66.5
1948	754	501	253	66.4
1949	925	652	273	70.5
1950	1,008	691	317	68.6
1951	1,052	710	342	67.5
1952	1,292	844	448	65.3
1953	1,415	892	523	63.0
1954	1,519	938	581	61.8
1955	1,654	962	692	58.2
1956	1,846	1,011	835	54.8
1957	2,046	1,027	1,019	50.2
1958	2,256	964	1,292	42.7
1959	2,421	881	1,540	36.4
1960	2,808	879	1,929	31.3
1961	2,961	785	2,176	26.5
1962	3,407	820	2,587	24.1
1963	3,758	810	2,948	21.6
1964	4,473	715	3,758	16.0
1965	5,066	649	4,417	12.8
1966	5,150	603	4,547	11.7
1967	6,684	504	6,180	7.5
1968	7,045	374	6,671	5.3
1969	8,709	338	8,371	3.9
1970	10,216	252	9,964	2.5

Source: various issues of IATA's World Air Transport Statistics.

ships where speed was not the primary criterion.

The situation in the Canadian North Atlantic market was roughly similar to the entire North Atlantic market. In Table 3.5 it is possible to compare the behaviour of several segments of the Canadian North Atlantic market to the general North Atlantic picture.

TABLE 3.5

Percentages of Travellers Choosing Sea Travel

Year	North Atlantic market	European Visitors to Canada	UK Immigrants to Canada	Direct Canadian Returnees
1954	61.8	58.1		
1955	58.2	57.4		
1956	54.8	59.7	88.3	52
1957	50.2	53.9	75.6	48
1958	42.7	51.3	66.3	43
1959	36.4	46.6	59.3	37
1960	31.3	36.3	54.9	26
1961	27.4		55.6	18
1962	24.1		55.5	16
1963	21.6		51.4	13
1964	16.0		55.2	9
1965	12.8		41.3	7
1966	11.7			5

Sources: The North Atlantic market figures are from Table 3.4 while the figures for European visitors, UK immigrants, and direct Canadian returnees are from Stat. Can. series 66-201.

Looking first at the available figures for European visitors arriving in Canada, one can see that the percentage choosing sea travel was slightly lower in 1954 and 1955 than was true for the entire North Atlantic market and slightly higher in 1956 and thereafter. Nevertheless, except in 1956, it shows a consistent downward trend in the percentage choosing sea travel.

Examining the picture for immigrants from the United Kingdom, one can see a constant shift to air from sea travel. Sea travel, however, remained much more popular with UK immigrants than the average North Atlantic traveller since it was possible to transport sizeable amounts of baggage more inexpensively by sea than by air.

The statistics for direct Canadian returnees are for all those returning directly to Canada from countries other than the United States. The largest proportion of these were returning from Europe. Canadian visitors to the Far East and the South comprised a relatively small proportion of the total. This total of all direct Canadian returnees also shows a steady decline in the number choosing sea travel, but this proportion is much lower in each year than is the figure for the North Atlantic. This is at least partly due to the fact that the switch to air travel from sea travel was faster for Canadians travelling direct from the Far East and the South than from Europe. It is, therefore, reasonable to state that the general trend from sea to air travel

was similar in the Canadian North Atlantic as in the total North Atlantic market with sea travel remaining more popular with immigrants and European travellers than with Canadians.

3.1.3 Other Structural Shifts

Shortly after scheduled traffic had secured the dominant share of passengers travelling on the North Atlantic, it began to face increasing competition from non-scheduled/ charter traffic. The evolution of this challenge appears to be different in the Canadian North Atlantic market than in the overall North Atlantic market.

In the early 1960s the charter market represented only a little over 15 per cent of the overall North Atlantic passenger market (Tables 1 and 2, Appendix). During the 1960s the charter market grew more rapidly than the scheduled market, a process climaxed in 1969 when the non-scheduled market enjoyed an increase of 75.6 per cent and the total market share of the non-scheduled service rose to 26.2 per cent.

Non-scheduled services continued to carry between 24 and 30 per cent of the total total passengers on the North Atlantic until 1977. Like the scheduled services they were strongly affected by the First Oil Crisis. Although charter services saw an absolute decline in traffic in only one year, 1974, they, like the scheduled services, did not surpass their 1973 total until 1977.

After 1977 non-scheduled services declined in both terms of the absolute number of passengers carried and in their market share relative to the scheduled services until 1981. In 1981, their market share had fallen to 9.4 per cent of total North Atlantic traffic. This decline was particularly severe in 1980 which saw a decline of over 30 per cent in the number carried by the non-scheduled services. There was a brief rally in 1982-1984 after which the decline resumed.

On the Canadian North Atlantic, charter services were in almost complete eclipse from the early 1950s until the early 1960s, as will be discussed in Chapter VII. Then, between 1961 and 1964, they more than tripled. By 1964 charter services flew 163 thousand single direction passenger trips. This was 27.7 per cent of traffic on the Canadian North Atlantic, as shown in Table 3.6.

According to Canadian government statistics (Table 3, Appendix), the total size of the charter market on the Canadian North Atlantic grew steadily from 1964 until 1975, suffering declines in only two years, 1972 and 1974. The charter market then declined until 1980 despite a brief levelling off in 1979. It then recovered, rising to a new all-time peak in 1985 before falling back slightly in 1986 (due in part to a sizeable portion of Wardair's traffic between Canada and the UK moving from being charter traffic to being scheduled traffic when Wardair received permission to operate these regular services) IATA statistics tell a somewhat

TABLE 3.6

Percentage of Passengers Travelling Charter

Year	North Atlantic Market	Canadian North Atlantic Market (IATA)	(STAT. CAN.)
1963	15.6		
1964	15.8	27.7	
1965	15.3	24.1	
1966	15.7	23.6	23.1
1967	16.6	21.6	22.2
1968	18.8	28.4	27.9
1969	25.6	37.5	38.7
1970	24.7	36.2	36.2
1971	28.9	40.0	40.7
1972	24.8	31.0	31.1
1973	26.3	31.0	30.6
1974	24.6	27.5	26.9
1975	26.2	32.5	32.7
1976	26.6		30.8
1977	29.2		29.9
1978	21.6/21.1*	28.2	27.9
1979	14.8	27.3	26.7
1980	10.4	25.6	25.1
1981	9.4	26.3	25.9
1982	11.8	30.0	29.5
1983	12.0	29.5	30.1
1984	11.3	23.6	28.2
1985	9.8	20.8	28.7
1986	6.4	17.1	25.2

*The former number is based on statistics excluding the Miami gateway and the latter number is based on statistics including the Miami gateway.

Sources: Column one is from Table A2, IATA (1986b). Columns two and three were calculated from Table 3 of the Appendix.

different story. They parallel those of the Canadian government until the end of 1982 after which they record a decline in the market till 1986.

As can be seen in Table 3.6, charter traffic has been relatively much more important on the Canadian North Atlantic than on the North Atlantic in general. As discussed in Chapter VII, this is due to the very different structure of the Canadian charter market.

As can be seen in Table 3.7, the total market for travel by both scheduled and charter services evolved similarly on the North Atlantic from the early 1960s until the beginning of the First Oil Crisis in 1974. The pattern of evolution of the two markets then diverged.

Canadian North Atlantic traffic held up much better than did total traffic during the first oil crisis. It did consistently better in the years 1973 to 1977 inclusive. The relation of the Canadian and American dollar was relatively constant during this period and the only noticeable difference in structure between the two markets is the greater importance of charter travel in the Canadian market.

Following 1980, the Canadian market did much worse than the total North Atlantic market. Two noticeable differences existed between the environments in Canada and the United States. The Canadian dollar had begun deteriorating against the American in 1977/78 and continued doing so until recently. Canadians, therefore, found European prices more formidable than did Americans and the North American half of the North Atlantic remains the most important generator of traf-

TABLE 3.7

Evolution of N. Atlantic and Canadian N. Atlantic Markets

1978=100

Year	North Atlantic Market	Canadian North Atlantic Market
1964	19	19
1965	26	23
1966	31	29
1967	37	37
1968	40	40
1969	49	49
1970	59	57
1971	65	62
1972	78	75
1973	84	85
1974	76	93
1975	74	95
1976	82	97*
1977	90	99*
1978	100	100
1979	107	105
1980	107	97
1981	109	94
1982	106	95
1983	113	97
1984	126	107
1985	133	118
1986	121	116

*In the absence of IATA figures for these two years Canadian government figures were used.

Source: Based on Appendix Tables 1, 2, and 3.
Note: Prior to 1978 the index numbers for the North Atlantic are based on figures excluding Miami traffic; after 1978 they are based on figures including such traffic.

fic in times of prosperity both in the total North Atlantic market and in the Canadian North Atlantic market. The sec-

ond was that Canada did not have a "no frills scheduled market" until very recently. Canada, however, continued to have a buoyant charter market. In practical terms this provided a resonable replacement for the non-existent "no-frills scheduled market."

3.2 EVOLUTION OF THE PATTERN OF SCHEDULED SERVICES

This section will show the evolution of the patterns of transatlantic scheduled service by Canadian carriers to Europe and of European and other carriers to Canada. The scheduled carriers which have entered the Canadian North Atlantic market have done so in successive distinct groups. Canadian carriers have often offered new transatlantic services in response to this sequence of increases in competition.

A Canadian and a British carrier were the initial entrants. Before the outbreak of the Second World War, under a 1934 agreement, Canada and Eire were to provide support for the transatlantic operations of Imperial Airways to Canada and the United States from Great Britain and Eire. Pan American Airways was to be the United States operator to Great Britain. In July 1939 PAA started passenger operations on the North Atlantic via the then independent Dominion of Newfoundland. Imperial Airways, replaced by BOAC in August 1939, was awaiting delivery of the necessary new aircraft and was only able to provide mail service.

The outbreak of war in September effectively ended civilian development on the North Atlantic until the end of the war. During the war, however, a number of transatlantic passenger routes were developed in response to military demands. On May 4, 1941 the "Return Ferry Service" began between Montreal and Blackpool via Gander and on July 22, 1943 the "Canadian Government Transatlantic Air Service" began operation. CPAL personnel were involved in the creation of the Return Ferry Service (which would be operated by BOAC) and TCA operated the CGTAS under contract with the Canadian government. Both services used converted bombers to transport their passengers. PAA developed a network of transatlantic operations in response to the demands of war, BOAC began operations from New York using flying boats purchased from Boeing, and two other American airlines, one of them operating a VIP service, also began operations on the North Atlantic in response to war requirements. Only the first two mentioned operations served Canada.

It was not until 1947 that civilian scheduled air services for passengers began between Canada and the British Isles. TCA began operations on May 7, replacing CGTAS. BOAC also began a weekly service later that year to Montreal from the UK. On March 7 1946 BOAC had ceased operating its Boeing 314 Flying Boats to New York, replacing them with L.049 Constellations on July 1. Its entry into the Canadian market was thus shortly after it had acquired land planes of

the requisite range and capacity. BOAC was initially constrained in all its North Atlantic operations by a shortage of aircraft. In 1947 it offered only one flight weekly to Canada in the face of eleven by TCA and, even in the summer of 1948, was only able to offer three flights to TCA's fourteen.

In 1949 the second group of carriers began operating in the Canadian North Atlantic market. Four new carriers entered the market in 1949-1950: KLM (Dutch), Sabena (Belgian), SAS (the joint Scandinavian Air Service), and Air France. The first three entered in 1949 and the fourth in 1950. In 1949 Newfoundland and Labrador had joined Confederation with their strategic airfields. (Not until the introduction of the L.1049 Super Constellation in 1953 would civilian passenger transatlantic operation which did not involve a stop in Labrador, or Newfoundland, or the Azores, or Iceland be practical.) All four of these carriers had been using Gander prior to Canada's acquisition of this airfield. Bilaterals were agreed in 1949 with Belgium and Denmark and in the same year the 1947 one with Sweden was revised (to name Gander instead of Montreal as the Canadian gateway) to provide for operations between Gander and Brussels, Copenhagen, and Stockholm. In 1948 a bilateral had been agreed with the Netherlands under which KLM began operations to Montreal on May 29, 1949. KLM's rights included operations not only between Amsterdam and Montreal but also

between Montreal and Willemstad in the Dutch West Indies. A bilateral between Canada and France was agreed in 1950 with Air France beginning operations shortly after to Montreal.

A Canadian carrier did not begin reciprocal operations to any of these destinations immediately. Paris was the first to receive service by a Canadian carrier, TCA, on April 1, 1951. Amsterdam was the second getting service from CPA in 1955. Brussels did not receive service until 1958 and Stockholm until 1966, both from TCA/Air Canada. These latter two destinations have proved not to be viable for Canadian carriers and have seen Canadian carriers suspend service to them on occasion.

In addition to the European carriers, all three American carriers then operating to Europe: PAA, TWA, and American Overseas Airways (soon to be merged with PAA), held licences to operate to Gander enroute to Europe. In exchange for these American rights, Canada received rights from the United States on the Pacific and elsewhere, as will be discussed in the chapter on Canadian government policy.

KLM was strongly positioned to compete in the Canadian North Atlantic market despite the small size of its home market. It had constructed a superb system of routes connecting Amsterdam to cities throughout Europe at this time when the relatively short ranges of passenger aircraft made long distance point to point service impossible. It could

thus tap the entire European market lying east of the UK. Canada would also prove an important transit stop for KLM's development of a system of air services to the Americas although it did not hold fifth freedom rights beyond Montreal. In 1952 it began operations to Monterrey and Mexico City via Montreal. It would briefly enjoy the right to carry passengers between Mexico and Montreal in the interval between the time a bilateral was signed between Canada and Mexico in 1953 and either a Mexican or Canadian carrier began such operations itself, which TCA did in January 1954. In 1957 KLM replaced Monterrey with Houston (Davies 1964, 467).

Air France also integrated its operations to Montreal into its North American route pattern. In 1950 its rights permitted it to carry traffic in transit from Paris to New York via Montreal. In 1954 it could choose to carry transit traffic on to either New York or Chicago. Then in 1958 it received from Canada the right to carry fifth freedom traffic between Montreal and Chicago. Canada in 1958 got fifth freedom rights between Paris and Rome and Paris and Vienna.

In 1953 the first Canadian city west of Montreal received transatlantic service when TCA began operations out of Toronto. It would not be until 1960, however, that any European carriers would gain access to a centre west of Montreal, again Toronto.

The third group of carriers entered in 1955-1956. Canadian Pacific Air Lines entered the North Atlantic market in 1955. This reflected an important public policy decision to widen the scope of a "two carrier" operation by Canadians for international scheduled traffic. CPAL began service with a single weekly service from Vancouver to Amsterdam via a "polar route" using DC-6Bs. It was the second airline to fly a polar route. SAS, on November 15-16 1954, had begun a service between Copenhagen and Los Angeles via Sondre Stromfjord and Winnipeg, also using DC-6Bs. Winnipeg was only a technical stop. A request for traffic privileges at Winnipeg had been refused by the Canadian government on the grounds that Scandinavia had nothing of equal value it could grant in return. When CPAL began its operations TCA was providing 8 flights in summer, BOAC another 8, Air France 4, and KLM 3. Sabena and SAS were also operating to Canada but via the isolated airfield of Gander only. In 1956 Lufthansa began operations to Canada with two weekly flights. Its Canadian service was integrated into its entire service pattern. It operated out of Dusseldorf, flew via several intermediate points to Montreal, and from there it flew on to Chicago. This was one year after it had begun its first transatlantic operation to New York. TCA had already begun operations to Germany in 1952.

The mid and later 1950s saw a number of other developments which increased competition on the Canadian North

Atlantic but which did not take the form of new carriers entering. In 1956 Sabena exchanged its Gander gateway for Montreal. This was also done in 1958 by SAS. SAS would, however, suspend its operations to Canada in 1960, resuming them in 1964, and then suspending them again in 1980. CPAL secured access to Mediterranean Europe in 1957 beginning service to Portugal and Spain from eastern Canada. By the end of 1958 TCA thus faced competition from seven carriers in the Montreal gateway, up from one at the end of 1947.

The fourth group of carriers entered in 1960-1961. Alitalia began service in July 1960. Although a carrier on the North Atlantic since 1950, its service to Canada had been delayed by difficulty in agreeing on a Canadian Italian bilateral. Although it had secured a fifth freedom right on the Montreal-Chicago leg of its service, it had failed to secure the corresponding right from the United States and thus could carry only the intransit passengers from Italy on to Chicago from Montreal. That same year CPAL began serving Italy, initially by extending its service onward from Iberia. In 1961 Swissair began services to Canada. A carrier on the North Atlantic since 1949, and in possession of a bilateral permitting operations since 1958, it only now began a Canadian service. Once again Montreal served as an intermediate stop to Chicago with Swissair flying a Geneva-Zurich-Montreal-Chicago route without any Fifth Freedom rights. TCA had been serving Zurich since 1958.

The ability of European carriers to serve Chicago as well as Montreal was important in permitting European carriers, with access to only a limited demand for carriage between their home countries and Canada, to offer a reasonable level of service to Montreal in competition with the Canadian carriers and therefore to begin operations. In the same way, TCA initially served destinations such as Dusseldorf, Brussels, or Zurich via London or Paris. As the volume of traffic rose and the range of aircraft increased, point to point service tended to replace such services.

In 1960 BOAC gained access to Toronto as well as Montreal. The result was that TCA agreed to enter a pooling agreement, as discussed in the section on pooling in Chapter 6.

The introduction of long-range jet transports at the end of the 1950s forced all carriers operating on the North Atlantic to modernize their fleets if they wished to remain competitive. BOAC was the first to begin jet service when it introduced the Comet 4 in 1958. It was quickly followed by PAA with the Boeing-707. In 1960 all the transatlantic carriers serving Canada, with the exception of BOAC, which had already begun jet service, and of CPAL, introduced service on the North Atlantic with either Boeing-707s or DC-8s. CPAL began jet service with DC-8s in 1961. In June 1958 it had been the third airline to begin turbine service on the North Atlantic when it had introduced Bristol Britannia turbo-props on its Vancouver-Amsterdam flights. BOAC had been

the first in December 1957. CPAL's limited resources had then forced it to delay the introduction of the even faster jet turbine aircraft until some time after its rivals were already using them.

The fifth group of carriers entered in 1966. Both Aerlinte Eirean and Aeroflot began operations to Canada in that year. Aerlinte had been serving North America since 1958, with Boeing-720s from 1960 and the longer range Boeing-707s from 1964. Air Canada, TCA's new name since January 1 1965, had been serving Eire since since 1947. Aeroflot's service to Canada was the first by a communist carrier to the mainland of North America, although it had been serving Cuba since 1963. It began service with turboprop Tu-114s and from the beginning it operated in a pool with Air Canada. Aeroflot introduced jet service with Ilyushin IL-62s in 1967. Air Canada took the opportunity provided by its pooled Montreal-Moscow service to begin service to Copenhagen in 1966.

The sixth group of carriers began service to Canada between 1968 and 1971. Four of these five carriers were Mediterranean: Iberia, TAP, Olympic, and El Al. The fifth, CSA, was communist. Iberia and Olympic both entered in 1969. Iberia's service to Montreal continued onward to Mexico City. It had been operating on the North Atlantic from 1954. CPAL had been serving Madrid since 1955. Olympic's service to Montreal continued onward to Chicago. It had

operated to New York since 1966. CPAL had begun operations to Athens in 1968, initially extending its service to Italy onwards to Greece. CSA began operating to Montreal in 1970. Its service was pooled with Air Canada. In 1971 El Al and TAP began serving Canada. El Al had been operating on the North Atlantic since 1950. Its initial service to Canada was four times weekly. One flight only was non-stop. The others were not and also carried passengers intransit to New York. CPA, the name was changed from CPAL in 1968, began operations to Tel Aviv shortly after El Al began its service. CPA initally extended its Athens service to Tel Aviv. TAP had begun transatlantic service in 1969. CPAL had been serving Lisbon since 1957.

The early 1970s saw competition for the traffic flowing through Toronto increase. After securing entry into the Canadian North Atlantic, the European carriers wished to expand their services westward from Montreal, initially to Toronto and later to western Canada. BOAC had secured access to Toronto in 1960 although initially it could only operate to Toronto via Montreal. Alitalia began service to Toronto in 1972, Lufthansa in 1973, KLM in 1974, Swissair in 1975, and Air France in 1976. A moratorium was then imposed by the Canadian government on any further transatlantic carriers being allowed into Toronto. The reason given was that additional facilities would be required at Toronto before further requests could be considered. This

moratorium lasted into the 1980s. As will be discussed in the section on pooling in Chapter VI, the usual result of a carrier gaining access to Toronto was the formation of a pool between it and the relevant Canadian carrier.

The seventh group of carriers entered the Canadian north Atlantic market in 1975-1977. LOT, the Polish carrier began operations to Canada in 1975. That same year Canada received its first service by an Islamic carrier when Royal Air Moroc began service to Canada by extending its Casablanca-New York operations on to Montreal. In 1977 Finnair began service to Canada using DC-10s.

Although the later 1970s saw additions to the services offered on the Canadian North Atlantic, it saw contractions also. These occurred in response to the contractions in demand due to the oil crises. Olympic withdrew after the summer of 1977. Aerlinte Eirean and SAS withdrew in 1980. CPA dropped Madrid and Tel Aviv in 1976 and Athens in 1981. Air Canada decided to drop Moscow, Prague, Brussels (which had been suspended before from 1962 to 1969 because of inadequate traffic), and Vienna for 1977 and in 1980 ceased passenger operations to Shannon and Copenhagen. Two of the carriers with access to Toronto, Air France and Swissair, in 1980 suspended their operations to that gateway for a time, resuming them later.

At the start of the 1980s the following pattern of services existed on the Canadian North Atlantic. Eire had no scheduled service. The UK was served by Air Canada and British Airways, the latter formed from BOAC and BEA in 1972. France was served by Air France and Air Canada. Belgium was served by Sabena. The Netherlands was served by KLM and CPA. Germany was served by Air Canada and Lufthansa. Portugal was served by TAP and CPA. Spain was only served by Iberia. Italy was served by Alitalia and CPA. Switzerland was served by Swissair and Air Canada. Finnair provided the only service to Scandinavia. Services to the communist block was provided only by communist carriers: Aeroflot, LOT, and CSA.

The division of the European traffic between the two Canadian carriers reflected a 1973 policy statement by the minister of transport in which a market division was declared so that Canadian carriers competitive efforts were concentrated on foreign rivals rather than directed against each other.

The early 1980s saw an Asian carrier begin service in the Canadian North Atlantic in 1982, Air India. Air Canada in 1984 began service to Bombay and Singapore.

Two European carriers either entered or re-entered the Canadian North Atlantic market in the mid 1980s, Olympic and JAT. This followed bilaterals in 1984. Both these European

carriers had received access to both Montreal and Toronto. Air India, which initially could only operate to Montreal, gained access to Toronto subsequently. El Al got access to Toronto in 1985 and Sabena subsequently.

Two new Canadian carriers entered the Canadian North Atlantic market in the mid 1980s, Wardair, long established in charter operations to the UK and the continent, in 1985 and Nationair in 1987. The first began service to the UK and the second initially began service to Brussels from Montreal and then added service from Hamilton to London, England. In the spring of 1988 Wardair received permission to add Paris to its scheduled services. These new participants reflected further evolution of Canadian public policy on market entry.

In the mid-1980s Air Canada began a slow expansion in Europe and has returned to Vienna. In 1987, as will be discussed in the chapters on government policy and on the scheduled carrier market, Canada's two major carriers agreed to change their service patterns to Europe. The initial results of the change will be Air Canada will replace the service of Canadian Airlines International, formerly CPA, to Lisbon and that the two carriers will share Germany though they will still not compete on any city-pair.

In the 1980s a number of European carriers got access to western Canada. British Airways got access in 1981, Lufthansa in 1982, and KLM in 1985.

In conclusion, the pattern which has emerged sees the major European carriers having secured penetration into the western Canadian market primarily according to their importance. BOAC was first, followed by Lufthansa, KLM, and Air France. A sizeable number of lesser carriers secured access to eastern Canada where the bulk of Canada's population lies.

The European carriers, particularly when developing new services, closely integrated their services to Canada into their services to the rest of North America. The structure of Canada's carriers' routes has changed considerably the last decade or so in response to changes in the economic environment and government policy. Canada's two major carriers demonstrated a willingness to maintain a viable route system at the expense of reducing peripheral services. They have also recently seen the government introduce additional Canadian carriers in North Atlantic scheduled services and even permit the emergence of competition between Canadian carriers in the most important route on the Canadian North Atlantic, that between Canada and the UK.

3.3 EVOLUTION OF SPECIAL SCHEDULED FARES

The development of a wide variety of special fares on the North Atlantic occurred because of the large proportion of people travelling to visit relatives or for recreation (Tables 5 and 6, Appendix) in a period of excess seating

capacity on scheduled services. As discussed above, these pleasure travellers tend to be very price conscious and willing to alter their behaviour in response to price opportunities.

Immediately after the Second World War there was only a single class of North Atlantic service. During the 1950s two inferior classes of service which were less expensive were introduced, their introduction coinciding with years of rapid passenger growth. In the 1960s and 1970s the scheduled carriers moved to introduce further classes of travel in response to the challenge facing them from charter travel. The "political history" of the evolution of fares is dealt with at greater length in Section 9.3. This section will follow in some detail the pattern of response made by the travelling public to the array of scheduled fares facing them on the North Atlantic.

On April 1 1952 tourist fares were introduced on the North Atlantic and the volume of passengers travelling rose 31 per cent in 1952 over 1951, compared to increases of 17 and 6 percent during the previous two years (calculated from Table 1, Appendix). This new tourist fare was $290US on New York to London in May 1952 compared to $350US in May 1951, $375US in October 1951, or $450US for the basic/first Class fare (Table 9.1) It was thus a reduction of either 17, 22, or 36 per cent depending upon the basic fare with which it is compared. The cabin service for tourist was inferior and

the seats had a a narrower pitch. During the first year, 63 per cent of those travelling on the North Atlantic used the lower fare. (Davies 1964, 461)

In 1958 the economy class fare was introduced. Economy had a narrower pitch for its seats and offered only a sandwich meal but it cost 58 per cent of first class, 67 per cent of tourist, (calculated from Table 9.1). Its introduction had no clear impact on the volume of traffic. In 1957 scheduled North Atlantic traffic had grown by 20.4 per cent over 1956 with fares remaining constant. In 1958 traffic grew 23.3 per cent. In 1959 it grew 23.2 per cent although their was no change in the economy fare. The main effect of the introduction of the economy class fare was that tourist class was driven out of existence. In the first year 74 per cent of IATA passengers on the North Atlantic travelled economy (IATA 1958c) and by July of 1960 IATA carriers had dropped tourist class service on the North Atlantic. This demonstrated that, unless clear restrictions were placed on access to lower fares, not only might lower fare categories attract additional travellers but that they would also attract passengers otherwise willing to travel at higher fares.

In the early 1960s the main reason that charter had dropped to as low a proportion of North Atlantic traffic as it did, was that charter seats were not being provided by the carriers with available aircraft since they preferred to

employ their aircraft in high season carrying full fare passengers. In 1963, for example, Edmonton had 50 charter flights operated from it to Europe: one by TCA, three by Lufthansa, six by CPAL, and 40 by a new North Atlantic charter carrier, Wardair. It was estimated, however, that there was adequate demand to have supported 25 more flights each by TCA and CPA, had they made the aircraft available. (Canadian Aviation Magazine Sept. 1963, 47) It appears, that once the aircraft were made available, charter expanded rapidly.

First class traffic, which according to IATA's World Air Transport Statistics had comprised a little over twenty per cent of North Atlantic traffic at the end of the 1950s, had fallen to a little under ten per cent in the mid 1960s and would decline to about five percent in the early 1970s (Table 6. Appendix). This was a result of the use of normal economy fares by cost-conscious business and government and the rapid growth in promotional fare traffic. The attraction of Concorde services on certain routes and the discouragement of pleasure traffic caused by the economic slowdown and higher fares resulting from the oil crises would take it to over 6 per cent in the late 1970s. By the mid 1980s,however, it would decline to about four per cent (Table 7, Appendix).

In the mid 1960s, economy was still the dominant type of fare used by passengers (Table 6, Appendix). Its share

declined as passengers switched to lower categories of fares, falling to below 50 per cent by 1966, to about 25 per cent in 1970, and to below 16 per cent in 1972. It recovered to about one quarter of the market during the difficult period from 1974 to 1977. It then fell back to about 20 per cent of the market (Table 7, Appendix). In recent years, the former economy class has split into the more expensive business class with a higher fare and somewhat improved level of service and the full economy class. Each comprise about 10 per cent of the market.

Excursion class fares had been introduced on the North Atlantic in 1948 to encourage winter travel. They were available during the off season months until 1956 at which time they were withdrawn. In 1960, however, 14/21 day excursion fares were introduced and by 1964 formed a fifth of the market. Their share continued to rise and by the end of the 1960s they had passed the 25 per cent mark. Then in 1970 the 22/45 day excursion fare was introduced. As a result, excursion fares passed economy fares in importance and reached 39 per cent of the market compared to 26 per cent for the Economy fare (Table 6, Appendix). The preferred form of the excursion fare was, from the date of its introduction, the longer-period fare. Excursion fares continued to increase in importance until the APEX fare was introduced in 1975. In 1974 excursion fares provided 42.4 per cent of the market while in 1975 excursion fares provided 35.7 per

cent and APEX fares another 6.8 per cent. Excursion fares declined consistently in importance after the introduction of APEX fares until 1985. By 1977 they had fallen to about a quarter of the market, by 1978 to less than a fifth of the market, and by the mid 1980s to about 10 per cent of the market.

In 1972 the charter market on the North Atlantic was transformed by the introduction of a new type of charter fare, the ABC (Advance Booking Charter) fare. No longer did a traveller wishing to travel charter have to belong to a organization with a purpose other than travel which chose to charter an aircraft. All he had to do was make his reservation a certain time in advance and pay his complete fare before the required cut off date. Although this did not trigger a tremendous increase in charter travel, soon almost all those travelling charter were flying on ABC fares. It was therefore relatively simple for scheduled carriers to develop a similar fare concept to compete with the charter carriers. This was the APEX concept, advance purchase excursion fare, introduced in 1975. The fare required advance booking by a certain date and full payment before the required cutoff date.

When introduced, APEX fares occupied 6.8 per cent of the market (Table 6, Appendix). By 1978, when Super APEX fares were introduced, the share of the market held by the two varieties of APEX fares reached 27.2 per cent, as shown in

Table 7 of the Appendix. This made them more important than either the Economy or Excursion categories. Super APEX are similar to APEX fares in their advance booking requirements but the booking times may be longer and/or they may have higher deposit and cancellation fees. They are, however, less expensive. On inquiry to Air Canada in the high season of 1987, for example, the APEX fare Montreal-London was $1023Can while the Super Apex fare was only $763Can. By 1980 APEX and Super APEX fares provided slightly over 40 per cent of the market and in 1985 this passed 50 per cent. In 1986 this market share fell back slightly to 46.6 per cent as almost all the other categories showed a marginal increase in importance.

In 1978 two other types of fares were introduced as well as Super APEX. These were standby and budget fares. These were introduced in response to the appearance of the Laker Skytrain service between New York and London. Standby fares were similar to Skytrain fares in that they were only available immediately prior to the flight if space was available. Budget fares allowed the airline to choose the traveller's time of departure within a certain time period. These fares achieved a 6 per cent share of the market initially but have shrunk to almost nothing since Laker's demise.

Youth fares were introduced by Sabena on the instruction of its government in 1971. A creation of the prosperity of the end of the 1960s and start of the 1970s which had

encouraged student travel to Europe, and achieving a 13.1 per cent share of the market in 1972, it withered in the face of the economic realities of the mid and late 1970s and in the face of opposition from the United States. By the start of the 1980s it had fallen to about 1 per cent of the market.

Affinity fares had been introduced to compete with the charter carriers when those carriers were bound by the affinity restriction. They achieved their greatest popularity at the opening of the 1970s at the modest level of 7.7 per cent in 1970. With the appearance of ABC charter and APEX scheduled fares they declined to below 2 per cent by 1977. GIT, group inclusive tour, and CBIT, charter bulk inclusive tour, fares were introduced by the scheduled carriers in the mid 1960s to also compete with the charter carriers prior to the introduction of ABC charter fares. They also achieved their greatest popularity prior to 1972 with 13.1 per cent of the market in 1969 but remained of considerable importance at around 10 per cent of the market till the introduction of the Super Apex fares in 1978 (Tables 6 and 7, Appendix).

In conclusion, the last two decades of scheduled fare development and choice reflect that fact that there exists a relatively small set of travellers, frequently on business expense accounts, for whom comfort and immediate access to a return flight are worth a considerable premium and a large

second set of travellers which is very price conscious and is also willing to adapt to a considerable range of booking and payment requirements. In the early 1960s, as will be discussed in Chapter VII, a large number of seats became available on the North Atlantic at low charter fares as a result of the capacity that became available when scheduled carriers replaced their piston-engined aircraft with jet aircraft. Once the scheduled carriers were able to develop a reasonably comparable range of fares and fare restrictions, they were able to win back most of the portion of the market they had lost on the North Atlantic. Special circumstance in the Canadian North Atlantic market meant that scheduled carriers have proved less able there than in the North Atlantic market in general to win back charter passengers, as will be discussed in Chapter VII. This comparable range of fares included the APEX and Super Apex fares of IATA carriers and the low fare, low level of service, operations provided by scheduled carriers like Laker's Skytrain and People Express. After a period of increased diversification of fare types as the scheduled carriers sought a successful method of fighting the charter carriers, there was been a movement toward greater simplicity as APEX and Super Apex have become the predominant fares of choice. The history of the last two decades also indicates that when restrictions on special fares are relaxed, as has been the tendency on the North Atlantic, there will be a drift from the higher to lower type of fare by pleasure travellers at

the same time as new passengers may be attracted. In future it is likely to be more sensible for scheduled carriers to lower the basic fare used by pleasure travellers to attract new passengers than to try and develop new and specially tailored fares for particular groups. Special fares were developed on the North Atlantic in the past because of the peculiar nature of this market. It was primarily a market dominated by pleasure travellers and both scheduled and charter carriers had established a strong presence in the market. The challenge from the charter carriers was finally effectively met when the scheduled carriers developed a comparable fare that was readily available to the public. The earlier attempts to meet this challenge by developing a wide variety of special fares tailored to different segments of the market had failed.

3.4 DEMAND COMPONENTS, INFLATION, AND EXCHANGE RATES

Air passenger traffic on the Canadian North Atlantic has three principal components. These are Canadian visitors to Europe, European visitors to Canada, and European and other immigrants to Canada arriving from Europe. The relative importance of these categories has changed over the last four decades. The availability of data permits the examination of three periods in some detail: 1957-1960, 1964-1966, and the period since 1972.

3.4.1 1957-1960

This subsection will first determine the importance of European visitors and transatlantic immigrants during this period. The remainder will then be assumed to be Canadians.

European visitors arriving by air are assumed to have return tickets to Europe from Canada and the importance of European visitors in providing traffic is thus assumed to be

TABLE 3.8

European Visitors arriving Directly by Air

1957-1960

Year	British	Other	Total
1957	8,820	4,748	13,568
1958	10,311	5,309	15,620
1959	11,784	6,975	18,759
1960	16,457	9,266	25,723

Source: Statistics Canada series 66-201.

equal to twice the number of such arrivals, as shown in Table 3.8, divided by the volume of scheduled air passengers on the North Atlantic (Table 3.2). Charter Traffic, discussed in Chapter VII, was small enough at this time that it can be disregarded. European visitors (Table 3.9) thus provided on average a little under 20 per cent of total traffic.

TABLE 3.9

Role of European Visitors 1957-1960

Year	Per Cent
1957	21.0
1958	18.5
1959	18.9
1960	19.8

Sources: Tables 3.2 and 3.8.

The difference between westbound and eastbound traffic is assumed to be explained by the presence of transatlantic immigrants. It is, therefore, possible to determine their importance by subtracting the eastbound total from the westbound total and dividing the remainder by the figure for total traffic. The necessary data are available for traffic carried by European carriers to Canada during this period and are presented in Table 3.10. Immigration thus can be seen to have played an important but diminishing role for European carriers in the later 1950s.

The actual figures for arrivals by air of immigrants according to their most recent country of permanent residence are also available for these years and are presented in Table 3.11. Included are the totals for European countries, African countries, Middle Eastern Countries, and India and Pakistan. Since 1957 was an exceptional year in

TABLE 3.10

Role of European Immigrants for European Carriers

1957-1960

Year	Immigrant Estimate	Total Traffic	Per Cent
1957	17,446	67,084	26.0
1958	12,375	85,585	14.5
1959	13,727	109,625	12.5
1960	12,029	148,625	8.1

Source: Statistics Canada series 51-202

which the highest immigration since the Second War occurred, and which also saw a steep rise in the percentage of immigrants using air transport to arrive in Canada, the 1956 figures are also included.

The result is presented in Table 3.11. Except in 1957, which as noted above was an exceptional year, the total picture is similar to that for foreign carriers presented in Table 3.10, with the percentages running slightly higher.

If we exclude 1957 as being an exceptional year, the basic picture of demand at the end of the 1950s shows European visitors providing just about 20 per cent of the total traffic with transatlantic immigrants providing another 10 to 15 per cent. Canadian visitors to Europe provided, therefore, about 65 to 70 per cent of total traffic.

TABLE 3.11

Role of Immigration 1956-1960

Year	Transatlantic Immigrants Arriving By Air	Per Cent of North Atlantic Traffic
1956	16,131	(16.3/16.6)
1957	41,625	32.2
1958	27,682	16.4
1959	26,556	13.4
1960	33,094	12.7

Source: The Department of Immigration and Citizenship's annual publication, Immigration for the years 1956-1960.
Note: The per cent of North Atlantic traffic for 1956 is based on the assumption that the increase in the volume of passengers carried by foreign carriers on the Canadian North Atlantic in 1957 over 1956 was the same as the increase enjoyed by Canadian carriers (giving 51,000 for 1956), or alternately on the assumption that in 1956 the proportion of passengers carried by foreign carriers was the same as in 1957 (which gives 50,000 for 1956).
Note: In 1957 an additional 17,565 were carried by the so called "Airbridge to Canada", a series of 207 charter flights booked by the Canadian government when inadequate sea passage was available.

3.4.2 1964-1966

The role of European visitors arriving by air will first be determined. A figure for immigration will then be obtained from the difference between eastbound and westbound traffic. The remainder of the traffic is then assumed to be Canadian in origin.

The number of European visitors arriving by air was obtained by taking the total number of European visitors arriving directly in Canada and subtracting from this the number of foreign visitors who arrived by sea at the ports of Halifax and Montreal. This was done on the assumption that very few visitors from other parts of the world would be disembarking at these ports by sea and that those Europeans who did arrive by sea would do so at the two major East coast ports. This total was then doubled and divided by the total North Atlantic air passengers, including charter passengers (Table 3, Appendix). The IATA estimate for the total traffic was used for each of the three years for consistency. The results are shown in Table 3.12. European visitors thus provided a little over a quarter of the total demand for air traffic, up from a fifth during the late 1950s.

In creating Table 3.13, which shows the importance of immigrants, the Canadian government figures were used to estimate the importance of immigrants to the scheduled carriers. It was assumed that no immigrants travelled by charter at this date and the estimation of their importance in total Canadian North Atlantic air traffic used IATA estimates of total traffic since adequate air charter figures are not published by the Canadian government for this period.

TABLE 3.12

Role of European Visitors 1964-1966

Year	European Visitor Arrivals by Air	European Air Passengers	Per Cent
1964	79,714	159,000	27.0
1965	96,120	192,000	27.2
1966	113,230	226,000	25.3

Source: Statistics Canada series 66-201.
Note: If in 1966 the 1,543 African visitors arriving by air are added to the Europeans, a role for transatlantic visitors of 25.7 per cent appears, if the 1,542 from the Middle East are added it becomes 26.0, and finally if the 1,384 from the subcontinent are added the role becomes 26.3 per cent, a total difference of 1 per cent.

TABLE 3.13

Role of Immigrants 1964-1966

Year	Transatlantic Immigrants	Per Cent of Scheduled Traffic	Per Cent of All Traffic
1964	45,051	10.3	7.6
1965	61,532	11.3	8.8
1966	89,922	12.9	10.1

Source: The first and second columns were created on the basis of data from Statistics Canada series 51-201 and 51-202. Column three compares column one to data from Table 3 of the Appendix.

The importance of immigration in 1964-1966 to scheduled

carriers was only marginally below its importance at the end of the 1950s. Its importance in the total market had, however, declined to about half to two thirds with the growth of charter traffic.

Assuming that European travellers were proportionately distributed between scheduled and charter traffic, Canadians thus provided slightly over 60 per cent of scheduled traffic and between 62 and 65 per cent of total traffic. Overall, therefore, Canadians continued to provide about the same proportion of the market as at the end of the 1950s but European travellers had become somewhat more important and Transatlantic immigrants somewhat less important than in the previous period considered.

3.4.3 1972-1985

During this period the European visitor becomes much more important than previously. Statistics on the number of Europeans and Africans arriving directly in Canada are available from 1972. The statistics do not differentiate between those arriving by sea and those arriving by air.

The proportion of travellers arriving by sea was, however, very low by the beginning of the 1970s. On the North Atlantic as a whole it was 2.5 per cent in 1970 as shown in Table 3.4. The proportion is likely to have been smaller on the Canadian North Atlantic. It does seem to have been so in the case of Canadian returnees to Canada. In 1970, if

the proportion of direct returnees to Canada from overseas who visited Europe was the same as the proportion of all Canadian returnees (including those travelling via the United States) who visited Europe, then some 532,000 Canadians returned directly from Europe. Of all Canadians returning directly to Canada, some 9,914 returned via Canada's two main seaports, Halifax and Quebec. If these were returning from Europe then about 1.9 per cent returned by sea.

Table 3.14 shows the importance of European travellers in generating traffic, assuming 98 per cent of European travellers arriving directly in Canada travelled by air and that an equal number returned to Europe from Canada. For consistency the IATA totals for the total number of air passengers on the Canadian North Atlantic (Table 3, Appendix) were used in calculating the role played by these European and African visitors. Canadian government totals, however, were used for 1976 and 1977 because IATA totals were not available for these years.

In 1972 visitors from Europe and Africa were about 4 per cent more important in generating traffic than they had been in 1966. From 1973 to 1976 traffic originating in Europe and Africa would increase in importance to over 39 per cent. It would fall back somewhat in importance in 1977 but would then begin to rise again, and would peak at over 50 per cent in 1981. Their role would then decline consistently in importance until 1985 returning to about the same level as in 1975 and 1977.

TABLE 3.14

Role of European and African Visitors 1972-1985

Year	E. & A. Visitors	E. & A. Air Passengers	Role
1972	355,200	696,000	29.7%
1973	460,400	902,000	33.5%
1974	507,100	994,000	34.0%
1975	536,200	1,051,000	35.6%
1976	607,300	1,190,000	39.1%
1977	561,700	1,101,000	35.4%
1978	616,200	1,208,000	38.6%
1979	725.800	1,423,000	43.0%
1980	734,700	1,440,000	47.4%
1981	761,900	1,493,000	50.3%
1982	708,000	1,388,000	47.2%
1983	627,100	1,229,000	40.5%
1984	645,700	1,266,000	39.8%
1985	631,600	1,238,000	36.2%

Source: The data on European and African visitors is from Statistics Canada series 66-201 and 66-202.

During the 1970s and 1980s European immigrants became a very minor element in North Atlantic traffic. Table 3.15 compares the number of European immigrants to Canada to the volume of scheduled traffic and the volume of all traffic (Table 3, Appendix). In 1972 the importance of European immigrants to both scheduled and total passenger traffic on the Canadian North Atlantic was about one quarter of what it had been in 1966. After 1976 European immigrants rarely provided more than two per cent of scheduled traffic or more than 1.5 per cent of total traffic.

TABLE 3.15

European Immigration 1972-1983

Year	European Immigrants	Per Cent of Scheduled Traffic	Per Cent of Total Traffic
1972	51,293	3.1	2.2
1973	71,883	3.8	2.7
1974	88,694	4.2	3.1
1975	72,898	3.7	2.5
1976	49,908	2.4	1.6
1977	40,748	1.9	1.3
1978	30,075	1.3	1.0
1979	32,858	1.4	1.0
1980	41,168	1.8	1.4
1981	46,295	2.1	1.6
1982	44,356	2.1	1.5
1983	24,312	1.1	0.8

Source: Annual Reports of the Canadian Departments of Immigration and Citizenship and of Employment and Immigration for the volume of Immigration. The totals for scheduled and total traffic are those presented in Table 3 of the Appendix.

If the proportion of Europeans was approximately the same on scheduled service as on total service, in 1972 Canadian visitors to Europe played a larger role in providing both scheduled and total traffic than they had in 1966. Their share of scheduled traffic was about 67 per cent and of total traffic was about 68 per cent. From 1973 to 1978 Canadians provided between 60 and 65 per cent of both the scheduled and total markets. From 1979 to 1983 inclusive it was below 60 per cent, declining from 1978 to hit a low of about 47.5 per cent of scheduled traffic and 48 per cent of

total traffic in 1981. Thereafter it recovered to over 60 per cent of both the scheduled and total markets in 1985.

3.4.4 Effect of Inflation and Exchange Rates on Demand 1972-86

The changes in the relative importance of Canada and Europe during the 1970s and 1980s in generating North Atlantic Traffic occurred at the same time as inflation was affecting Canada and the European countries at varying rates and that the exchange rates between Canada and the European countries were also changing. These changes are described in Tables 8 and 9 of the Appendix.

In deciding to travel abroad, people compare the prices they will have to pay abroad to those they have to pay at home. If the destination has a higher inflation rate than the home country, people will become less willing to visit it, similarly, if the exchange rate moves against the home country, people will be less willing to visit the destination. The combined effect of the difference in inflation rates and the movement of the the exchange rates gives effective prices. An index to the effective prices for Canadians in each of the major European countries shown in Tables 8 and 9 of the Appendix is presented in Table 10 of the Appendix.

When Canadians visit Europe they commonly visit more than one country. The Europeans visiting Canada also come from

many countries. To obtain a better understanding of the overall effect of the movements of effective prices between Europe and Canada a combined index of effective prices was prepared. It is presented in Table 3.16. Five countries were included in the index, the UK which is visited by the largest number of Canadians visiting any country in Europe and which sends the largest number of visitors to Canada, France and West Germany, which rank second and third in the number of Canadians visiting them and which are third and second in the number of visitors they send to Canada, along with Spain and Italy which are also important as destinations visited by Canadians. The UK was given a weight of 4, France and West Germany were both given a weight of 2, and Spain and Italy were both given a weight of 1. Table 3.16 also presents the number of Canadians visiting Europe and the number of Europeans visiting Canada for each of the years covered by the overall index of effective prices.

When the index of the changes in effective prices is compared to the number of Canadians choosing to visit Europe and to the number of European visitors arriving in Canada for the period 1972-1975 a number of trends become clear. As long as the index of effective prices ranged between 100 and 125 the number of Canadian visitors to Europe tended to increase, although the initial movement of the index to 115.9 in 1973 and its fluctuation around this level from 1973 to 1976 correspond to a plateau effect of sorts. The

TABLE 3.16

Index of Effective Prices in Europe 1972-1985

1971=100

Year	Effective Price Index	Canadians Visiting Europe	European Visitors Arriving Directly In Canada
1972	105.7	528,500	347,100
1973	115.9	827,000	449,000
1974	111.7	823,000	493,000
1975	123.7	851,600	522,600
1976	108.8	919,000	589,000
1977	120.0	1,068,000	545,300
1978	138.8	1,013,000	598,000
1979	159.7	943,000	706,700
1980	164.2	788,000	714,600
1981	143.6	743,000	740,100
1982	125.5	761,000	683,000
1983	110.3	894,000	601,900
1984	105.2	1,058,000	623,000
1985	108.5	1,235,000	609,100

Source: Column one is the weighted result of the indexes of effective prices for European countries presented in Table 10 of the Appendix, columns two and three are from data Statistics Canada series 87-401.

steep rise of the index between 1977 and 1980 from 120 to 164 corresponded to a steady decline in the number of Canadians choosing to travel to Europe. This decline in Canadian visitors to Europe continued until 1981 by which time the index of effective prices was already declining. When this decline proved permanent, lasting to 1984, the number of Canadian visitors to Europe began a steady recovery. An improvement in the index from the Canadian point of view is

a deterioration from the point of view of European residents. The pattern of European response to the movements of the index saw a steady rise in the number of Europeans arriving until 1976. There was a slight fall in 1977 when the index moved from 123.7 to 108.8, a deterioration from the European point of view. As the effective price index began its period of sharp increase, European visitors also rose steadily, until the year following the peaking of the index. The number of direct European visitors then declined until 1983, the year following the return of the index to about the same level as it had been in 1975/77. In 1983-1985 the number of European visitors fluctuated at a little over 600,000, moving as one might expect with the index in 1984 and against it in 1985. When the index of effective prices moves dramatically and/or when its movements continue in the same direction for some time it has a clear effect on the behaviour of Canadian visitors to Europe and European visitors to Canada. In other circumstance other forces are likely to visibly affect the movement of visitors.

The relative importance of either side of the Atlantic in providing return traffic on the Canadian North Atlantic is likely to be strongly influenced by future movements of the effective prices in the two areas. A prolonged rise in the effective prices faced by Canadians will likely lead to a decline in the number of Canadians choosing to visit Europe.

Since, however, the increase in effective prices for Canadians corresponds to equivalent decline from the European perspective it will stimulate European travel to Canada. Between 1977 and 1981 the decline in Canadians travelling to Europe of 325,000 was partly offset by an increase of 194,800 in Europeans travelling to Canada. The reverse movement of the index from 1981 to 1983 saw Canadian visitors to Europe rise by 151,000 and Europeans decline by 138,200. It is, therefore, also likely that the hopes for continued growth on the Canadian North Atlantic depends primarily on Canada since the European counter movement to the effect of change in effective prices remains smaller than the Canadian movement. The Canadian inflation rate must stay at least in line with European inflation and the Canadian dollar must maintain itself against the European currencies.

The importance of relative prices on both sides of the Atlantic in determining the decision of passengers to travel has increased relative to airfares between the 1950s and the 1970s. In the 1971 annual report of the Air Transport Association of America it was estimated that in 1958, assuming the passenger paid the average air fare, the fare would have been equal to 75.8 per cent of a travellers total expenses for airfare, meals, and hotels for a ten day stay in Europe while in 1970 it would have been only equal to 48.7 per cent of the total. (ATA 1971, 19) If instead of a ten day stay

a twenty day stay is considered then the proportions were 61.0 per cent in 1958 and 32.2 per cent in 1970. Since the Canadian dollar was roughly on a par with the American during this period the picture would be similar for Canadians.

3.4.5 Travellers' Choices of Destinations and Routes

As can been seen from Table 11 of the Appendix, the destinations of Canadians in Europe have changed over the last three decades. The proportion of Canadians choosing not to include the UK as part of their visit to Europe has risen steadily. At the end of the 1950s only about one quarter of Canadian visitors omitted it. By the mid 1960s it was about one third, by the mid 1970s it was somewhat over 40 per cent and in the early 1980s it was slightly under 50 per cent. The proportion choosing to visit only the UK has in contrast shown no consistent trend but has tended to fluctuate between 30 and 40 per cent. It approached 40 per cent in the early 1960s and again from 1968 to 1972. It approached 30 per cent during the first oil crisis, 1973 to 1975, and again after 1982.

From 1958 to 1967, Statistics Canada series 66-202 follows the percentage of Canadians returning from Europe who chose to return via the United States rather than directly. It does not, however, distinguish between air and sea travellers in this period of rapid transition from air to sea travel. The two peak periods of diversion were 1959 and

1963-1964. This is suggestive because it was at the end of 1958 that PAA and BOAC introduced jet service on the North Atlantic and TCA was not able to respond until 1960. The early 1960s were also the years in which charter travel was establishing itself in Canada. This would suggest that the introduction and exploitation of a new service, be it jet travel or charter services, in the United States will lead to a diversion of traffic via American gateways until it is countered in Canada.

Throughout the last four decades a large proportion of Europeans visiting Canada have entered across the American border. A consistent count is available from 1972 to 1983. Between 1972 and 1977 it varied between 32 and 35 per cent. Between 1978 and 1983 it varied between 36 and 38 per cent except in 1980 when it rose to almost 40 percent (Statistics Canada series 66-201, 66-202, and 87-401). The period 1978-1982 was the period when effective prices were particularly favourable to Europeans. This may have not only encouraged more visitors to come directly from Europe but may also have encouraged more Europeans in the United States to have added Canada to their itinerary. In the later 1940s and in the 1950s, when the bulk of overseas visitors to Canada were Europeans, only the statistics for the total number of overseas visitors are available. In 1946-1949, between 49.6 per cent and 66.2 per cent of overseas visitors arrived via the United States. In 1950-1954 it was between 42.0 and

46.8, in 1955-1958 it was between 40.4 and 41.8, and in 1959 it dropped to 37.5. In 1960 it declined further to 33.4 per cent. The replacement of sea travel by air travel had the effect of reducing the proportion of Europeans arriving in Canada via the United States, although a sizeable proportion continued to do so (Statistics Canada series 66-202).

The bulk of travellers, whether European or Canadian, on the Canadian North Atlantic have been travelling either "for recreation" or "to visit friends or relatives" for the last three decades, as shown in Tables 4 and 5 of the Appendix. In 1978/79 a change in the questionnaire given to arriving travellers was introduced so the periods before and after that date are not strictly comparable.

Between 1956 and 1978, the percentage of Canadian visitors travelling for recreation or visiting to the UK varied between 86.7 and 93.9 per cent and was constantly over 90 per cent from 1958 to 1973. Until 1964, two thirds or more stated their purpose was visiting relatives, thereafter it has tended to decline, falling by the late 1970s to percentages in the mid 40s. After the introduction of a new category, travelling for more than one purpose, the joint total of those travelling for recreation or visiting ranged from 77.0 to 80.3 per cent with the purpose of visiting relatives jumping to between 55.8 and 66.3 per cent.

The percentage of travellers from Canada visiting both the UK and Europe who have travelled for pleasure or to visit relatives is consistently lower than those Canadians restricting themselves to the United Kingdom. They visited relatives less than half as often and travelled for recreation more frequently than those just visiting the UK.

The percentage of visitors who restricted themselves to only Europe who have travelled for these two purposes is intermediate between the two previous groups. They go more often to visit relatives than to travel for recreation and overall the percentage travelling to visit relatives is not greatly below that of those visiting only the UK.

Examining the motives of Europeans who visited Canada at the end of the 1950s, one sees that over 75 per cent of those from the UK travelled for recreation or to visit relatives and over 70 per cent of those from the continent did so. This is somewhat lower than the equivalent percentage of Canadians visiting Europe at this time.

In the mid 1960s, the percentage of visitors from the UK travelling for these two purposes had risen to about 85 per cent, with under 10 per cent travelling for recreation. There were still strong exchange controls for pleasure travelling at this time. For continental visitors, except in 1963 when the percentage of recreation and visiting travellers jumped to 83.6 per cent, about 70 per cent travelled

for recreation or visiting with only a little over 10 percent coming to travel for recreation.

From 1968 to 1978, the total percentage from the UK travelling for recreation or to visit relatives remained about the same as in the mid 1960s. Recreational travel became somewhat more important relative to travel to visit relatives after 1971 but fell again somewhat in the difficult years of the latter 1970s. After 1979, the revised categories show that the percent of pleasure travellers from the UK was about 10 per cent lower than that for Canadians visiting the UK and that the purpose of visiting relatives remains predominant. When the behaviour of all European travellers is compared to that for those from the UK, the percentage of all Europeans travelling for recreation and to visit friends and relatives is consistently slightly lower. Recreational travelling is somewhat more popular with Europeans and visiting relatives is somewhat less popular.

On the Canadian North Atlantic, travel for pleasure has played and continues to play the predominant role in motivating travel. This makes traffic very price sensitive. Family connections also have played in the past a predominant role in providing the motive for North Atlantic travel and still remain very important, especially for Europeans visiting Canada and Canadians going to visit just the UK. After this generation, the decline in European immigration may well reduce the demand for transatlantic travel.

To summarize, from the later 1950s until the early 1970s about 65 per cent of Canadian North Atlantic travel originated in Canada. The remainder came from Europe. From the late 1950s until the mid 1960s, immigration provided perhaps 10 to 15 per cent of scheduled traffic although its role in overall traffic declined after the development of charter travel. During the 1970s and 1980s the importance of immigration from Europe approached zero but the role of Europeans travelling for all purposes rose to fully half the market in response to changes in effective prices. The key to a large scale growth of demand for passenger transport on the Canadian North Atlantic remains, however, in Canada. Rapid growth requires a favourable environment in the form of a reasonable inflation rate and a strong currency in Canada vis a vis that of the European countries.

Canadians have demonstrated that they are willing to travel via the United States to take advantage of services which are not available in Canada. A sizeable proportion of Europeans visiting Canada arrive via the United States and likely consider that their visit to Canada is merely part of their visit to North America. It is therefore likely that a diversion of these via the United States is also probable under the same circumstances as the diversion of Canadian travellers.

The principal motive for North Atlantic travel remains pleasure travel either to visit relatives or for recreation.

Family connections remain of vital importance and it is difficult to predict the impact on North Atlantic travel in the long term of changes in Canadian immigration patterns.

3.5 CONCLUSION

Traffic on the Canadian North Atlantic grew rapidly from the commencement of service until the mid 1970s. It has since stagnated though showing somewhat of tendency to rise over time. During the 1950s there was an important intermodal shift from sea to air travel on the Canadian North Atlantic. Charter travel became very important in the Canadian North Atlantic region and from the mid 1960s has been more important in the Canadian market than in the general North Atlantic market. There has been a steady increase in competition in the Canadian North Atlantic scheduled market. To deal with the advent of charter traffic the scheduled carriers developed a wide range of fares. They eventually won back the majority of North Atlantic travellers following the introduction of APEX and Super APEX fares and the arrival of "cut rate" non-IATA carriers. When several special fares are offered there is a tendency of a drift to the lowest possible fare by pleasure travellers once carefully defined restrictive conditions are relaxed. During the years since the late 1950s, except for a brief period at the end of the 1970s and at the opening of the 1980s, Canada has provided a little under two thirds of Canadian North Atlantic traffic. When, however, effective prices move seriously against Cana-

dian travellers and in favour of European travellers the importance of Canada as a source of traffic will decline but the increase in European travellers will not fully make up the difference. Pleasure travel remains the predominant motive for North Atlantic travel. Family connections, revealed by the number of travellers going to visit family and friends, remain very important.

Chapter IV will now examine the role of technological change in the Canadian North Atlantic.

Chapter IV

TECHNOLOGICAL CHANGE ON THE CANADIAN NORTH ATLANTIC

Technological change has played an important role in the evolution of the North Atlantic market for air traffic. Technological change has kept costs down while improving access to distant markets and increasing passenger comfort, convenience, and safety. The ability of a carrier to remain competitive in this market depended on its choice of aircraft.

The first section of this chapter will discuss technological change in the context of commercial airliner development. The second section will present the history of technological change on the North Atlantic, paying particular attention to airline economics. The third section will study the decisions on aircraft selection made by Canada's main North Atlantic carriers.

4.1 COMMERCIAL AIRCRAFT AND TECHNOLOGICAL CHANGE

Technological change occurs in several steps. Schumpeter provided the basis for the modern three stage concept: invention, the conception of the new product or process and the solution of the technical problems associated with it;

innovation, the carrying of this product or process into economic practice; and imitation or diffusion (Schumpeter 1934, Ch. 2). The relative effectiveness of competition involving large numbers of small firms, versus oligopolistic rivalry, in providing technological progressiveness is the subject of strong debate (see, for example, Scherer 1980). International air transport is inherently oligopolistic, partly because of restricted access and partly because transport operates with a multiplicity of city pair markets. Aircraft are a fundamental element in non-price product differentiation rivalry among airlines and are also basic to the economic efficiency of carriers in cost reduction and general output performance.

Innovation is fundamentally a change in the way of doing things. It may affect the process of output, or the nature of the product, or both. Technological change in aircraft has affected both the economic conditions of the provision of service and the nature and unit cost of the output provided.

Technological innovation is basically engineering in nature while its diffusion is based on business economics and rivalry. Aircraft may be conceived as a production function designed to produce available passenger seat miles per annum. This output is a product of the number of seats, the speed, and the number of hours of utilization per annum. The output is provided with differing potentials in range

and with differing components for passenger comfort, such as quietness, spaciousness, and pressurization. Technological progress in commercial aircraft in realizing upon the scientific potentials for economic progress in the post Second World War period has been impressive.

Inventions having a noticeable effect came from many sources, sometimes military, as with the jet engine, and sometimes civilian. In at least one case the basic concept came from the chief executive of an airline. This was the Boeing-747 conceived by Juan Trippe of PAA based on the C5A military project which Boeing lost to Lockheed. The basic concept was then refined between Trippe and William Allen of Boeing.

The development of aircraft able to fly long distances non-stop has been primarily in the hands of the very few aircraft manufacturers with the necessary experience and the human, physical, and financial capital able to contemplate such an investment of time and resources. Until recently these have been primarily American.

The American industry benefitted considerably from an allied decision to allocate production of transport aircraft to the US. The US industry developed and put into production before or during the War three four-engined aircraft with transatlantic potential: the Boeing-307 in mid 1940, the Douglas DC-4 in early 1943, and the Lockheed L.049 in

mid 1944. These three aircraft were all four engined monoplanes, able if necessary to operate on only three of their engines, and were designed to be pressurized, although the DC-4 was produced during wartime only in a non-pressurized version.

The somewhat similar nature of the aircraft developed by Boeing, Douglas, and Lockheed was the result of the fact they had all been designed to compete in the transcontinental U.S.A. market. The home market of these U.S. firms provided a demand for aircraft able to fly between its major population centers which tended to lie on the East and West Coasts.

The initial lead possessed by American manufacturers in long-distance piston aircraft meant that non-American manufacturers were only likely to be able to enter the competition to supply aircraft suitable for North Atlantic operation after having developed aircraft incorporating new technology. The first such entry would be the British corporation, Bristol, which produced the Britannia 310. This aircraft, entering service in 1957, was the first aircraft to incorporate turbo-prop engines in a civilian long-range passenger aircraft. The second such entry was the British company, De Havilland, which developed the Comet, a pure jet. The Comet 4 introduced turbo jet passenger service on the North Atlantic in 1958. Vickers-Armstrong also developed a long-range civilian jet aircraft. Later an Anglo-

French consortium designed and built the first supersonic passenger airliner, the Concorde, and most recently, Airbus, a European consortium has emerged as a major producer of airliners.

Aircraft design and development has often been the product of an industrial organization "feed back" effect where the airline customers in examining the performance of aircraft designs indicate their needs for aircraft which will impact on the economic structure of their markets. The connection between a major airline and a manufacturer often has been extremely close. Manufacturers of aircraft engines are often involved in such a collaboration because an aeroplane may be designed around a particular engine. Development may include governments as well.

An example of the many parties that can be involved in the creation of a new aircraft, and the complexities of their relationships, is presented by the case of the design of the Lockheed 1011 TriStar, a version of which, the L.1011-500, was used on the North Atlantic by Air Canada and other carriers. The original L-1011 was designed in response to a specification drawn up by American Airlines. American chose to purchase the DC-10. TWA and Eastern Airlines, however, placed orders as did Air Canada and the British Air Holdings company, the parent company of BUA. This aircraft was designed around a jet engine, the RB-211, which was being designed by Rolls Royce. When Rolls Royce

had to raise the price on the new engine to cover development costs Lockheed stated that it was unable to meet the new terms. This forced Rolls Royce into receivership. It became apparent that, if Rolls Royce collapsed and the engine was not produced, then the L-1011 project would have to be abandoned. The design had reached such an advanced stage that no other engine could be substituted. The cancellation of this project would have forced Lockheed itself into bankruptcy. This would then have threatened the survival of Eastern and TWA which had both invested heavily in the project through advance payments for the aircraft and its engines. Air Canada was less heavily committed, standing to lose some $30,000,000US for the 10 L.1011 aircraft that it had ordered. The British government was persuaded to take over Rolls Royce and complete the development of the RB-211 engine, a program which it had already subsidized heavily. It is believed very likely that this decision was taken for fear that Air Canada, which could best weather the collapse of the L.1011 project, might pull out creating a bandwagon effect that would doom both the engine and the plane (P. Smith 1986, 300; Green and Swanborough 1982, 146).

Decisions as to whether new technologies will be introduced and the rate at which they will diffuse are made when airlines decide on purchasing new aircraft. These decisions are often high-risk gambles. Gordon R. McGregor, then head of TCA, gave an excellent summary of the problems in an

address given to the Society of Aeronautical Engineers in New York in November 1954,

> Since anything between two and three years normally elapses between placing a major aircraft order and receiving delivery, and since few airlines can afford to depreciate equipment over a shorter period than seven years, the operator must today order the aircraft which will be completely modern two years hence, and still have traffic appeal nine years hence -- if he can (McGregor, 1980, p.71).

4.2 THE EVOLUTION OF AIRCRAFT ON THE CANADIAN NORTH ATLANTIC

This section will follow in some detail the evolution of the available technology for North Atlantic commercial passenger operations as embodied in long-range civilian aircraft. It will be divided into three subsections. The first subsection will examine the period leading up to establishment of large scale commercial operations following the Second World War. The second will follow the evolution of piston-engine aircraft. The third will follow the evolution of turbine-powered aircraft.

4.2.1 Aircraft Use On The North Atlantic Before 1945

Civil aviation's major problem in establishing service over the North Atlantic was obtaining aircraft able to fly the stage lengths required, regularly and in all types of weather, while carrying an adequate payload.

Before the 1940s, "landplanes" were not generally considered as suitable for use on the North Atlantic by American or British civil aviation carriers. The nonstop distance required was beyond what was practical and the necessary airports were not available in Newfoundland, Eire, and the Azores. Their solution was the flying boat. Boeing developed the Boeing 314 and Imperial Airways commissioned a new long range flying boat, the series "G", from Shorts.

Germany had developed a four-engined landplane, the Focke-Wolfe Condor, one of which in August 1938, made an initial non-stop westbound transatlantic crossing in 24 hours and fifty six minutes and completed the return flight in less than 20 hours. Subsequently it made other experimental flights between Germany and the U.S. but no agreement on the opening of a regular scheduled service could be reached before the outbreak of war in Europe (Davies 1964, 322). The Focke-Wolfe Condor had 26 seats, a maximum take-off weight of 32,120 pounds, and four B.M.W. 132G engines with 720 horsepower each (Brooks 1963, 102).

Dirigibles had been tried by Germany in 1936 and 1937. This was ended by the Hindenburg disaster. Their cost of operation when using hydrogen was similar to that of a flying boat and about twice that of a 1935 DC-3 landplane. Non-inflammable helium with its lower lifting capacity would have raised this by 50 to 100 per cent (Brooks 1963, 34-35). They were, in Smirnoff's words, "Too slow, too dear, too unmanageable" (Davies 1964, 322).

There were initially two routes available for aircraft, a northern route and a southern route. An aircraft flying the northern route proceeded from the North American point of origin to Newfoundland, thence to the Shannon Estuary in Eire, and then on to the point of destination in Europe. Alternately, an aircraft flying the northern route could refuel in Iceland rather than in Eire. An aircraft flying the southern route between Europe and New York flew from Lisbon via the Azores and Bermuda to New York. The prevailing westerlies, however, forced eastbound aircraft, with the range of a Boeing-314 Flying Boat, to fly from New York to Lisbon via Bermuda, the Caribbean, Brazil, and Africa. Although the Brazil-Africa flight stage over water was about 200 miles longer than the Bermuda-Azores stage, it required less fuel. The southern route was longer and ended in southern rather than northern Europe but, because of the milder weather, it could be operated year-round by an aircraft like the Boeing-314, which creation preceded the development of "de-icing" equipment.

Before their retirement in 1945/46, three principal types of flying boats operated on the North Atlantic. The up engined Short S.30, able to carry a two ton payload, had been exclusively a mail plane and had relied on mid-air refueling to make the crossing at all. Up engined S-30s were used briefly in the autumn of 1939 by BOAC, which had replaced Imperial and British Airways. The aircraft were

TABLE 4.1

Transatlantic Crossing Distances

Origin-Destination	Miles
Botwood, Nfld. - Foynes, Eire	1,990*
Gander, Nfld. - Shannon, Eire	1,975**
Gander, Nfld. - Reykjavik, Iceland	2,577
Reykjavik - London, UK	1,168
New York, U.S.A. - Hamilton, Bermuda	755
Hamilton - Ponta Delgada, Azores	2,234
Ponta Delgada - Lisbon, Portugal	901
Hamilton - Port of Spain, Trinidad	1,503
Port of Spain - Belem, Brazil	1,223
Belem - Bissau, Guinea-Bissau	2,439
Bissau - Lisbon, Portugal	1,892
New York, U.S.A. - Ponta Delgada, Azores	2,569
New York, U.S.A. - London, UK	3,443
Montreal, Quebec - London, UK	3,256
Vancouver, B.C. - Amsterdam, Netherlands	4,800

Sources: Unmarked distances are taken from Fitzpatrick and Modlin (1976), that marked * is taken from p.323 of Davies (1964), and that marked ** is converted from the distance in kilometers shown in ICAO (Sept. 1970d).

then diverted elsewhere by the British military. They resumed service, however, in August 1940. The aircraft of the Short "G" series, originally intended to replace it and provide passenger service, were diverted by the requirements of war and never operated on the North Atlantic. The Boeing 314 was the most important flying boat type used. It had a maximum takeoff weight of 82,500 pounds, more than half

again that of the S.30's 53,000 pounds, and had a "still air range" of over 3,000 miles. PAA used this type to open a year round service from New York to Lisbon on the southern route on May 20 1939 and to open a summer service from New York to London on the northern route via Eire on June 24 of the same year. BOAC also acquired three Boeing-314As, which were the first non-UK produced aircraft purchased by BOAC, to operate on the North Atlantic to replace the Short "G" series aircraft taken over by the RAF. The third type was the VS-44, maximum take-off weight - 57,500 pounds, used by American Export Airlines to open a service to Foynes, Eire during the War (Sampson 1984, 55; Davies 1964, 221, 324). AEA become American Overseas Airlines and was eventually acquired by PAA.

While flying boats offered the flexibility of landing on water, these aircraft were costly to operate and had a poor power to weight ratio. The heavy weight was linked to the hull shape and the structural strength required of flying boats. They were unlikely to be a long-run solution to transatlantic commercial air transport.

The use of landplanes to carry passengers regularly across the North Atlantic began in World War Two. They were intitally converted bombers. On May 4 1941 a Consolidated Liberator was used to begin the North Atlantic Return Ferry Service, which was intended to return to Canada the crews employed to fly newly built bombers from North America to

the UK. It had seats for 14 and on occasion carried 22 persons (Davies 1964, 287; P. Smith 1986, 89). A converted Lancaster bomber was also used to initiate the Canadian Government Transatlantic Air Service in July 1943. Its maiden flight, Montreal-London, carried 2,600 lbs of mail and three official passengers. Called a Lancastrian, it had received extra fuel tanks in the bomb bay, new radio equipment and instruments, and an extra cargo compartment replaced the forward turret. Later Lancastrians built at Victory Aircraft Ltd. near Malton also had ten seats. Its Rolls Royce engines proved inferior to the Liberator's Pratt and Whitney engines being susceptible to mid-air failure when forced to operate for hours at below full output.

Civilian landplanes entered regular service on the North Atlantic on April 18 1942. The first were Boeing-307s used by TWA to operate a military VIP service. These had four engines, a maximum takeoff weight of 42,000 lbs (compared to 73,000 for the DC-4), a normal range of 1,200 miles (now extended by a reduction in payload) which was about half the range of a DC-4, and a cruising speed of 200 mph which was about the same as that of a DC-4 (Davies 1964, Table 51). Unlike that aircraft it was pressurized, the first transport aircraft to be so. The Boeing-307's 2 1/2 lb./sq. ft. pressure differential gave a cabin altitude equivalent of 8,000 feet when it was operating at 14,700 feet. In 1943 the DC-4 entered military service as the C-54 and in 1944

the L.049 entered military service as the C-69. The civilian commercial operation of the DC-4 began on October 24 1945 when AEA began a service from New York, via Gander and Shannon, to Hurn. The Lockheed L.049 began North Atlantic service on February 5 1946 when TWA began operations from New York, via Gander and Shannon, to London.

4.2.2 Piston Aircraft

TABLE 4.2

Comparison of Piston Aircraft Operating Costs

$US per thousand passenger miles

Aircraft	Date Introduced	Stage Length 1,000-1,500	1,500-2,000	2,000-2,500	2,500 & over*
DC-4	1942	21.22			
L.049	1943	22.84	22.29		
DC-6	1947	21.73	21.11		
L.749	1947	21.68	21.07	20.46	
B-377	1949	25.94	25.38	24.68	24.96
DC-6B	1951	19.95	19.47		
L.1049	1951	22.03	21.45	20.83	21.08
DC-7	1953	23.41	22.26	20.83	21.63
DC-7B	1955	23.50	22.26	21.85	22.08
L.1049G	1955	23.47	22.85	21.85	22.08
DC-7C	1956	23.95	23.18	21.67	22.12
L.1649	1957	24.86	24.04	22.49	22.92

* 3,000 miles used as midpoint in calculating figures for this class.

Source: Caves (1962) p.68.

As can be seen in Table 4.2, the development of the long-range commercial airliner powered by piston driven propellers during the fifteen year period, 1942-1957, was accomplished without appreciably increasing the cost of operation per thousand passenger miles. During that time, the operational range was greatly extended from the 2,500 miles of the DC-4 to over 4,000 miles, the average number of passenger seats was more than doubled from the DC-4's 40, speed increased from the 200 mph of the DC-4 to typically about 300 mph, and pressurization became universal.

When the Second World War ended there were three firms with aircraft suitable for civilian North Atlantic operation in production or in an advanced state of design. The Douglas company had the unpressurized DC-4 and the pressurized DC-6. The Lockheed company had the L.049 and the L.649/749 Constellation. Boeing had the Stratocruiser which would not win an order till 1946.

The DC-4 was available in large numbers, provided engine and propeller de-icing, and had a cruising speed a little over 200 mph. It was not, however, able to carry a full payload over the Atlantic nor was it pressurized. AEA introduced it into service in 1945. It was subsequently adopted by a number of other carriers, several of which would operate on the Canadian North Atlantic. KLM acquired it in 1946, SAS and Sabena in 1947.

The pressurized version of the DC-4, the DC-6, made its first flight in 1946 and it entered commercial service in 1947. It had new windows and a stronger fuselage (Davies 1964, 457).

The Lockheed L.049, L.649, and L.749 were all superior to the DC-4 from the passenger point of view because they were pressurized and about 100 mph faster. The L.649/749 had more powerful engines and more fuel tankage than its parent, the L.049, at the expense of a slight reduction in maximum payload. Compared to the DC-6, the L.749 had slightly more horsepower, more fuel tankage, a higher maximum payload, but a slightly lower cruising speed (Brooks 1963, 228-229, 308-309). It was marginally cheaper to operate (Table 4.2). The L.049 entered North Atlantic service in 1946 with BOAC, TWA, PAA, and AOA (Davies 1964, 457; H. L. Smith 1986, 298; Stroud 1962, 213).

Canada produced its own derivative of the DC-4, the Canadair DC-4M1. This was developed into the DC-4M2 North Star and DC-4M4. Unlike the DC-4/DC-6 it used a Rolls Royce Merlin engine rather than a Pratt and Whitney Engine. The Merlin was more powerful than the R-2000-SD-13G used in the DC-4 but less powerful than the R-2800-CA-15 used in the DC-6.

The choice of Merlin engines proved unfortunate. The engines, as delivered, had huge radiators. The drag from

these radiators reduced the aircraft's speed below the designed 280 mph. These were needed to permit the engines to idle indefinitely on the ground without overheating. The engine design also resulted in a very noisy cabin. This problem was subsequently reduced by a redesign of the cross-over manifolds by a TCA employee. An excellent combat engine, it proved very expensive initially to maintain in peacetime operation. This did improve over time. TCA, however, was protected by a manufacturer's warranty that such costs would not exceed those established by air cooled engines of comparable output (McGregor 1980, 16-17).

Overall the North Star proved inferior to the DC-6. In a maximum range configuration with 40 seats it had a payload of 8,100 lb., a typical cruising speed of 230 mph., an equivalent still air range of 3,240 miles, and a typical operating cost of £260UK. The comparable figures for the DC-6 were 43 seats, a payload of 8,700 lb., a typical cruising speed of 280 mph., an equivalent still air range of 3,810, and a typical operating cost of £250UK. When allowance is made for a fuel reserve of an hour, a diversion of 230 miles, and for typical headwinds at the usual cruising altitude, the practical ranges of the two aircraft were 2,240 and 2,770 miles respectively. This should be reduced by a further 5 to 10 per cent to allow for the additional fuel usually consumed during take off and descent (Brooks 1963, 31, 125, 229).

The North Star, however, did provide a Canadian-built airliner suitable for North Atlantic operation and it helped retain Rolls Royce in the field of providing engines for long-range commercial aircraft. Other users of North Star variants were CPA on its Pacific routes and BOAC (on routes other than the North Atlantic).

The next important aircraft introduced on the North Atlantic was the Boeing-377 Stratocruiser. It was larger than either the L.749 or the DC-6 and slightly faster (Brooks 1963, 48-9, 228-9, 308-9). It could be configured to provide luxurious accommodation, usually having a lounge reached by a spiral stairway to the lower deck. It could even be equipped as a sleeper aircraft with 28 bunks and 5 seats. It was, however, expensive to operate (Table 4.2) and was somewhat temperamental to fly. PAA introduced it on the North Atlantic on April 4 1949 and was followed by AOA and BOAC.

The development of the DC-6B and L.1049 Super Constellation began in 1949. It seemed that these would be the last generation of long-range piston aircraft when the proto-type of the Comet-1 turbo-jet airliner flew on July 27 1949.

The DC-6B and L.1049 entered service in 1951. Both were stretched versions of their parents, carrying more passengers a similar distance but being slightly slower. The DC-6B, as shown in Table 2, was also slightly more economical than its parent. PAA was the first to put the DC-6B into

North Atlantic service in May 1952, using it to supplement its Stratocruiser service.

Even before the L.1049A entered operation commercially in 1951, its successor, the L.1049C, was in development. It had a redesigned stronger wing and a new Wright Turbo-Cyclone composite engine. The composite engine was a stepping stone towards the turbo-prop engine. Developed for the US navy, the civilian version of the L-1049C was ordered by TWA to compete on transcontinental routes, entering service in 1953. KLM introduced it on the North Atlantic on August 15 1953. Non-stop flights eastbound now became possible. The L.1049E development was introduced onto the North Atlantic by Iberia on September 2 1954 (Brooks 1963, 315-317; Davies 1964, 457, 462).

Douglas did not begin to develop its rival to the L.1049C until 1952. It was ordered by American Airlines to meet the expected competition from the L.1049C and it used the same engine as that aircraft. Douglas had delayed its development in the hope that it could move directly to the development of jet aircraft after its very successful DC-6. (Kelly 1963, 224).

The Comet 1 had entered service in May 1952 between London and Johannesburg. On October 20 1952 PAA was the first airline to order a jet airliner designed for the North Atlantic when it placed a pilot order for three Comet 3s. In 1954, however, the Comet program was suspended until a

new Comet 4 could be developed following two disasters over the Mediterranean. In July 1954 Boeing flew a prototype for its Boeing-707.

Although it seemed the jet age was dawning, Lockheed continued to develop the L.1049 series and Douglas the DC-7. The L.1049G was introduced on the North Atlantic in 1955 by Lufthansa. The engine had been increased to 3,400 s.h.p. and wingtip tanks were provided. The DC-7B was introduced in 1955 by PAA. It continued to use the original engine but had more fuel tankage. Overall it was slightly faster but had a lower payload and a slightly shorter range than the L.1049G. (Davies 1964, 462; Brooks 1963, 243-245, 323-325)

The last two major long range piston aircraft to be developed were the DC-7C and the L.1649. PAA introduced the former on June 1 1956 and TWA the latter on July 1 1957. They could fly non-stop between New York and the capitals of Western Europe (Davies 1964, 462-3) but were a little slower than their parents (Brooks 1963, 245, 253, 325, 333) and, as shown in Table 2, also a little more expensive. They were also too late as the turbo-prop arrived on the North Atlantic on December 19 1957 and the turbo-jet on October 4 1958.

4.2.3 Turbine Aircraft

The introduction of turbine aircraft was revolutionary. They provided passengers and carriers with not only increased speed but also with lower costs of operation

(Table 4.3). Their utilization potential was superior to that of piston-engined aircraft because they needed less frequent overhaul. For passengers their quietness was a great attraction. The engines brought about new fuselage and wing designs to realize the speed and range possibilities of these aircraft. The first aircraft were turbo-props. Pure jets soon followed and occupied most of the long-range markets.

The first step was the introduction of the turbo-prop Britannia 320 which provided an increase in speed of about 20 per cent over long-range piston aircraft, along with a cost saving of between 15 and 30 per cent. The second step was the introduction of turbine jet aircraft. Boeing-707s/DC-8s provided a further speed increase of about 50 per cent over the Britannia, with a cost saving of up to 8.5 per cent. Although jets were faster than piston aircraft and cheaper to operate, they were, however, more expensive to purchase. In 1958 a L.1049G cost $2.2 million US, a DC-7C cost $2.6 million US, a L.1649 cost $2.356 million US, a DC-8 cost $5.3 million US, and a Boeing-707-320 cost $6.0 million US. Their great speed, however, allowed them to make more trips over the same distance during the same time period. Thus one DC-8 could carry as many passengers as four Super Constellations. (Ashley 1963, 49) and one Boeing-707 during a year could carry as many passengers as a crack Atlantic liner like the Queen Mary (Sampson 1984, 110).

TABLE 4.3

Operating Cost Criterion of Selected Aircraft

UK pence per mile assuming maximum payload operations over typical practical stage lengths at average cruising speeds in 1961

Airplane	Seats	Payload per seat (lb.)	Cruise Speed (mph)	Stage Lengths (st. mls)	Operating Cost Criterion
L.1049G	83	220	305	3,070	2.99
L.1649A	81	241	290	3,740	3.62
Britannia Mark 320	109	200	357	3,360	2.45
Comet 4	79	200	480	3,240	2.34
Boeing-707-420	140	278	535	3,530	2.24
DC-8-30	132	275	540	3,560	2.44

Source: Brooks (1963) pp. 65, 117, 191, 269, 325, 333.

The appearance of wide-body aircraft provided yet a further decrease in the per seat of cost of operation (Table 4.4). These aircraft, although providing a cost saving of perhaps 20 per cent, did not provide any increase in speed. Their large size also meant that, to obtain a reasonable load factor, they could only be employed on city pairs with a fairly dense level of traffic.

On December 19 1957 the Bristol Britannia 310 became the first British civilian airliner to be used on the North Atlantic as well as being the first turbo-prop so used. The Britannia could operate non-stop between New York or Montre-

TABLE 4.4

Aircraft Direct Operating Block Hour Costs

US 1979 Trunk Airlines System Operations $US

Aircraft	Average Costs Per Seat Labour	Fuel	Other	Total	Total Cost	No. of Seats
Boeing-707-300	3.13	6.22	4.21	13.56	2,372.36	175
Boeing-747	1.50	5.57	3.73	10.80	4,213.79	390
DC-10	1.98	4.68	4.14	10.80	2,916.85	270
L.1011	1.70	4.79	4.29	10.78	3,068.07	285

Source: Merrill Lynch, Pierce, Fenner and Smith, Inc. Aviation Log vol. 3, no. 15 (22 Oct. 1980):2 quoted in Taneja (1981) p. 198.

al and London (Davies 1964, 463-664) and was faster and considerably less expensive to operate than piston aircraft. It was also introduced too late to play a major role in shaping the evolution of North Atlantic competition and was only ever used on the North Atlantic by three airlines, BOAC, El Al, and CPAL. PAA had begun the jet buying spree of airlines on October 13 1955 and the beginning of the construction of the Britannia in February 1956 had actually followed the beginning of construction on the Boeing-707-120 in late 1955 (Brooks 1963, 56, 116).

On October 4 1957 BOAC's Comet 4 began North Atlantic turbo-jet operations. PAA started its turbo-jet operations

with a Boeing 707-120 on October 20, 1957. Neither aircraft had quite enough range for North Atlantic operations and they were soon replaced by Boeing-707-320s, Boeing-707-420s, and DC-8s. Nevertheless, they had introduced long range civilian air transport on the North Atlantic at the 500 mph speed level.

In 1960/1961 another technological advance became available. This was the turbo-fan engine in the shape of the Pratt and Whitney JTD-3. The addition of a front fan to a turbo jet engine improved both thrust and specific fuel consumption (Green and Swanborough 1982, 152). This new engine produced 18,000 lb. thrust while consuming only 80 per cent of the fuel of the Conway 509 (Brooks 1963, 260-261, 268-269). It flew in December 1960 and was certified for use in September 1961. Turbo-fans became available both for Boeing-707s and DC-8s. DC-8 aircraft with turbo-fans were known as "series 50" DC-8s.

In the early 1960s, it was expected that the evolution of long-range aircraft would continue along the same path it had been following, with the next advance being another increase in speed. France and the UK were determined to be first in the field of supersonic civilian aviation. By 1962 Sud Aviation in France and Bristol in the UK had developed similar projects, the Super Caravelle and the Bristol 233 respectively, the latter with four engines and 110 seats. In November 1962 the two governments signed a protocol of an

agreement making it a joint project, the Concorde. Sixteen aircraft were to be produced and shared between the two national airlines. In 1963 PAA was the first airline to order the Concorde, placing an order for three aircraft. Shortly after this, the American government announced that it would subsidize the building of an American supersonic airliner. Boeing was awarded the contract following a design competition. The projected aircraft was to be much larger with 250 seats and to fly at 1,800 mph (Mach 2.7) instead of 1,450 mph (Mach 2.2) (P. Smith 1986, 268). The USSR also developed a supersonic transport, the Tu-144, which was a Mach 2.35 aircraft. It was the first to fly. Its prototype took off on December 31 1968, 61 days before the Concorde prototype (Green and Swanborough 1982, 182).

By the start of the 1970s, weight escalation beyond airport tolerances and political resistance led the U.S. government to cancel the SST program. The Concorde finally entered service in 1976 with Air France and BOAC, the only airlines to use them on the North Atlantic. The Tu-144 has never been operated for passengers outside the USSR.

A further revolution in long-range passenger aircraft was the appearance of the wide-bodied "Jumbo Jets" beginning with the Boeing-747. The Boeing-747 was conceived in 1965 as a transitional aircraft to be used until the large scale introduction of supersonic jet transports (Sampson 1984, 124). As the first of the wide bodied jet transports it

offered further savings in costs per seat (Table 4.4). At least as important was the attractiveness of these aircraft to passengers on long-range flights and their usefulness to carriers in serving scheduled and charter high-density traffic markets. They were, of course, less flexible than smaller aircraft for use in lighter traffic situations.

The Boeing-747 was only the first of the wide-bodied aircraft. Douglas, acquired by McDonnell, and Lockheed each produced a slightly smaller wide-bodied aircraft than the Boeing-747. The McDonnell Douglas DC-10-10 was a tri-jet, designed with mixed class seating for about 270 or single class seating for about 380, intended for transcontinental operations. It entered service in 1972. Work on it had begun in 1967. Lockheed's L-1011 Tri-Star also was a tri-jet designed for transcontinental operations. It was able to carry about 345 with single class seating. It also entered service in 1972 with work on it having begun in 1966. In Europe the shorter range Airbus entered service in 1974. Over-water versions of the DC-10 and L.1011 were produced with the DC-10-30 entering service in 1972 and the L-1011-500 in 1979 (Green and Swanborough 1982, 24-26, 146-149, 158-162).

The most important impact on the evolution of technology during the 1970s came from the increase in the price of fuel as a a result of the oil crises. At the beginning of the 1970s the average price of jet kerosene in the United States

was 12¢US a gallon. By 1975 it had more than doubled to about about 28¢US and by 1978 it had reached about .38¢US (Krenz and Hilbig 1982, 801). The picture in Canada was similar with the price rising from 19.5¢Cdn to 58.5¢Cdn (P. Smith 1986, 328). The second oil crisis of 1979 saw the price of kerosene more than double from the level reached in 1978. It then began a slow decline but remained more than double the 1978 price level until 1983 (Wheatcroft and Lysman 1987, 152). The other costs of operation, maintenance, crew, depreciation, insurance, etc. tended to move together and in line with the general rate of inflation (Taneja 1981, 196). The result was a constraint on the drive to increase power to permit faster speeds and/or to create larger aircraft in engineering research and development. Concorde's failure to attract more than a miniscule part of the long-distance market under the new cost structure discouraged the former. World-wide excess capacity during the period of stagflation discouraged interest in the latter. The drive was for fuel efficiency.

The size of the effect of this rise in prices on the relative costs of carriers is thrown into sharp relief when it is noted that when Boeing-747s had been purchased at the beginning of the 1970s it was expected that they would consume their capital cost in fuel once in their lifetime. By the early 1980s it seemed that they would consume three times their capital cost in fuel during their lifetime (MacDonald 1982, 1312).

Another contributing factor to technological change in the commercial aviation industry came from government policy changes in the United States and Canada on noise emissions. Government legislation in both Canada and the United States had been passed which required lower noise emissions. Older aircraft did not meet these standards and this put legal pressure on the airlines to modernize their fleets.

In 1983 the price of kerosene dropped slightly but then hit somewhat of a plateau and remained just a little less than double the 1978 price level until 1986. In that year it fell to about one and a half times the 1978 price level (Wheatcroft and Lysman 1987, 152). Jet fuel has once again become relatively inexpensive, at least in the short run, and many of the expected gains from more fuel efficient aircraft developed in the previous decade have been lost.

In the mid-1980s Boeing, McDonnell Douglas, and Airbus were building long-range and intermediate-range aircraft suitable for use on the North Atlantic and all three had aircraft under active consideration for purchase by Canadian carriers. Boeing had up-dated versions of the Boeing-747 and the Boeing-767-300ER, McDonnell Douglas had the MD-11, and Airbus had several aircraft in the Airbus family including the Airbus 340. These aircraft provide a wide-range of embodied technology characteristic of contemporary advanced long-range civilian aircraft.

The Boeing-747s now have updated engines and avionics. They still are the largest passenger carrier available and continue to have great passenger appeal. They remain excellent for use on city pairs with a high density of traffic but in other circumstance can be often "white elephants".

The twin-engine Boeing-767-300ER carries 216 in a typical two class configuration and uses a two-man crew. It is basically similar to the 200ER but offers an additional 3,600 gallons of fuel. It is available with the same two engines as in the 200ER, the JT9D-754D or the CF6-80A. Both produce just under 48,000 lb. thrust. The former gives the aircraft a range of 5,492 miles and the latter, 5,671 miles. It is planned to also offer the aircraft with the JT9D-7RAE or the CF6-80CE engines which provide 50,000 lb thrust. Also available will be the Pratt and Whitney PW-4000 series and the CF6-80CE-132/B6 engines which will produce 50-61,000 lb. thrust.

The MD-11 is an advanced version of the DC-10-30 which was considerably redesigned. It is a larger aircraft than the former and seats 321 in a two class seating configuration for a maximum range of 7,830 miles. The CF6-50C turbofans used in the DC-10-30 which produced 51,000 lb. thrust are intended to be replaced by PW-4000 series or CF6-80CE engines. Aerodynamic improvements incorporated in the redesign are winglets, an advanced horizontal tail design with cambered airfoil, wing redesign with reduced sweepback, and

an integral trim tank. Other changes include a two-man digital flight deck and a restyled interior. McDonnell Douglas's stated goals are to provide a range extension of 10%, increased capacity, and a reduction in seat-mile costs of 13 to 18 per cent over the previous model.

The Airbus A.340 offers seating for 310 in a two-class configuration with a range of 9,038 miles and is right at the edge of current technology. It has four engines in the 28,000-30,000 lb. thrust range. A choice between the International Aero V 2500 or the CFM International CFM-56-5 are offered. These are "Superfan" engines in which the core engine is provided with a variable pitch geared fan. The aircraft uses composite materials, including carbon fibre plastics, in a wide range of areas including the fixed leading and trailing edge panels, the flap fairings, the spoilers, the ailerons, and both the vertical and horizontal surfaces of the tail unit. It has a "fly by wire" system. This means that the aircraft computer will not permit the aircraft's designed limits for speed, loading, and wind speed to be exceeded. The aircraft uses a two-man flight deck and the pilot's instruments are simplified to only twelve. It has a tailplane trim tank and an advanced technology wing with variable camber, the first available. Variable camber is achieved through small movements of the trailing edge flaps. It is normally used only during take-off and landing to reshape the aerodynamic profile of the

wing during cruise. By tailoring the wing for the weight and altitude of the aircraft, drag is reduced. The wing of this aircraft also has a higher aspect ratio than others of its class. The work of maintenance mechanics is made easier by a centralized fault display system in the cockpit which monitors the avionic and aircraft systems (Jane's 1986/87). This aircraft may prove to be the most advanced aircraft of this generation to be produced.

The possibilities of the next generation of aircraft are currently being examined by two international consortia. One is based on the Boeing-7J7 with Japanese firms having a 25 per cent share. The other is based on the McDonnell Douglas MD-90 series and it includes European firms and Shanghai Aviation of China. Both aircraft are in the 150 seat class which makes them less expensive to build and purchase than larger aircraft. Both aircraft were being designed in 1987 around "prop-fans". Prop-fans have what look like propellers in tandem mounted on the back of the engine. The Boeing company hopes that the use of prop-fans will give a 45 per cent increase in fuel efficiency and a 10 per cent reduction in operating costs. McDonnell Douglas hopes for a 50 per cent fuel saving on current turbo-fans and a 25-35 per cent saving on advanced turbo-fans. Both types of aircraft are expected to have "fly by wire" and "fly by light". The latter uses fiber optics instead of regular wiring. When fully developed in the mid 1990s the

MD-90 series may also include laminar and turbulent boundary drag control, very high aspect ratios, super-critical wings, and flight critical stability control (Jane's 1986-87). The development of this new aviation technology has become so expensive that it can be tackled only by international consortia of companies even on aircraft much smaller than the "Jumbos". The Boeing-747 family may prove to be the first and last civilian commercial airliners of that size.

During the last half century, the aircraft in operation on the North Atlantic have had five phases. Initially it was felt necessary to use propeller driven flying boats. Their economics and seasonal operating problems led to their withdrawal from use. Long-range propeller driven aircraft emerged at the start of the 1940s with much better economics and operating characteristics including de-icing and cabin pressurization for passenger comfort. These aircraft were then displaced, almost over-night, by jets. These were not only much faster but also less expensive to operate over North Atlantic distances. Some ten years later wide bodied aircraft, which were much more attractive to travellers and which had a further operating cost advantage, were introduced. Then the emphasis shifted to fuel efficiency and the application of a wide range of advanced technology.

4.3 AIRCRAFT CHOICE ON THE CANADIAN NORTH ATLANTIC

Four major phases in commercial airliner development are apparent in the previous historical review. First there is the phase of piston-engine aircraft, first with non-pressurized and then with pressurized cabins. Second, there is the turbine engine phase with turbo-prop, and then pure jet, aircraft. Third, there is the wide-bodied aircraft phase and, fourth, a phase of advanced technology application for better operating and fuel economy characteristics. The fleet development characteristics of Canadian carriers operating on the North Atlantic will be presented in this part of the chapter.

During the period dominated by piston-driven propeller aircraft on the Canadian North Atlantic, i.e. 1947-1958, Canada's carriers endeavoured to meet the technological challenge presented by their rivals. From 1947 until 1955 TCA was the only Canadian carrier directly active on the North Atlantic. However, the acquisition decisions of CPAL were of great importance since CPA, on entering the market in 1955, used aircraft that were in its existing fleet. The technological leader during this period was BOAC which introduced on the Canadian North Atlantic the same aircraft that it used between the US and the UK in competition with the American carriers AOA, PAA, and TWA.

The first generation of aircraft on the Canadian North Atlantic included the North Star, the DC-4, the DC-6, and the Lockheed Constellation.

In 1943 TCA chose the DC-4 as its post-war aircraft. C. D. Howe decided that TCA's postwar fleet should at least be built, if not completely designed, in Canada. This led to the development of Canadair's North Star, the DC-4M2. The North Star, as conceived by TCA's engineers, J. Bain and J. Dyment, was to combine the best features of American and British aviation technology as it existed in 1943. Unfortunately, design and production delays resulted in the first North Stars being delivered as an unpressurized aircraft in 1947 rather than, as hoped, a pressurized aircraft in 1946. The pressurized version was not delivered until 1948 (P. Smith 1986, 96).

When TCA began operations on the North Atlantic on April 15 1947 it was forced to use unpressurized DC-4M1s, Canadair's predecessor to the North Star. Its rival, BOAC, was able to begin operations with the pressurized and slightly faster L.049 Constellations. By 1948, however, TCA was able to introduce pressurized North Stars. Of the two carriers which entered service to Montreal in 1949/1950, KLM had DC-4s while Air France operated the superior L.049. SAS and Sabena, which began service in 1949 to Gander, used DC-4s. As the 1950s opened, TCA was doing relatively well operating an aircraft which was superior to those of three of its com-

petitors and slightly inferior to that operated by two of its competitors.

At the end of the 1940s and the beginning of the 1950s the airlines on the Canadian North Atlantic began to modernize their fleets to improve their competitive positions. The aircraft entering service in this wave were the Boeing-737 Stratocruiser, the Super Constellation, and the DC-6B. It was also at this time that CPA moved to be one of the earliest airlines to acquire long-range passenger jet aircraft.

BOAC, which had placed the Boeing-377 Stratocruiser in service between London and New York on December 6 1949, also introduced it between London and Montreal on April 23 1950. Three grades of service were offered: Monarch (super luxury), Majestic (first class with 50 seats), and, from 1952, Coronet (tourist with 81 seats) (Hudson 1972, 165).

Opinions on the value of this aircraft differ. R. E. G. Davies feels the use of the Stratocruiser by BOAC was significant in its climb to third place in volume on the North Atlantic (Davies 1964, 462). G. R. McGregor, President of TCA at that time, believed that it was a matter of congratulation that TCA did not acquire any (McGregor, 1980).

It is interesting to note that, on December 15 1949, CPAL became one of the first airlines after BOAC to order Comet jet aircraft. It ordered two Comet 1As after BCPA, its rival to Australia, replaced its DC-4s with DC-6s.

CPAL, however, would use the DC-6B on the North Atlantic. It originally ordered the DC-6B as insurance against the possibility that the Comet 1A would not fulfil expectations. CPAL's first Comet, which was being ferried to Sydney, crashed on takeoff at Karachi on March 3 1953. The remaining Comet on order was sold to BOAC. The DC-6Bs on order went into service in April 1954 on the Australia service. CPAL ordered Comet 2s, after the loss and disposal of its Comet 1s, to match an order by BCPA for Comet 2s. Neither carrier ever took delivery since the Comet program was suspended in 1954. When CPAL received permission to operate a polar service from Vancouver to Amsterdam in 1955 its DC-6Bs were suitable aircraft for this route. Seven months earlier SAS also had used DC-6Bs to open the first polar route from Copenhagen to Los Angeles via Sondre Stromfjord and Winnipeg.

As noted, KLM introduced the improved Super Constellation, the L.1049C, on the North Atlantic in 1953, moving up from DC-4s. Two other operators on the Canadian North Atlantic would use this aircraft. Air France introduced it onto its North Atlantic routes in November 1953 and TCA introduced it on May 14 1954 (Davies 1964, 462).

TCA ordered the L.1049C in 1951 when it became clear that the capacity of its North Star fleet on the North Atlantic would no longer be adequate several years before turbine aircraft became available. TCA choose the L.1049C over the

DC-6B because the 2,500 s.h.p. R 2800 Pratt and Whitney engines of the latter were considered at the end of their development while the 3,250 s.h.p. Wright Turbo-Cyclone gave the L.1049C greater range and speed. By adding a turbine driven by the exhaust of the engines' cylinders an additional 450 horsepower was added to the R 3350 engine (McGregor 1980, 43; Brooks 1963, 236, 315).

TCA decided to order two L.1049Gs because of continued growth in North Atlantic traffic. These were delivered in 1956. While awaiting the arrival of jet aircraft, it would later order more G and H series L.1049s as North Atlantic traffic continued growing (Ashley 1963, 48-49; Stroud 1962, 620).

The shift from piston-driven to turbine aircraft on the Canadian North Atlantic again saw BOAC act as the technological leader. CPAL and TCA adopted different tactics in meeting the challenge of the turbine aircraft. TCA preferred to await the arrival of the full jet while CPAL decided to move immediately to follow BOAC and introduce turbo-props when they became available. CPAL's limited resources, however, forced CPAL to delay its acquisition of jet aircraft. Between 1961 and 1970 TCA and CPAL were actively competitive through their introduction of the new developments in long-range jet aircraft.

On April 17 1958 BOAC, which had been the first carrier to introduce the turbo-prop Britannia on the North Atlantic, became the first of operate it on the Canadian North Atlantic, using it to open a London-Prestwick-Montreal- Detroit-Chicago service.

CPAL's purchase of the Britannia meant that it could offer turbine service on the North Atlantic two years before TCA. CPAL began Britannia operation on June 1 1958 between Amsterdam and Vancouver and TCA began DC-8 operations between Montreal and London June 1 1960. On the other hand, CPAL, therefore, had to delay the purchase of jets so that it was unable to introduce the faster pure-jet service until mid 1961.

In 1958 BOAC, which had been the first to introduce turbo-jet service on the North Atlantic, became the first to introduce jet service on the Canadian North Atlantic. It began using Comet 4s between London and Montreal on December 19 (Stroud 1962, 307).

Following PAA's 1955 order for 20 Boeing-707s and 20 DC-8s, TCA's management had realized that it could not afford to be left behind in the adoption of jet aircraft. By early 1956 TCA had reserved delivery positions for both DC-8s and Boeing-707s. Problems arose in the final selection process because the specifications of the two engines were being kept secret because they were both in military

use in the USA. Through "snooping" at Douglas a TCA employee obtained the information necessary to estimate the performance characteristics of the engines and Rolls Royce developed an equivalent in the Conway which could be used in either the Boeing-707 or the DC-8. TCA's final choice was the DC-8, in part for its reputation for product support engineering. It chose the Conway engine because of its lighter weight and in the expectation that it would prove less noisy (P. Smith, 1986, 176).

When TCA put DC-8-40s into operation between Montreal and London on June 1 1960 its aircraft had the most powerful jet engine then available, the Rolls Royce Conway 509 which produced 17,500 lb. thrust. The Conway 508 installed in the Boeing-707-420 produced the same thrust and had been introduced into service on May 27 by BOAC. In comparison, the Rolls Royce Avon engines powering BOAC's 1958 Comet 4 had 10,500 lb. thrust, the Pratt and Whitney JT3C-6 in PAA's 1958 Boeing-707-120 had 13,000, the JC4A-9 in PAA's 1959 Boeing-707-320 had 16,800, and the JT4A-3 engines in the first DC-8-30 introduced in April 1960 by PAA and KLM had only 15,800 lb. thrust.

CPAL also chose the the DC-8-40 with Conway 509 engines and employed this aircraft on all its long distance routes. Maintenance for this aircraft was farmed out to Air Canada.

As shown in Table 4.5, Air Canada entered the jet age at about the same time as all the other major carriers did, except for the two pioneers, PAA and BOAC. CPA, which had purchased the Britannia was, however, almost the last sched-

TABLE 4.5

Commencement of Jet Operations on the North Atlantic

Date		Aircraft		Carrier
1958	October	Comet 4		BOAC
		Boeing-707	(-120)	PAA
1959	September	Boeing-707	(-138)	Qantas
	October	Boeing-707		PAA
	November	Boeing-707		TWA
1960	January	Boeing-707		Sabena
	February	Boeing-707		Air France
	March	Boeing-707		Lufthansa*
	April	Boeing-707		Air India
		DC-8		PAA, KLM
	May	Boeing-707		BOAC*
		DC-8		SAS, Swissair,
	June	DC-8		TCA* , LAI
	December	Boeing-720		Aerlinte
1961	January	Boeing-707		El Al
	May	Boeing-707		PAI
		DC-8		CPAL
	July	DC-8	(-52)	Iberia

Source: Davies (1964) p. 461.
Note: Starred carriers used Conway engines.
Note: The DC-8-50 class used turbo-fan engines which entered service in December 1960 but which were not certified in the U.S.A. until October 1961.
Note: By late 1961 only the low fare carrier Loftleidir of the scheduled North Atlantic operators had not introduced jet aircraft.

uled operator on the North Atlantic to begin jet service.

Shortly after TCA began operating its DC-8-40s, the turbo-fan engine, in the shape of the Pratt and Whitney JTD-3, became available. In 1961 TCA decided to move to turbo-fan engines for its new DC-8s. In April 1961 a new variant of the DC-8 became available from McDonnell Douglas, the DC-8-50F Jet Trader. This was a convertible aircraft with a side-loading freight door in the forward fuselage and a reinforced floor with built-in cargo handling provisions (Swanborough and Green 1982, 152). TCA was involved in developing its cargo operations domestically and internationally but at that time felt that sufficient business to justify the purchase of an all freight aircraft would not be available for some time. A convertible aircraft thus provided the desired flexibility. TCA therefore bought four Jet Traders as its first purchase of aircraft with turbo-engines. This was done despite pressure from Canadair for TCA to buy its turbo-prop CL-44 to provide the Canadian manufacturing industy with employment.

TCA/Air Canada's fleet of DC-8s grew eventually to 38 aircraft and included most of the variations of the aircraft produced by McDonnell Douglas. When the stretch version of the DC-8 became available it converted its order timed for 1967 from series 50 to the new series 60 aircraft. It was not pleased when most of these aircraft did not arrive until after EXPO 67 was over because of US military priorities and production delays (P. Smith 1986, 261).

CPAL's fleet of DC-8s grew to 12 aircraft. Like TCA it moved to turbo-fans when they became available. It had seven series 40 or series 50 DC-8s, one DC-8-50F, and five series 60 DC-8s of which the first four arrived in late 1967 and early 1968.

On the Canadian North Atlantic the arrival of jet aircraft in the scheduled market initially greatly stimulated the development of the charter market, as it did on the North Atlantic as a whole. The adoption of the jet by charter carriers themselves had important implications for their ability to compete and, because these jet aircraft were increasingly expensive to acquire, for their corporate form.

The arrival of jet aircraft on the North Atlantic and other long distance routes displaced the long-distance piston aircraft then in use. These either were sold at greatly reduced prices to smaller carriers, often secondary charter carriers, were reduced to lesser services, or were placed in charter operations by their current owner until such time as they could be sold. Thus on the North Atlantic "charter operations increased dramatically in 1961, when the increase of jet capacity left piston aircraft available for charter operations" (Straszheim 1969, 51-53). The bulk of charter traffic on the North Atlantic was initially carried by IATA carriers but this share soon declined as purely charter carriers assumed a larger and larger role (Table 1, Appendix).

In 1966, there were six Canadian carriers active in the Canadian North Atlantic charter market: Air Canada, CPAL, Wardair, Transair, Pacific Western, and Nordair. The two scheduled carriers used DC-8s, Wardair, which had previously used DC-6Bs, used a Boeing-727, Transair and PWA each operated a DC-7C, and Nordair flew a Super Constellation (Canadian Aviation June 1966, 18-19).

Although remaining purely a charter carrier until the 1980s, Wardair always endeavoured to move to the operation of the most modern equipment possible. In 1966 it entered the jet age with a Boeing-727 whose virtues were that it was small but could cross the North Atlantic if it used a refueling point such as Iceland. Wardair leased the 110 seat aircraft for ten years but disposed of it in 1973 to a South American carrier. In December 1966 it purchased a Boeing-707-320C, which could be converted to a freighter and had 183 seats, with delivery in the spring of 1968. The need to finance jets lead Wardair "to go public". Arrival of the Boeing-707 then permitted Wardair to expand into Eastern Canada (Annual Report 1967). In 1969 Wardair received a second Boeing-707.

In the mid 1960s it appeared that supersonic transport on long distance routes was on the horizon. In 1966, it was expected that the Concorde would enter service in 1971 and the Boeing SST in 1974. It was necessary that both of Canada's carriers respond to the challenge presented by the

appearance of these new aircraft. The price of the Boeing SST was four times that of a DC-8 but it was expected to have about twice the passenger capacity of a standard DC-8 and be able to make two daily North Atlantic crossings instead of one (P. Smith 1986, 268).

CPAL was the first of the Canadian carriers to place an order, reserving three of the Boeing SSTs in 1966. As a smaller carrier than many of its competitors it could only afford to add one variety of SST to its fleet and it preferred to wait for the larger, faster aircraft.

Air Canada decided to reserve four Concordes and six Boeing SSTs later in 1966 . The necessary money was provided in the 1967 capital budget. Its Concorde delivery positions were 73, 79, 81, and 85. Delivery was expected to begin in 1974. Its Boeing positions were 110, 117, 124, 131, 138, and 145. Delivery was expected to begin in 1977/78. The Concordes were intended to protect Air Canada's markets with the Boeing SSTs providing for growth. Air Canada's management had delayed its order in the belief that, as in the case of the DC-8, "while the interval between ordering and delivery during the development stage would be quite long, as soon as the initial group of deliveries was completed the lead time between ordering and delivery would be much shorter" (McGregor 1980, 162).

When the US cancelled the SST program at the start of the 1970s, Air Canada's deposit was returned without interest. When Air Canada finally cancelled its Concorde order in 1972 it received back its deposit plus interest. It had obtained this and other concessions from BAC/Sud Aviation which had approached Air Canada several times between 1970 and 1972. Air Canada's final cancellation decision was made on the basis of Concorde's operating costs, the fact that the passenger forecasts made in the late 1960s were proving over-optimistic, and concern over whether the Canadian government would permit transcontinental supersonic operations (P. Smith 1986, 300).

The aircraft that would transform the North Atlantic were not the supersonic transport but were the wide-body aircraft, the first of which was the Boeing-747. The spaciousness of these aircraft had tremendous passenger appeal, in the conditions of the time they had a slight advantage in operating costs, and they had large holds for freight. All three of Canada's main carriers in the North Atlantic market, Air Canada, CPA, and Wardair responded to this change in available technology.

In 1968, when Air Canada considered their acquisition, Boeing-747s seemed to make economic sense. A Boeing-747 could carry about 350 seats in a mixed configuration and about 500 in a single economy class configuration (Green and Swanborough 1982, 54). IATA and other cost estimates at the

time found that Boeing-747 aircraft cost 15 to 25 per cent less than Boeing-707/DC-8 aircraft on international services depending on route-mix and seating configurations. Air Canada originally chose a 366 seat mixed configuration. The evaluation team estimated that the per seat-mile operating cost would be six per cent lower than the long version DC-8 but that the benefit would be lost through the costs of introducing another aircraft type into the fleet. The sales department felt that the airline would be left behind if it did not acquire the aircraft and all its competitors did (P. Smith 1986, 299).

As in the case of jet aircraft, CPA was slow in adopting wide body-aircraft, particularly on the North Atlantic. As can be seen in Table 4.6, Air Canada placed them in service on the North Atlantic in mid 1971 at about the same time as most of the major North Atlantic airlines. Wardair was the second Canadian carrier to do so. CPA received delivery in 1973 but initially used them on its other services and did not place any in service on the North Atlantic till 1975.

In the early 1970s, Air Canada used its Boeing 747s to meet the competition that it faced in its major markets, the services to London and Paris. Sabena and Swissair used a mix of narrow and wide-bodied aircraft in the services to Canada but Air Canada preferred to offer more frequent service to Brussels and Zurich using narrow bodied aircraft rather than offer less frequent service there with wide bod-

TABLE 4.6

Introduction of Wide-bodied Equipment

by Airlines on the North Atlantic

Airline	Time Period		Type
PAA	Early	1970	Boeing-747
TWA	"	"	"
Air France	Mid	"	"
Lufthansa	"	"	"
Alitalia	"	"	"
Iberia	Late	"	"
KLM	Early	1971	"
Aerlingus	Mid	"	"
SAS	"	"	"
Air Canada	"	"	"
BA	"	"	"
Swissair	"	"	"
Air India	"	"	"
El Al	"	"	"
TAP	Mid	1972	"
Olympic	Mid	1973	"
(Wardair)	"	"	"
PIA	Mid	1974	DC-10-30
Royal Air Maroc	Late	1974	Boeing-747
CPA	Mid	1975*	"
Finnair		1975	DC-10-30
JAT		1978	"

Sources: Green and Swanborough (1982), Wardair (1973), and various ICAO Traffic Flow.
Note: CPA had taken delivery of Boeing-747s in 1973 but did not allocate any to its Atlantic routes for some time.

ied aircraft which would also have forced them to use narrow bodied aircraft more frequently in their major markets. Air Canada added Boeing-747 "Combi" aircraft to its fleet when they became available.

Wardair congratulated itself in its 1973 annual report that its acquisition of the wide-body aircraft had been the right aircraft for the carrier since ABCs had replaced affinity charters as the predominant form of charter service on the North Atlantic (Annual Report 1973).

CPA's delay in using its Boeing 747s on the North Atlantic meant that for several years it faced direct competition on the North Atlantic from airlines which were using wide-body aircraft during which time it did not have a comparable aircraft in operation. KLM began Boeing-747 service to Canada in 1971. Iberia and Alitalia both began Boeing-747 service to Canada in 1972. By the summer of 1973, KLM's service consisted predominantly of Boeing-747s and DC-10s, Iberia's almost entirely of Boeing-747s and DC-10s (most of them continuing on to Mexico City), and Alitalia's almost entirely of Boeing-747s (ICAO September 1973d, Traffic by Flight Stage Tables 335-338). After the delivery of its initial order of Boeing-747s, CPA did not add any wide-body aircraft until it began to receive DC-10-30s in late 1979.

At the end of the 1970s, the recently developed wide-body aircraft showed about a 20 per cent advantage in their costs of operation over the first generation Boeing-707s and DC-10s. The average block hour cost per seat for a Boeing-707 series 300 airplane was $13.56US in 1979. In comparison, the average block hour cost per seat of a Boeing-747 or a DC-10 was only $10.80US while an L.1011 performed slightly better at $10.77US, as can be seen in

Table 4.4. The need to meet new noise abatement standards also loomed on the horizon. These factors resulted in a general updating of commercial aircraft fleets in the early 1980s. Since that time, continuing technological advances forced airlines which wished to remain competitive to continue to adapt their fleets. All three of Canada's major North Atlantic carriers responded to this evolution in technology.

By 1978 Air Canada decided on a fleet modernization program. Its DC-8 fleet was not fuel efficient by the standards of the day and it did not meet the new American and Canadian noise standards that were to come into force in the mid 1980s. The Boeing-747s, although fuel efficient and able to meet the new noise emission standards, were only suitable for operation on a very few city pairs which produced a large enough volume of traffic to allow them some hope of achieving both a load factor acceptable to the airline and a frequency of service acceptable to travellers. It was decided to retain the Boeing-747s for the routes upon which they were practical but to replace the DC-8s. This would be done by two different aircraft. A medium range aircraft for transcontinental and Caribbean operations and a long range aircraft for transatlantic operations.

For transatlantic operations the L.1011-500 was chosen. It had adequate range and seating and was fuel efficient. In addition, the shorter range L.1011 was already in Air

Canada's fleet. In 1968 Air Canada had chosen the L.1011 as its intermediate range wide-bodied jet for delivery starting in 1972. Beginning in 1976 Air Canada also had begun modifying four of its existing L.1011s to make them capable of transatlantic operation by installing additional fuel tankage. One was modified in 1976, two more in 1977, and one more in 1978 (Annual Report, various).

Fuel economy was of continuing concern. The L-1011-500 was one of the first aircraft with "active controls" to improve fuel efficiency. The use of "active controls" improved fuel economy through the use of computers to automatically deflect the outboard ailerons symmetrically in response to a manoeuvre load. This led to a reduction in the wing bending that occurred and thus the original wing span could be lengthed to restore the original wing bending moments. The longer wings reduced drag and therefore saved fuel (MacDonald 1982, 1314). In the case of the L.1011-500 the fuel saving due to "active controls" was about three per cent.

For transcontinental operations, Air Canada chose the Boeing-767 over the Airbus 310, a choice which had subsequent North Atlantic implications. Both aircraft were entering production in 1978 and were expected to enter service in 1981 and 1982 respectively. Both were twin engined with the Airbus being slightly slower but with a longer range and a slightly higher payload (Green and Swanborough

1982, 28, 60). The Boeing-767 was chosen because Boeing had a pre-eminent reputation for jet production and product support and the aircraft's range was sufficient to permit Montreal-Vancouver operation (P. Smith 1986, 329).

In 1982, because of falling passenger demand and the high cost of fuel, Air Canada, through a "wholesale juggling" of its service schedules, grounded its entire DC-8 passenger fleet. The six DC-8 freighters which had had their engines modified to provide a 17 per cent increase in fuel efficiency remained in service. Air Canada also moved to reduce its Boeing-747 fleet from seven to five by initially grounding and later selling two (P. Smith 1986, 345).

Boeing developed an extended range version of the Boeing-767 with "over-water" capability. Air Canada was able to have the last two of the initial 12 Boeing-767s purchased delivered with this capability. Four others were capable of conversion. Air Canada was thus able to begin using this aircraft on the North Atlantic once procedures for the use of commercial jet twin-engine aircraft on long distance overwater routes had been worked out in conjunction with the ICAO, concerned governments, and other carriers. In 1985 it used "overwater" Boeing-767s on services between Atlantic Canada and the UK during the summer high season. This was done again in the summer of 1986. They were put in service on Montreal-Paris and Toronto-London in October, 1986 (Annual Report, various).

In 1987, Air Canada was involved in planning the acquisition of its next generation of aircraft. Three replacements for the L.1011 were considered: the Boeing-767-300ER, the McDonnell Douglas MD-11 (the Advanced DC-10), and the Airbus A.340. As an interim measure pending the making of a final decision, four more 767-200ERs were purchased in June 1987 (Canadian Aviation June 1987, 6). The Boeing-737-300ER would take an aircraft already in Air Canada's fleet one more step towards the limit of its development. The MD-11 offered both larger capacity and a greater range than the Boeing-767-300ER but these two characteristics also made it less comparable to the L.1011 which it would replace. The most adventurous option under consideration was the Airbus A.340 which was right at the edge of current technology. The Airbus A.340 was the most advanced of the three aircraft considered but by the same token it was also the one most likely to have concealed flaws. In 1988 a decision to acquire the Airbus A.340 would be taken.

CPA's fleet modernization plan was based around the DC-10-30 wide body-aircraft. CPA announced its intention to purchase several in 1977. (Canadian Pacific Annual Report 1977). Delivery of these aircraft began in 1979. Two of the three delivered in 1979 were leased out for the first year. By the end of 1981 CPA had retired half of its six DC-8-40s/50s, replacing them with DC-10-30s. The phasing out of its DC-8 fleet was completed in 1983. In 1984 the

number of DC-10s reached 8 giving CPA a fleet of long range jet aircraft consisting of 8 DC-10s and 4 Boeing-747s. In 1983 the company had ordered four Boeing-767s but in the face of financial losses the purchase was cancelled. In 1985 a fleet rationalization plan was developed in which the four Boeing-747s were to be sold to an American carrier which would sell CPA four more DC-10-30s. In the mid-1980s, CPA used its Boeing-747s on its services to Amsterdam, until their disposal, while its DC-10s served Amsterdam and all CPA's other European destinations. In 1986 the company passed into the hands of Pacific Western Airlines and the joint company took the name Canadian Airlines International (CAI).

In May 1987 CAI announced that it would acquire 6 Boeing-767-300ERs with General Electric engines to replace DC-10s on both transcontinental and North Atlantic routes. It also secured an agreement with Flying Tiger to establish a joint round the world freight service out of Montreal using Flying Tiger Boeing-747 freighters. It would thus become fully competitive technologically with both Air Canada and Wardair on the North Atlantic. The agreement with Flying Tiger, however, received opposition from Air Canada. The agreement was terminated under government pressure on the grounds of Canadian public interest. In mid-1988 CAI also announced the acquisition of Boeing-747s intended for use on the Pacific where it faced considerable competition from carriers employing Boeing-747s.

Canada's two major scheduled carriers have also moved jointly to deal with another one of the larger problems caused by advances in technology which is looming on the horizon for scheduled carriers. This is obtaining adequate and fair exposure on the computer systems now used almost universally to make reservations for travellers. They have created a single computer reservation system called "The Gemini Group" (Air Canada Annual Report 1987, 5).

Wardair has also sought to remain technologically competitive. In 1977 it announced that it would dispose of its Boeing-707s and acquire two DC-10-30s and add two Boeing-747-200s to its two Boeing-747-100s giving it a fleet of 6 long-range jet aircraft. Both the DC-10-30s and the Boeing- 747-200s shared the same engine, the CF 6-50 Cl/El. Wardair continued to operate two jet engines because its other 747s used Pratt and Whitney engines. The DC-10s were to have single class seating for 301 and the new Boeing-747s were to have single class seating for 456 (Annual Report 1977). In 1980 it announced plans to acquire 6 A.310-200 aircraft between 1983 and 1985 but it was forced to cancel this program in the face of financial losses in 1981, 1982, and 1983. It did add one DC-10-30 to its fleet in 1981. In 1986, three A.300s were obtained as an interim measure. These were on conditional sales contracts with one scheduled to return to the vendor in August 1987 and the other two in 1989. A new fleet plan was prepared with twelve A.310-300s

to be acquired rather than the previous six A.310-200s. The A.310-300s had 196 seats and a longer range than the 200s. They could operate up to distances such as those between Vancouver and London or Frankfurt. Delivery was scheduled to be completed by the end of 1988. The DC-10s would be disposed of and so would the two Boeing-747-200s which share its engines. One more Boeing-747-100 with an estimated remaining useful life of eight years would be acquired giving it a total of three Boeing-747s. The completed plan would thus see the company move from a fleet of four 747s, three DC-10s, and three A.300s to one of three 747s, and twelve A.310s on the eve of the 1990s. The first of the 747-200s was sold in 1986 (Annual Report various).

4.4 CONCLUSIONS

Technological change has been very important on the Canadian North Atlantic because it reduced the real cost of transatlantic air transportation from the end of the Second World War. It accomplished this at the same time as providing improvements in comfort, capacity, speed and range. The oil crises of the 1970s transformed the structure of input prices. The cost and price increases associated with the oil crises corresponded to the end of rapid growth in passenger traffic on the North Atlantic. The research of the last decade into fuel economy is unlikely to provide the expected cost decreases because oil prices have fallen from

their peak at the end of the 1970s and the begining of the 1980s. Nevertheless, these gains in fuel efficiency have contributed to holding down fares and would become much more significant should oil prices return to their previous levels.

The major Canadian carriers, although they have seldom been actively involved in initiating technological change on the North Atlantic, have usually responded rapidly to its advent.

Air Canada has generally ensured that its aircraft were fully comparable technologically to the bulk of the aircraft operated by its major competitors. In the later 1950s, however, it stopped the technological evolution of its piston fleet with the Super Constellation while awaiting the arrival of the Jet Age. It was also deeply suspicious of supersonic jet airliners, correctly as it proved, and delayed placing orders until it would have likely had to accept a two year delay before it would have been able to meet supersonic competition.

Air Canada made an important contribution to Commonwealth aviation in the role it played in encouraging Rolls Royce to develop civilian aviation engines. Although it lacked the resources of PAA or TWA to be a technological leader, and its one attempt to steal a march on technological development with the DC-4M did not turn out particularly well, it

has worked with beaverish determination not to be left behind.

CPA's record in keeping up with technological change on the North Atlantic was not quite as good as that of Air Canada in the 1960s and 1970s but its smaller size placed constraints on its evolution. While in the hands of Grant McConachie it essayed being a technological leader but was doubly unfortunate. The early Comet's fatal flaw prevented CPA from becoming one of the first airlines in the world to initiate jet service although, even so, this would not have been on the North Atlantic, at least initially. Its acquisition of the Britannia turbo-prop gave it only a brief lead on the North Atlantic and then contributed to CPA's late arrival in the jet age because of the resources it tied up. CPA was also slow both in acquiring wide-body aircraft and in employing them on the North Atlantic once it had acquired them. CPA's financial problems in the early 1980s also hurt its plans for modernization.

Wardair has always paid close attention to technological evolution and has attempted to ensure it has the correct aircraft for its plans of expansion. It entered the jet age as soon as it could and then moved up to the Boeing-707 when it expanded out of its first basis in western Canada. When ABCs were introduced it moved to acquire Boeing-747s which it introduced into service only two years after Air Canada and before CPA did. On the North Atlantic Wardair was using

747s about two years before CPA did. Like CPA, its modernization plans were hurt by the financial problems of the early 1980s but it is now prepared to enter the 1990s with a fully modern fleet of aircraft.

Although Wardair has not attempted to be a technological leader it has done well in matching its fleets to its needs and perceived opportunities. In addition, when it first acquired its own jets at the end of the 1960s it was faced with the problem of securing year round employment for its fleet. As will be discussed in the chapters on the role of the charter market and on the interaction of the North Atlantic and other markets, its annual reports from this period recount its efforts to develop the market for winter holiday charters which are predominantly ITCs, inclusive tour charters. The incredible growth of winter ITC traffic in other markets has had very important influences on Canadian North Atlantic operations.

The role played by Canadian government policy in the development of Canadian air transport on the North Atlantic will now be examined in Chapter V.

Chapter V

CANADIAN GOVERNMENT POLICY

Government policy plays a very important role in the evolution of an international air transport market. It determines what national carriers are eligible to operate to what foreign destinations. It determines what centres within the country are eligible to receive direct international service. It also determines through its negotiations with foreign governments what foreign competitors will be allowed to enter the Canadian market for travel abroad and on what terms, in return for the foreign government allowing one or more Canadian carriers into their market for travel abroad and what terms they will provide and insist upon. It also possesses the final say upon the fares that the airlines will charge.

It is reasonable to assume that Canada's citizens wish to have the widest and most frequent service to Europe at the lowest possible price. Generally speaking, the more destinations that a carrier can serve, the more passengers will choose to travel with that carrier in preference to its rivals to avoid the problems involved in changing airlines in mid-route. A more extensive route system, **ceteris paribus**, benefits a carrier as it spreads fixed costs across a

broader base allowing lower fares per mile or greater profitability. The Canadian government might also choose to restrict foreign carrier access to internal points in the Canadian domestic system in order to support traffic development by its own carriers, even though this might not always be most advantageous to travellers.

The first section of this chapter will look at the role Canada played in the negotiations leading up to the First Bermuda Agreement between the United States and the United Kingdom which established the structure by which civil aviation would develop on the North Atlantic. The second section will outline the process by which Canadian carriers gained access to Europe and European carriers access to Canada. The third section will follow the government's decisions on international route allocations to Canadian carriers for the operation of scheduled services to Europe.

5.1 CANADA AND THE EMERGENCE OF THE SYSTEM GOVERNING NORTH ATLANTIC AVIATION

As the Second World War drew to an end, many conferences were held on matters of international concern to design the post war world. Aviation was one of these areas of concern. The first of these aviation conferences that Canada attended was the "Dominion and Empire Conference on Aviation" held under Lord Beaverbrook in 1943. The great decisions would be made in 1944 at Chicago and in 1946 at Bermuda. The

major players would be the United States and the United Kingdom as head of the British Empire. By choice, the Soviet Union would take no part in the shaping of international aviation.

In 1944 Canada was looking forward to entering the post war world with a clean slate as far as international air agreements were concerned. Its wartime international air agreements were to run for the duration on the war and for six months thereafter. It had also announced that the pre-war agreement between the United States, Eire, Great Britain and Canada which had established Pan Am and an Eire-Commonwealth carrier as the carriers on the North Atlantic was no longer applicable.

During the war, decisions had been taken by the countries of the North Atlantic Alliance which had great influence on the positions that would be taken at the conferences on post war aviation. These decisions had resulted in the Empire providing a great deal of aviation infrastructure, which meant that when the war ended all that was necessary for a world girdling aviation industry and market would be in place, and that the Empire would provide a disproportionate share of combat aircraft and the United States would provide a disproportionate share of the support and transport aircraft required for the Alliance's war effort. It raised the spectre that if America's airlines with their ready access to large war surplus American transport aircraft, and with

their widespread wartime experience in operating them on behalf of the American government, got unrestricted access to the international market, no country's aviation industry might ever be able to catch up.

A number of positions were put forward when the 1944 Chicago Conference opened. The United States, Australia and New Zealand, Great Britain, and Canada all differed.

The United States opposed the creation of an international aviation authority with more than consultative powers and wished for bilateral agreements between countries on routes. It was willing to consider ways and means of setting minimum rates and, while preferring to have no limitations on frequencies, it was willing to consider the maintenance of some specified load factor for some limited period as a pre-requisite in increasing frequencies on established routes.

Australia and New Zealand sought to have a single international agency which would provide all trunk route service. The nations would control their domestic services and could provide service to neighboring countries after obtaining bilateral agreements.

The United Kingdom was in favour of an exchange of the first four freedoms, with fifth freedom rights a matter for negotiation. It was not averse to an international agency which would regulate routes, rates, and frequencies. In the absence of such an agency there would have to be an alterna-

tive method of dealing with the questions of the provision of capacity and fifth freedom traffic.

Canada sought the creation of an international authority which would be similar in many ways to the American CAB on the national stage of the United States. This agency would license airlines to operate internationally. The licence granted would specify the initial frequency rates on the route granted. Frequency increases would be granted according to a formula and frequency reductions could be required under another formula to a minimum of one flight per week. Every state would have the right to have at least one of its carriers operate a service to any point in the world on a minimum basis of one flight per week. Rates would be proposed by airlines, governments could object, and the final decision would be up to the international authority. The first four freedoms would be exchanged on a multilateral basis but fifth freedom traffic would be subject to bilateral negotiations between the government of the airline seeking such a right and the governments of the other affected states (O'Connor 1971, 20-29).

By late November, with Canada acting as mediator between the United States and the United Kingdom, there was almost agreement on a multinational exchange of rights. All agreed that every country could have an airline begin a service to any other signatory country on the basis of one return flight a week.

Agreement could not be reached, however, on the role that fifth freedom traffic would play in the formula's permission of an increase in the initial frequencies. The British approach was much more restrictive than the American and required that third freedom traffic be the basis of frequency determination with fifth freedom traffic permitted to fill empty seats. The American proposal required that fifth freedom traffic be part of the formula used to determine frequency. Canada's final compromise suggestion restricted fifth freedom traffic's role in the formula to being half of that played by third freedom. It was not accepted (O'Connor 1971, 30-36).

The Chicago Conference had two accomplishments. It provided for the establishment of the ICAO and it resulted in an exchange of the first and second freedoms multilaterally amongst most of the states attending.

In the face of the failure of the Chicago Conference to achieve a multilateral exchange of rights, the United States began to make transatlantic bilateral agreements. The U.S. Department of State Bulletin announced an agreement with Spain on December 2, 1944, with Denmark and Sweden on December 16, 1944, with Iceland on January 30, 1945, and with Eire on February 3, 1945. The United Kingdom was very displeased at the latter agreement because of Eire's position and behaviour as a neutral during the preceding years of the Second World War (Lowenheim and Langley 1975, 652-653).

The disagreements between the United States and the United Kingdom were finally settled at the 1946 Bermuda Conference. The Bermuda Agreement left the initial determination of capacity and frequency to the carriers, subject to an "ex post facto" review by both governments. IATA's rate-making machinery was given permission to recommend the air tariffs for scheduled services, subject to prior governmental approval by both parties to these tariffs.

Canada played a prominent role in the attempt to create a multilateral system to govern aviation on the North Atlantic and elsewhere. It failed, however, because the two leading western aviation powers were unwilling to compromise sufficiently to attain that end.

5.2 THE EVOLUTION OF CANADA'S BILATERAL AGREEMENTS

In the late 1980s, both Canada's major carriers stand on the brink of constructing around the world services. They jointly serve the major centres of Western Europe. Two other Canadian carriers, Wardair and Nationair, now also provide scheduled service to Europe. The rights of all these carriers have been acquired through negotiations carried out over the years since 1944. In exchange, Canada has granted rights to the carriers of other nations. Most of the major carriers of western Europe have acquired access to both eastern and western Canada. Most of the other national carriers of western Europe have acquired the right to serve

eastern Canada as have several from eastern Europe. Carriers from the Middle East, Africa, and South-East Asia have also acquired the right to serve eastern Canada across the Atlantic. Not all of these rights are used by their holders.

In 1945 the Canadian government decided that its priority in international air services would be the North Atlantic, followed by the West Indies and Latin America. The Pacific would be left till it had been cleared of "the Enemy" and co-operative agreements had been worked out (Debates Oct. 22 1945 2nd Session volume II, 1357).

Canada's bilateral agreement with the United Kingdom actually preceded the US-UK agreement and was made December 21 1945 in Bermuda. Britain's proximity, its ready-made market both as a destination and as a point of origin, and the historical, political, and military ties of the two countries made Britain the natural first step for Canada's national air services into "Europe". This agreement opened Montreal to BOAC and opened Prestwick and London to Canada's carrier. Service by BOAC did not commence until April 15 1947. Until April 30 1947 a civilian service continued to be provided by the Canadian Government Trans-Atlantic Air Service, CGTAS, which had begun operations in 1943. It was replaced by TCA (Atlantic) Ltd. on May 1 1947.

In 1947 Canada concluded bilaterals with Sweden, Eire, and Portugal. Canada's specified gateway was Montreal. The Swedish bilateral provided for the exchange of Third and Fourth Freedom rights with the addition of the right to pick up intermediate traffic. It was subject to review, however, at such time as Canada would designate an airline to use these rights. TCA began serving Shannon on October 1 1947 (Stroud 1962, 425). Service to Portugal was not provided until 1957 when CPA replaced TCA as the designated carrier. The Portuguese government, when approached by TCA, had refused to agree to a "change of gauge" at London, i.e. the substitution by TCA of a smaller aircraft than it used on the North Atlantic. TCA's management felt it could not begin service without using a change of gauge operation until such time as TCA also secured access to Rome.

In 1948 the Netherlands obtained a bilateral with Canada. The president of Canada's national airline, G. R. McGregor, viewed this agreement, which provided KLM with unlimited frequency on Amsterdam to Montreal, with a very jaundiced eye. It allowed KLM to tap the entire European market for transatlantic traffic to Canada. Before such traffic had all flown through London, which was already served by TCA (McGregor 1980, 66). KLM inaugurated service in 1949.

Canada's position in North Atlantic air transport changed dramatically in 1949 when the strategically located Dominion of Newfoundland became Canada's tenth province. The addi-

tion of Newfoundland led to the conclusion of a bilateral with Belgium and the revision of others, including those with the United States and the United Kingdom. The UK revision gave Canada new rights for traffic from Ireland, Iceland, and the Azores, as well was in the Caribbean. The US revision included traffic stop rights for Canada at St. Petersburg, Florida. Since Canada's carrier viewed its Caribbean operations as the balance wheel of its North Atlantic operations, it was reasonable for Canada to seek an exchange of "southern" rights for North Atlantic rights. The acquisition by Canada of the rights it had needed to operate to the Caribbean also had been affected earlier by the question of traffic rights on the North Atlantic. The right of Canada to use the American lend-lease bases in the Caribbean had been held up by United States-United Kingdom negotiations in which the United States was attempting to put together a package deal involving traffic rights in the Caribbean and the Dominion of Newfoundland (Debates, June 18 1947 Volume V, 4280). The Scandinavian countries' airline, SAS, exchanged Gander for Montreal as its gateway. Because of the Chicago exchange of the first two freedoms, not all carriers using Gander necessarily needed bilateral agreements with Canada, for example Loftleidir, Swissair, and, in 1950, LAI.

During the 1950s, agreements with European countries continued to grow in number. In 1950 Norway joined Sweden

(1947) and Denmark (1949) in having a bilateral with Canada. The three-country carrier, SAS, provided a joint service to Canada at Gander while enroute between Copenhagen and New York. In 1950 a bilateral was also agreed with France which saw Air France starting to provide service that year while TCA's Paris service began in April, 1951. In 1951 a bilateral was agreed with Austria but no service to that country began until 1959.

TCA began service to Dusseldorf in late 1952, the nearby Canadian forces in Germany providing the basis of the market. Lufthansa began service to Canada in 1956, the year after it had begun North Atlantic service to the United States. The first bilateral agreement with the Federal Republic of Germany to appear in the Canadian Treaty Series, however, is dated September 4, 1959 and it was not ratified until 1961 (Canadian Treaty Series 1961/6).

In 1957 Canada's bilateral with Portugal was altered to designate CPAL in place of TCA as Canada's carrier. Permission was also obtained from Spain to permit CPAL to begin operating to that country. An important alteration in the Canadian-Eire bilateral through an exchange of notes also occurred in 1957 when the requirement was dropped that any civilian airliner passing through Eire's airspace land at Shannon (Treaty Series 1957/31). In 1958 a bilateral was made with Switzerland which permitted TCA to add Zurich the same year. It was also in 1958 that an exchange of notes

with each of the Scandinavian countries re-established SAS's gateway in Canada as Montreal (Treaty Series 1958/12,13,14).

During the 1950s, the Canadian government maintained a clear policy of restricting access to airports which had not been designated as gateways. Even in 1956 C.D. Howe stated in the Commons that the government did not foresee direct service to the interior of the country (Debates, August 10 1956 Vol. VII, 7377-7379).

In 1960 two important bilateral air agreements were made. One was with Italy and one with the UK. The negotiations with Italy had been difficult because Italy was seeking fifth freedom rights from Canada for a Rome-London-Montreal route since it had acquired the British half of the necessary permission at considerable expense. The Italian bilateral, as finally agreed, provided that the designated Canadian carrier could fly Montreal-Rome-Bangkok and beyond while the Italian carrier could fly Italy-Montreal-Chicago or Los Angeles or Mexico and beyond. This bilateral was not signed until April 16 1962. At that time Italy still had not secured the necessary fifth freedom rights from the US for such an operation and Canada agreed to support Italy in the ongoing discussions.

On September 6 1960 an exchange of notes profoundly changed the bilateral agreement between Canada and the UK. This revision to the Canadian-UK bilateral for the first

time opened Toronto to a European carrier. Canada's carriers gained permission to operate Toronto-Hong Kong, to fly onward from London to Brussels, Dusseldorf, Zurich, and Vienna, and to serve London from Vancouver, Edmonton, and Winnipeg. The British carrier received permission to serve Toronto from London either directly or via Montreal. BOAC would remain the only foreign carrier with access to Toronto for the next decade.

It was also in 1960 that Canada signed its first bilateral agreement with a nation on the Indian subcontinent, Pakistan, whose airline PIA would begin North Atlantic operation in 1961. The agreement was reached December 21 1960 (Treaty Series 1960/24) but as of 1988 remains unused.

At the end of 1965, an Exchange of Notes with the Federal Republic of Germany exchanged Air Canada's gateway of Dusseldorf for Frankfurt.

In 1966 a diplomatically important, but commercially unimportant, bilateral was signed between Canada and the USSR. The project seems to have originated with the President of Air Canada, Mr. McGregor, as far back as 1954. McGregor's motive seems to have been primarily political, to reduce international tensions through the establishment of such a link, since he was well aware the level of traffic was likely to be inadequate to support a commercially viable service. In 1955 the feelers put out by L. Pearson, then

with External Affairs, on a visit to the USSR came to nothing. In 1958 expressions of interest by the Soviet Union were blocked by Prime Minister Diefenbaker's government. In 1964, on being approached by McGregor, Prime Minister Pearson authorized McGregor to once again put out feelers on the possibility of establishing an air link with the USSR during a visit to Russia McGregor was making. McGregor was able to report Russian interest. The matter then passed into Government hands with the bilateral coming in 1966 (McGregor 1980, 153-156). In 1969 a second bilateral was concluded with an iron curtain country, Czechoslovakia.

At the end of the 1960s, the question of access to Toronto by foreign carriers became of pressing importance. On March 12 1969 the House of Commons was told that several carriers had indicated that they wished to serve Toronto as well as Montreal and that the Canadian government was willing to enter into such negotiations on a **quid pro quo** basis (Debates, 1st Session 21st Parliament Vol. VI March 12 1969, 6521). On January 8 1970 the Canadian-Dutch bilateral expired pursuant to Dutch notice. The question was access to Toronto. Service to the Netherlands continued under special permission by both governments (AC Horizons Jan.1970, 3). A bilateral giving Italy access to Toronto was agreed in 1972 (Treaty Series 1972/27), one with West Germany in 1973 (Treaty Series 1975/4), one with the Netherlands in 1974 (Treaty Series 1975/19), one with Switzerland in 1975

(Treaty Series 1977/13), and one with France in 1976 (Treaty Series 1977/15). In 1976 Greece and Belgium were refused Toronto and the Canadian Minister of Transport announced "no further entry of air carriers from other countries into Toronto until additional facilities become available in the Toronto Region" (C.T.C. 1976b, 20). This moratorium lasted into the 1980s.

The usual price paid for access to Toronto by foreign carriers was fifth freedom rights (McGill 1980, 535). The Italian bilateral provided rights out of Rome around the world (with some restrictions, e.g. Australia excluded) and from Milan to Yugoslavia and one of Algiers/Cairo/Tunis/Khartoum. It also gave the Canadian carrier access to Milan (Treaty Series 1972/27). The West German bilateral gave five points beyond the Federal Republic of Germany. These, however, also had to be served by the German carrier, had restrictions on capacity and frequency, and excluded Africa below the equator. Canada also received two destinations in Germany in addition to Frankfurt (Treaty Series 1975/4). Air Canada chose Munich and Dusseldorf. The Netherlands bilateral provided points in Europe, Asia, and Australia and on to Canada, with some restrictions. The Swiss bilateral gave: Poland, Hungary, Austria, Yugoslavia, five Asian points, and on to Canada, Kenya and four African points below the Tropic of Cancer (McGill 1980, 537) and also included a capacity control agreement to reduce the impact

of Swissair's entry into Toronto on Air Canada (Ministry of Transport 1975, 5). The French bilateral provided three points in Europe, four African, and five Asian points, both of the latter with restrictions. Canada also received two points to be named in France, besides Paris (Treaty Series 1977/15).

The Eastern Mediterranean received considerable attention at the end of the 1960s and in the early 1970s, although the contraction of civilian aviation as a result of the economic problems of the mid and late 1970s contributed to the small final result. After 1960, when an air agreement with Turkey had been made, little occurred until 1969 when CPA began service to Greece and Olympic began service to Canada. The Canadian Greek bilateral was signed in 1974, five years later (Treaty Series 1977/41). In 1970 Canada approached the UAR but received no official reply. In the same year Canada was approached by Lebanon with the first talks being held in 1971. In 1971 the bilateral with Israel was finally completed allowing CPA and El Al to begin services. Jordan approached Canada in 1971 but was told that at that time there was inadequate traffic. Iraqi Airlines made an approach to Canada in 1973, which Canada regarded as unofficial since it did not come from the Iraqi government, and was told that Canada was currently reviewing its air transport policy and would contact Iraq at some subsequent time (Debates 1st Session of the 29th Parliament Vol. VII Nov. 17 1973, 7617).

A few scattered bilaterals were agreed during the mid 1970s. In 1975 an agreement with Poland was initialled (C.T.C. 1975, 29) with the signing occurring in 1976 (Treaty Series 1977/4). In 1975 there was also an agreement with Morocco (McGill 1980, 524). In 1977 there was a Canada-Finland agreement (Treaty Series 1977/32).

At the end of the 1970s talks were underway between Canada and the United Kingdom on a new bilateral when the British moved to transfer Air Canada from Heathrow to Gatwick Airport because of congestion. The Canadian carrier, with the support of the Liberal and, then, the Conservative government, resisted because such a move would create a problem for any of its passengers connecting to European carriers. It was finally settled when Margaret Thatcher's new government agreed to let Air Canada stay put in October 1979 (Montreal Gazette October 10, 1979, 59).

The 1980s would be dominated by several issues: small European carriers seeking access to Toronto, large European carriers seeking access to western Canada, and the expansion of Canadian transatlantic services beyond Europe into Asia. A few more small carriers also secured entrance into the Canadian market.

The 1980s opened with the UK-Canada bilateral being revised to give the UK access to western Canada. The UK now had eight gateways into Canada from the U.K.: Gander, Hali-

fax, Montreal, Toronto, Winnipeg, Edmonton, Calgary, and Vancouver. In 1984 Ottawa made a ninth. In return, Canada could operate out of nine cities (Sydney being the additional one) rising to ten in 1984. Its carrier also had fifth freedom rights to Brussels, Dusseldorf, Vienna and Zurich. Canada also received wide beyond rights in Europe, the Middle East, and onward to India, but with restrictions. In India itself, Calcutta and Delhi were excluded and Bombay was excluded before 1982. In south-east Asia, Singapore was excluded before 1984. Canada also received restricted fifth freedom rights to the sub-continent. The initial allocation was a maximum of seven flights beyond the UK with no more than three to one point. A schedule provided for an increase over time during the years 1983-1989. This bilateral thus links the themes of the eastward expansion of Canadian service and increased penetration of Canada by European carriers.

The second European carrier to secure entry to western Canada was Lufthansa. The bilateral was agreed in 1982 and signed in January 1983. During the period of negotiations, on March 5 1981 Lufthansa vetoed a schedule change "at the last minute" and forced the re-routing of 11,000 passengers when it refused to authorize an increase of flights to Frankfurt from western Canada to seven weekly from three (AC Horizons March 31, 1981, 1). Canada received certain intermediate fifth freedom rights in Europe to Germany, fifth freedom Rights beyond Germany, and the freedom from capacity

predetermination. Germany received some limited fifth freedom rights into the United States. It got one stop access to Vancouver from January 1983 with nonstop access to a point in Alberta with intransit rights to one California point. In 1985 it would receive a second nonstop point in Alberta with similar intransit rights to a California point. Nonstop rights to Vancouver would become available at such time as a Canadian carrier began non-stop service to Frankfurt from Vancouver, or on January 1 1987, whichever came first (AC Horizons no. 590 Feb. 1 1982, 1). Finally, in 1985 a third European carrier, KLM, gained access to western Canada with rights to Vancouver and Calgary as well as Toronto and Montreal (Transport Canada 1985/86).

The expansion of Canada's transatlantic carriers into southern Asia effectively started with the conclusion of a bilateral with India in February 1982. The agreement gave India the right to serve Mirabel airport from New Delhi and Bombay twice weekly. Canada could serve Bombay from any point in Canada twice a week. Various fifth freedom rights were provided both carriers. Canada's rights were to carry local traffic between two European points (excluding France and the U.S.S.R.) and one Asian point west of Bombay and to carry traffic from Bombay to any two points in southeast Asia. The fifth freedom rights became effective at such time as both carriers were operating (AC Horizons no. 593 March 17 1982, 1). The bilateral also provided for an around the world cargo route. India had been seeking the

bilateral since 1976. Canada agreed after the new British and German bilaterals provided additional fifth freedom rights. In 1982 the Canada-France bilateral was also amended in regard to any Paris-India service and southeast Asia.

The next two steps occurred in 1984. In that year a bilateral was reached with Singapore and the Canada-India bilateral was revised. Air Canada and Air Singapore had been both vitally interested in service between Canada and Singapore for some time and in 1982 they had discussed an exchange of flight numbers under which two of SIA's seven weekly flights from Singapore to London would have taken on Air Canada flight numbers and continued on to Canada while two of Air Canada's flights to London would have taken on SIA's flight numbers and continued to Singapore (Air Transport World, Feb. 1982, 15). The Singapore bilateral was signed in June 1984 and provided for service from Canada both via the Pacific and via Europe/Middle East. The 1984 amendment of the Indian bilateral tied in with the efforts of foreign carriers to secure access to Toronto. In return for granting India entry to Toronto, and a beyond right from Montreal to a US point, Canada received new rights for both its transatlantic and transpacific services. For transatlantic services, Canada got acess to Delhi, as well as Bombay, and rights beyond and for transpacific services it got access to Delhi as well as Calcutta.

The fourth step was the conclusion of a bilateral with Thailand in 1986. As a result of this bilateral, one carrier, CPA, received the right to around the world service for passenger and cargo and one, Air Canada, received an eastward round the world cargo service and access to Bangkok from the west (Canadian Government Press Release #234/86 for release Nov. 19, 1986).

It was also in 1986 that serious disputes about Air Canada's eastward extension of service arose. The first was with Singapore and the second was with the U.K..

Singapore found itself to be unhappy with the bilateral and never began service, although Air Canada began service in 1985. Singapore moved to terminate the bilateral in July 1986 because it was required to serve Mirabel instead of Dorval, it did not have access to Toronto, and it was having difficulties securing the rights it needed in Europe. SIA was being blocked by CPA in its efforts to obtain permission to fly through Athens, Rome, and Amsterdam. Its right to operate via Hong Kong and Tokyo to Vancouver was also dependent on CPA getting rights from those countries (Calgary Herald Tuesday July 15 1986, D3). The dispute was resolved in February 1988. Canada got additional rights beyond Singapore and SIA got beyond rights from Canada into the United States (Globe and Mail, February 6 1988, B6). Air Canada now had two beyond rights eastbound from Singapore, CPA's successor, CAI, had three beyond rights westbound, and SIA got access to Vancouver through Korea.

In September 1986 the UK moved to terminate the Canada-UK bilateral. The point at issue was that the UK claimed that 80 per cent of Air Canada's London-Bombay traffic was British in origin. Air Canada disputed this saying that 50 per cent was British originating, that 30 per cent was stopover traffic which was ongoing, and that 65 per cent of the traffic in ultimate origin was Canadian (Airline Business Dec. 1986). British Airways also had found its rights to western Canada unprofitable. In November in response to the British action, Canada announced its intention to withdraw from the International Air Service Transit Agreement. This would permit Canada to deny Britain the use of Canadian air space, considerably lengthening several of the UK's services to the US. By early June 1987 the dispute was affecting various aspects of Canadian-British air service including an Air Canada proposed charter service and a British Airways proposed low fare (Winnipeg Free Press, May 19 1987, 24; June 3 1987, 22).

The third major question of the 1980s was the access of more of the smaller transatlantic carriers to Toronto. In early 1983 it was announced that the moratorium would be relaxed and access permitted under four conditions: (a) Canada would get equal benefits in exchange, (b) the foreign carrier would provide an equivalent level of service to Mirabel, (c) the new service would operate in the off-peak period, and (d) the carrier would agree to operate from the

terminal building assigned by the Department of Transport (Ministry of Transport 1982/83, 3). In 1984 Greece got access to Toronto, as did Yugoslavia (in its first bilateral with Canada). Also, in 1984, as mentioned above, the Canada-India bilateral was amended to provide Air India entry to Toronto (Ministry of Transport 1984/85). Israel and Belgium secured entry in 1985 (Ministry of Transport 1985/86). Thailand got its access to Toronto, as mentioned above, in 1986. TAP was operating into Toronto in 1987 and SIA, as mentioned above, got access to Toronto in 1988.

Only a few other agreements affecting the transatlantic were made in the 1980s. In 1984 Belgium secured a change of gauge for its Montreal-Detroit operations in exchange for Air Canada getting air freight access to Brussels from Toronto. The same year Israel secured a change of gauge for its Montreal-Florida operation when the number of beyond points for the carriers of both countries was raised to four from two (Ministry of Transport 1983/84, 2-3). In both cases the change of gauge was subcontracted to a regional Canadian carrier. In 1983 Romania signed the 1981 agreement that had provided permission for TAROUM to serve Montreal and, in 1984, Canada signed the memorandum of understanding which had been agreed between Canada and the USSR in September 1983 to permit Gander to be used as a technical stop in a Russian air transfer of personnel to and from its fishing fleet. The signing was delayed by Canada until the follow-

ing March in protest over the Korean Airline disaster (Ministry of Transport 1983/84, 2-3).

Through the years, Canada's governments have gradually constructed a pattern of bilaterals which today permit the majority of Canadians ready access to most of the destinations in Europe and Asia to which it is practical for airlines to offer direct service, and even some to which it is likely not economical for airlines to serve. The over-riding concern has, however, been maintaining the health of Canadian carriers in doing so, and restricting the access of foreign carriers to the Canadian market as much as possible. The end result, however, has been that not only do Canadians and others have ready access between Canada and transatlantic points, but that they can frequently travel on Canada's own carriers, thus improving Canada's balance of payments and the welfare of all Canadians.

5.3 CANADIAN GOVERNMENT POLICY ON CANADIAN CARRIER DESTINATIONS

The allocation of permission to Canadian carriers by the Canadian government to serve transatlantic destinations has undergone considerable evolution since the end of the Second World War. Prime Minister Mackenzie King stated in 1943 that TCA was to be the government's chosen instrument for all transcontinental and international services (Debates, April 2 1943, 1776-1778).

When G. R. McGregor became President of TCA, it had been clearly established that he was expected to run the company on at least a break-even basis (McGregor 1980, 1). This fact was to have great importance in shaping the initial breaches in TCA's monopoly position in the international field.

In 1948, on being questioned on the subject by C. D. Howe, the cabinet minister to whom he reported, McGregor informed Howe that the traffic situation did not encourage the establishment of a service to Australia and New Zealand to implement the bilateral agreements with those countries. This was demonstrated by the poor load factors on British Commonwealth Pacific Airlines's services between Australia and New Zealand and North America. In addition, the only available equipment, North Star M-2s, could only operate westbound on the route at 25% capacity because of the over-water distances that were required. TCA, therefore, had no plans to open a service to the Antipodes for at least two years (McGregor 1980, 29-30).

Canadian Pacific Air Lines, however, had applied to serve both Japan and China and Australia and New Zealand. C.D. Howe and his cabinet informed his colleagues that TCA was not immediately able to begin service and would require heavy financial assistance if it did so. He was therefore in favour of modifying the government's position on TCA as the sole chosen instrument. On June 26, after several cabi-

net meetings, it was decided to designate CPAL on the Pacific as Canada's carrier. No subsidy, however, was to be paid and C.D. Howe required that CPAL use the Canadian-built North Star in its Pacific operations.

C.D. Howe seems to have felt that it was desirable for a Canadian company to begin operations on the Pacific lest the routes go by default to the carrier of some other country. It is also possible that the cabinet was concerned that CPAL would make a public case that the government's carrier had a "dog in the manger" attitude since TCA was not willing to operate the route and was preventing another carrier which was ready and willing to do it from going ahead (P. Smith 1986, 141-143). The decision was announced by the Minister of Transport, L. Chevrier, on July 21, 1948, four weeks after the decision was made and after the House of Commons had begun its summer recess (P. Smith 1986, 138).

"The nose of the camel was now firmly inside the tent" as CPAL had broken TCA monopoly on all international routes. In 1953, having secured a licence from Mexico by-passing the inter-governmental negotiations that were going on, CPAL was able to begin service along another path on the Pacific rim.

In 1954 CPAL again approached the government to take up a route that was available but unserved by TCA. This was the right to serve Amsterdam from Canada. CPAL proposed serving Amsterdam from Vancouver via a "polar route". McGregor informed C. D. Howe, still the minister to whom he reported,

that TCA's studies of the potential revenue situations made it clear that it was not an economical venture. He also prophesized that, if it were granted, CPAL would soon approach the government for additional privileges at other Canadian points. He said, however, that TCA would not oppose the application lest it be accused of "dog in the manger" tactics. The majority of the Canadian cabinet proved in favour of giving CPAL the necessary permission and the licence was granted as of January, 1955.

In 1956, the right to serve Yellowknife was added to CPAL's Vancouver-Amsterdam route. In 1958 the Conservative Government of the time permitted CPAL to exchange Yellowknife for Edmonton. Other Canadian points would follow (McGregor 1980, 66-67).

In mid-1956 CPAL applied to operate another North Atlantic route that TCA regarded as not viable under existing circumstances. This was Toronto to Lisbon. CPAL, however, was better positioned since its services to Spanish-speaking America allowed it to tap this market for passengers to the Iberian peninsula. Both the Minister of Transport, George Marler, and C. D. Howe, the minister responsible for TCA, initially opposed the request, but as the election approached, which their party was fated to lose, their firmness declined. The management of TCA also decided to back away from the press fight that CPAL threatened if they were blocked in return for a government assurance, which TCA

received, that this was the last CPAL demand in Europe that would be granted. CPAL was thereupon granted its application (McGregor 1980, 79-80).

When a bilateral was reached with Italy in 1959, CPAL was designated as the Canadian carrier to Italy (McGregor 1980, 115). It was subsequently given Greece and Israel as well.

In 1959 the board of TCA made a formal suggestion to the government that CPAL and TCA divide international routes on a continental basis. CPAL would receive the Pacific, Mexico, and South America. TCA would receive the transatlantic and Caribbean routes (McGregor 1980, 114) This proposal was again put forward in 1961 to the Special Interdepartment Committee which was studying the policy on domestic and international route licensing although TCA's preferred proposal was the creation of a single international carrier and a single domestic carrier (McGregor 1980, 121).

In the face of CPR opposition, the proposal to unite CPAL and Air Canada did not proceed but instead the idea of "mesh, not merge" gained ground. The new Minister of Transport, L. Balcer, who had replaced George Hees, announced in 1961 that it would be government policy to provide a single front for TCA and CPAL in their dealings with other countries in 1961 (McGregor 1980, 124).

Late in 1961 the Canadian government designated CPAL to serve London from western Canada. CPAL had sought this on

the grounds that its western Canada-Amsterdam service was having difficulty competing with carriers serving London. (McGregor 1980, 122-123).

The acceptance of CPAL's application to serve London from Vancouver in 1961 was very surprising because it did not seem to be consistent with another decision made shortly before it. The 1959 Canada-UK bilateral permitted the designation of a Canadian carrier to serve Hong Kong from Montreal and TCA had been told it would receive permission to operate this service. Then the Minister of Transport told TCA he had changed his intention of allowing it to serve Hong Kong on the grounds that he was concerned that this would be interpreted as a violation of the declared policy against putting two Canadian carriers on the same international route (McGregor 1980, 113-114).

The Minister of Transport, Balcer, explained the Government's decision to grant CPAL permission to serve London from western Canada in the House of Commons. Traffic from British Columbia and Alberta was flying to London on US carriers out of Seattle which had a direct service to the UK. Australian traffic enroute to the UK was choosing Qantas exclusively and crossing the USA directly to London. CPAL's proposed route used the northern path developed by CPAL and would permit it to better exploit the market it had established in western Canada. CPAL, in turn, would be able to tap the market in the Northwest US and in and South Pacific.

The UK bilateral permitted the designation. The route would not hurt TCA since the route to be flown by CPAL was longer than that operated by TCA. The diversion of TCA's gross revenue was estimated at only between 1 and 3 1/2 percent. Finally he said it was absurd that passengers choosing to fly CPAL to London had to backtrack to London from Amsterdam (Debates, 1960-1961 vol. VIII 9092-5).

The British government refused to permit such a designation on the grounds that traffic was inadequate to permit the addition of another carrier between Canada and the UK. On November 14 1961, at a meeting between the Canadian Minister of Transport and the British Minister of Air, it was agreed to defer the whole question "for further study" and the license was eventually withdrawn by the Canadian government (Bain 1987, 23).

CPAL also had proposed the introduction of a scheduled piston aircraft service between Toronto/Montreal and London at the lower fares permitted by IATA for such a service. This was denied by the Canadian government as was its later proposal to operate such a service between Toronto/Montreal and Amsterdam (McGregor 1980, 124, 129).

The possibility of uniting the two carriers was again considered by the Liberal government elected in 1963. The idea again faded in the face of CPR opposition and the idea of inter-carrier co-operation, particularly in the interna-

tional field, returned to the forefront (McGregor 1980, 145-145).

In 1964 the Minister of Transport, Mr. Pickersgill, in reference to the international air services, stated that

> Air services provided by Canadian airlines should serve the Canadian interest as a whole; these services should not be competitive or conflicting, but should represent a single integrated plan, which could be achieved by amalgamation, by partnership, or by a clear division of fields of operations. (Department of Transport Press Release April 24 1964)

On June 1 1965, after consulting with the two airlines, the Transport Minister, J. W. Pickersgill, made a statement in the House of Commons setting forth a division of international routes that in essence would remain unchanged for over twenty years. CPAL would serve the entire Pacific area, Asia, Australia and New Zealand, southern and southeastern Europe, the Netherlands in northwestern Europe, and Latin America. Air Canada would serve the United Kingdom, western, northern, and eastern Europe, except the Netherlands, and the Caribbean. The question of Africa was left unresolved and the question of the division of routes into the United States was also delayed until the setting of the Canada-US bilateral in 1966 (McGregor 1980, 151).

The next important "Statement on Air Policy" to touch on international questions in a major way was that announced on November 23, 1973 by the Minister of Transport, J. Marchand. The objectives of Canada's air policy were

> to ensure safe, efficient, and convenient air services to meet the needs of travelling Canadians; to contribute to the economic and social well-being of the country; and to ensure that air services are reasonably balanced to create an atmosphere in which the industry can continue to develop in an efficient and profitable manner without undue burdens on the taxpayer. (Directorate of Public Affairs, Transport Canada, Press Release, March 23 1973)

The economic viability of routes was to remain a major consideration and international services would not be established solely in the interest of national prestige. Temporary authorizations on international scheduled services would be discouraged in preference to negotiated bilateral agreements and co-operation between the two major carriers was encouraged. After again asserting the pre-eminence of Air Canada, Marchand announced a somewhat changed division of the globe, which would be subject to review after seven years. Air Canada was given northern Europe, except the Netherlands, central Europe and eastern Europe (the Warsaw Pact Countries) and Yugoslavia. CPA was given southern and southeastern Europe, including the right to service Milan, plus the Netherlands. Air Canada was assigned the Caribbean states and the bordering South American states, Columbia, Venezuela, Guiana, Surinam and French Guiana. CPA received the balance of South and Central America, except Brazil which might be assigned to either airline. CPA retained Australia, New Zealand, and the Pacific Island countries. Air Canada was assigned all of Africa except Morocco, Algeria and Tunisia, and either Egypt or Sudan, if one were

selected as a route in a Canada-Italy bilateral, which went to CPA. In Asia Air Canada received Lebanon, India, and Pakistan while CPA was assigned most of the balance including Israel, Iran, China and Japan. Air Canada, though, might also be designated to China if Canada obtained the right to designate two carriers in a future bilateral. Southeast Asia was left for future consideration.

CPA felt harshly treated in this revised division of the globe. It had lost Colombia, Venezuela, and the three former Guianas along with parts of Eastern Europe, Lebanon, Pakistan, and India. In addition, its former preserves of Brazil and Southeast Asia were now in doubt and Air Canada had been assigned most of Africa (Harris 1978, 225).

Air Canada had originally planned to extend service to Yugoslavia in 1976 and Lebanon in 1976 until market conditions changed (AC Horizons, no. 441 Aug. 15 1975, 3).

The division of the world between the two major carriers began to fray somewhat in the mid 1980s under the Conservative government of Brian Mulroney. Wardair, which began international scheduled operations in late 1985, received designation as a scheduled carrier to Puerto Rico, the UK, and the Dominican Republic. Nationair was granted Hamilton-London and Montreal-Brussels as scheduled routes (Information Canada, no. 248/87 for release Oct. 5, 1987, 4). Except for Wardair's UK rights, these were routes which no other Canadian carrier was serving or was likely to serve.

In 1987 another low-cost scheduled carrier, this time British, was authorized. This was Highland Express Airways for a no-frills service between Toronto and Glasgow (Winnipeg Free Press, Wednesday, June 3, 1987, 22).

At the end of 1986, the structure of Canada's air transport system was transformed when PWA acquired CPA and they formed into Canadian Airlines International. In 1986 Air Canada had passenger revenues of $2,200 million, compared to $1,600million for CAI, and $388 million for Wardair (Globe and Mail Report On Business Magazine, August, 1987, 20).

In 1987 there followed a restructuring of the international allocation of routes between Air Canada and CPA's successor, Canadian Airlines International, which gave both carriers a chance at building an around the world service. In Europe CAI gave up Portugal, Spain and Greece and received Denmark, Sweden, Norway, the USSR, Munich, the right to serve Frankfurt from Western Canada, and the right to serve one other point, except Frankfurt or Dusseldorf, in the Federal Republic of Germany. All of Africa, including North Africa, and all of the Middle East,along with Cyprus and Turkey, are now reserved for Air Canada. In Asia, Air Canada was assigned to serve the entire area up to and including Burma, except for an across the Pacific service to Delhi or Calcutta which was reserved for CAI. CAI was assigned Asia east of Burma except Singapore, Malaysia, Korea, and the Philippines which went to Air Canada. Aus-

tralia, New Zealand, and the Pacific Islands were reserved for CAI. In the Americas, south of the US, Air Canada only retained the Caribbean area and Venezuela.

The stated purpose of the exchange was to benefit Canada, travellers, shippers, and the Canadian airline industry by providing for expansion and the opportunity of new services by Canadian carriers. Mr. Crosbie also said that applications from Canadian carriers other than Air Canada and CAI would continue to be examined on their own merits and that the policy included an undertaking to consult with other Canadian carriers on individual applications (Canada Information no. 248/87 for release October 5, 1987, 2-4). In mid 1988 Wardair received access to Paris as a scheduled carrier.

Canada's governments, whether Liberal or Conservative, have demonstrated, until recently, that their primary concern in allocating destinations amongst Canadian carriers was to enable these carriers to compete more effectively internationally by not having to fight amongst themselves. Canada's initial flag carrier in a region would normally see a route allocated to another Canadian carrier only if it was not willing to immediately begin serving that destination and the other carrier was. A desire to provide a wider variety of choice to consumers by providing a wider variety of Canadian airlines on the North Atlantic has not been demonstrated at all until the recent Mulroney government. By preventing intra-Canadian competition on the dense transat-

lantic city pairs that might seem to support it, Canada's governments had enabled Canada's major carriers to better serve destinations beyond those city pairs which had a very high demand since the travellers who did not continue on to the final destination of the flight still contributed to covering the cost of the entire flight over the greatest part of its route.

The Canadian government also monitors the movement of fares in comparable city pairs in domestic and international markets to insure that undue price discrimination does not occur. This demonstrates an interest in equity as well as economic efficiency (Transport Canada February 1981, 231, 239-240).

5.4 CONCLUSION

Canada's governments have generally shaped their policies on North Atlantic aviation in what would seem to be the interest of Canada as a whole. At the end of the Second World War, the Canadian government endeavoured to secure a multilateral system of air agreements for international civil aviation that would have opened the entire world to Canadian carriers at the risk of opening Canada to all the world's carriers. After this endeavour failed, Canada's governments followed a policy aimed primarily at securing the interest of Canada's carriers before consulting the apparent interest of consumers to have the widest possible

choice. This is true both in its policies towards bilaterals and towards the allocation of destinations amongst Canada's carriers. As will be argued in subsequent chapters, Canadian carriers, even though they were not permitted to compete among themselves on the same routes, have been firmly disciplined by the ability of Canadians to use those European carriers which were not pooled with a particular Canadian carrier, to use the route systems of American carriers by travelling via the United States, and, since the start of the 1960s, by the threat posed by a very vigorous charter industry on the Canadian North Atlantic. The policies of Canada's governments have created a situation where Canada has more than one quite healthy international carrier, including two which stand on the verge of extending their transatlantic operations into round the world services. Chapter VI will now look at the behaviour of Canada's scheduled carriers on the North Atlantic.

Chapter VI

CANADA'S SCHEDULED CARRIERS

Scheduled traffic between Canada and Europe developed under favourable conditions during the period studied. There were strong links between the populations which were further strengthed by European emigration to Canada. The growth in demand occurred in the context of favourable economic factors. Fundamental features were the long period of generally sustained economic growth in the relevant economies, combined with high income elasticities of demand for air travel. The innovations in aircraft design made air travel increasingly attractive, safe, and economical. Demand for business travel increased under the impetus of economic growth and pleasure travel surged forward under the conditions of high demand elasticities, attractive fares, and improvements in air transport economics. These improvements included both improvements in aircraft and marketing innovations in fares and other business practices.

This chapter will present the air transport development of Canada's scheduled carriers on the North Atlantic. The first section will follow their expansion into Europe and adaption to changing economic conditions. The second section will follow the evolution of the pooling phenomenon on

the Canadian North Atlantic. The third section examines the performance of CPA, Air Canada, and Wardair.

6.1 EXPANSION OF CANADIAN CARRIERS INTO EUROPE

This section will present a detailed account of how the activities of Canada's major scheduled carriers led them to the point where, jointly, they serve most of the major centres in Europe and where each stands on the edge of creating around the world services.

6.1.1 1937-1947 The Emergence of TCA and CPAL

During the decade from 1937 to 1947 both of the major Canadian international air carriers were created. Both then played important roles in Canada's war effort on the North Atlantic.

Trans-Canada Airlines (later Air Canada) was formed as a crown corporation in 1937 following the failure of an attempt by the Canadian government to create a national air carrier owned equally by the CNR and CPR. The original attempt had proposed each company would name four directors with a ninth director being named by the Minister of Transport, or, in an amended proposal, with three directors being named by each company and three by the Minister. TCA, as actually formed, had only one shareholder, the government-owned CNR; its mandate was to operate all Canada's transcontinental and international air service (McGill 1980, 11-12).

One year later, the TCA Act was amended to allow TCA, with the approval of the Governor-General in Council, to form a joint company with Irish and British Companies to establish a transatlantic air service (Ashley 1963, 12). In 1935 Canada had entered an agreement with the UK, Eire, and Newfoundland to establish such a service (McGill 1980, 11) and in 1937 Imperial Airways and PAA both carried out experimental crossings on the North Atlantic with flying boats (Davies 1964, 323).

Canadian Pacific Air Lines was organized on May 16 1942 from airlines already controlled by the CPR (Main 1967, 368). It thus became part of Canadian Pacific's conglomerate enterprise. Curiously, Canadian Pacific personnel were involved in creating a transatlantic air service even before CPAL was created. Sir Edward Beatty, President of the CPR, arranged the creation of the Ferry Service in 1940 at the request of Lord Beaverbrook. This flew bomber aircraft built in North America to the UK. The service was subsequently taken over by the Royal Air Force Ferry Command in 1941 (Main 1967, 163, 165). During the war CPAL was deeply involved in the construction of the Alaskan highway and developed knowledge and experience which would leave it well placed at the end of the war to apply to create an air service to the Orient (Main 1967, 159-160).

During the war, TCA crews took part in the manning of BOAC's Return Ferry Service, the initial purpose of which

was to fly the crews of Ferry Service back to North America. In 1943 TCA was put in charge of creating the Canadian Government Trans-Atlantic Air Service, CGTAS, to carry mail and important passengers for the war effort between Canada and Great Britain.

CGTAS began service with one converted Lancaster bomber on July 22, 1943. By the end of the war it had a fleet of six converted Lancasters. (Main 1967, 154-5). In 1946 service was extended from Prestwick to London (Stroud 1962, 424). Tickets for transatlantic flights began to be sold following the end of war (P. Smith 1986, 93). CGTAS continued operations till the end of April 1947 (Stroud 1962, 425).

In 1945 the TCA Act was amended to allow the carrier to undertake investments or give assistance to the air companies of other countries so that specific agreements might be made with those carriers to feed traffic into Canadian services (Debates 2nd session vol. II Oct. 22 1945, 1396-1405).

In 1945 there was a statement in the House of Commons that the pattern of routes to be developed by TCA would have a reasonable chance of operating on an economic basis rather than be directed towards national prestige. The international routes of TCA were to be operated by a series of TCA subsidiaries, except those to the U.S. which were considered to be an extension of domestic services. (Debates 2nd session Vol. II Oct. 22 1945, 1355-7).

By the end of this period there were thus two Canadian airlines which had been created and had played important roles during the Second World War. In addition, an initial policy for Canadian international aviation had been laid out and it was clearly intended by the Canadian government that, in developing its international route system, TCA was to pay close attention to its bottom line.

6.1.2 1947-1959 The Creation of North Atlantic Passenger Networks

In the years between 1947 and 1959 both TCA and CPAL created the basic framework of their trans-Atlantic passenger networks using propeller driven aircraft. TCA was named to serve the United Kingdom and gradually expanded into Europe from this firm economic base. CPAL first received the status of being a Canadian flag carrier for trans-Pacific services. It then secured access to north-western Europe and later received permission to operate to Iberia. By the end of this period CPAL had received permission to extend its service further east in the Mediterranean basin. Throughout this period the total market for Canadian North Atlantic passenger traffic was developing steadily.

TCA (Atlantic) Ltd., the only subsidiary company of TCA actually formed for the operation of international air services, took over the operation of the Canadian scheduled passenger air service on North Atlantic on May 1 1947. The

North Star replaced the Lancastrian. Indeed, the first North Star on the Montreal-UK route preceded the official TCA (Atlantic) Ltd. take-over by some 2 weeks (Stroud 1962, 424). TCA added service to Shannon, Eire, on October 1 1947 (Stroud 1962, 425). During 1947, TCA had at least a daily service between Canada and Europe. In July it reached 11 return trips weekly (Debates, 1947 July 6 Vol. VI, 5222). TCA carried virtually all the traffic since the only other carrier was BOAC with a once weekly return service (Railway and Shipping Sessional Committee, May 13 1947 no. 4, 245, 233).

In 1948 a number of important developments occurred affecting both TCA and CPAL. TCA began service to Bermuda from eastern Canada May 1 and to Nassau, Kingston and Port of Spain December 2 (Stroud 1962, 426-427). TCA would remain the chosen instrument of the Canadian government in this market. As will be discussed in Chapter VIII, this market was and is important to TCA/Air Canada's North Atlantic operations because the peak season for Caribbean traffic falls in the off season on the North Atlantic. The second major development was CPAL's success in securing permission to become Canada's designated carrier to Pacific destinations. If CPAL had not broken TCA's monopoly at this time it is probable that it would never have been able to begin service to Europe.

TABLE 6.1

TCA's Scheduled Overseas Operations 1947-1964

Year	Atlantic Scheduled	Southern Scheduled	Total Scheduled
1947	14,393		14,393
1948	23,429	2,951	26,380
1949	21,872	11,543	33,415
1950	17,340	14,952	32,292
1951	21,200	21,100	42,646*
1952	23,100	29,700	52,777*
1953	25,100	29,600	54,741
1954	29,000	32,000	60,840
1955	34,000	31,000	65,144
1956	40,000	46,000	86,354
1957	48,000	58,000	106,459
1958	61,000	72,000	132,663
1959	64,000	87,000	151,249
1960	83,000		
1961	104,000		
1962	114,000		

Sources: Total scheduled passenger traffic is taken from Stat. Can. series 51-201 and 51-202. The North Atlantic and Caribbean totals for 1947-1950 are from TCA's Annual Report for the year. For 1951-1953 these totals are calculated on the basis of the rates of change given in the year's TCA Annual Report and the total for scheduled traffic given in series 51-202. The totals for Atlantic scheduled traffic for 1954-1962 are from Davies (1964), p.461. Totals for the southern services 1954-1959 were obtained by subtracting Davies's figures from the rounded totals for TCA's scheduled traffic.
Note: The two years marked * may contain 7,611 and 3,000 immigrants flown to Canada for the Canadian government respectively. This would reduce the totals for the southern services for those two years by those amounts.

CPAL gained access to the Pacific in part because of government financial constraint on TCA, as discussed in the

preceding chapter, and, more positively, as a result of two of the traits of its president, Grant McConachie. These were an excellent political sense and a very cavalier approach to business when it collided with strategic opportunity. In response to a question as to what would happen if CPAL got less than break-even loads on its Pacific service, McConachie replied, "The C.P.R. has to haul a few more boxcars of freight to make up our losses ... I told the directors to expect us to lose our shirts on the Pacific for maybe ten years until we've built up these routes ... We've got to expand while the options are open. If we wait till the routes prove out, we'll be too late. Others will be ahead of us" (Keith 1972, 251). As a direct result, "In the summer of 1949 Canadian Pacific spread its wings over nearly fifteen thousand miles of ocean on nothing more substantial than Grant McConachie's hunch. No market survey. No economic projections. There was not even a smudge of tablecloth arithmetic to justify the venture of some $10 million in capital and first year operating services". (Keith 1972, 269). Such bold enterprise would soon have led to collapse if CPAL had not been protected by the corporate conglomerate umbrella of Canadian Pacific. CPAL's attractiveness was heightened by shipping losses during the war and the deteriorating economics of passenger liners which had been the international transport arm of Canadian Pacific.

CPAL's expansion into Europe required these same traits. They were in marked contrast to those permitted at TCA where the tone was set by C.D. Howe's reply to the new President of TCA, G. R. McGregor when Howe was asked for terms of reference, "you keep out of the taxpayer's pocket, and I'll keep out of your hair" (McGregor 1980, 1).

TCA's expansion into the Caribbean in 1948 was the result of C.D. Howe's keeness to open such a service. This prompted him to agree to have the initial deficits covered by TCA's Atlantic contract (McGregor 1980, 30).

In 1948 TCA's scheduled Atlantic traffic increased (Table 6.1). It was continuing to benefit from BOAC's aircraft shortages which meant that BOAC's Montreal service was incidental to its New York service. Between Canada and the UK, TCA held 75% of the traffic to BOAC's 25% and during the peak season BOAC was only offering three return services weekly compared to TCA's fourteen (Railway & Shipping April 6 and 7 1949, 315-316).

In 1949 and 1950 TCA saw the volume of its North Atlantic traffic decline. In 1949 on the North Atlantic, TCA experienced a 6.6 per cent decline in scheduled traffic. Peak season service to the U.K. remained at two daily return services with this being reduced in the spring and winter off season (Railway & Shipping, April 3 1950 no. 5 284). No comment was made during the annual meeting of TCA's presi-

dent with the Railway and Shipping Sessional Committee of the House of Commons on the level of competition TCA was facing on the North Atlantic but it was noted that currency devaluation had resulted in the fares from the sterling area rising by 20% compared to the 10% rise in the fare from Canada to the sterling area (Railway & Shipping April 3 1950 no. 5, 285).

In 1950 TCA suffered a 20.7 per cent decline in its carriage of North Atlantic scheduled passengers. The decline was explained as being due to increased competition. BOAC's operations had intensified and KLM and Air France were now licensed to operate between Montreal and Continental Europe as was a charter operator. Although TCA still carried the major proportion of the traffic, its share had declined. TCA's response to the greater volume of foreign seat miles being offered on the Canadian North Atlantic had been to reduce its own services. The summer peak saw only a daily service being offered with second sections being operated only when needed. Overall TCA did quite well in tailoring its decline in revenue passenger miles with a decline in available seat miles. The 22 per cent fall in the former was matched to a 23 per cent fall in the latter. The overall load factor for all services thus actually rose. TCA was able to do this because it was possible to transfer aircraft and crews advantageously to domestic services (Railway & Shipping April 23 1951 no. 3, 195).

In 1951 TCA's traffic stopped its decline and began to increase. This year saw a 22 per cent increase in its scheduled traffic on the North Atlantic. Service was extended to the continent of Europe when Paris received a service via London from Montreal starting April 1 1951. Initially once weekly, service increased later to twice weekly. During the peak season, TCA provided one daily flight on the North Atlantic and this was not reduced following the summer season because of an increase in traffic (Railway & Shipping May 5 1952 no. 3 1974-5).

In 1952 there was about a 10 per cent increase in scheduled traffic. Service was extended to Dusseldorf, near which the Canadian army in Germany was then stationed, on November 5 1952 (Stroud 1962, 428). An organizational change to TCA directly affecting its North Atlantic services occurred on January 1 1952 when TCA (Atlantic) was absorbed into TCA. Its effect on operations, however, was confined to changes in TCA's accounting system (McGregor 1980, 37).

In 1953 there was about a 9 per cent increase in scheduled traffic. In the high season there were 8 transatlantic flights weekly. Paris was served by 2 of them, Shannon by 1, and Dusseldorf by 1. It was felt that the growth in 1953 was at least partially due to traffic for the Coronation of Elizabeth II (Railway & Shipping March 29-31 & April 5-6 1954, 185-186). On November 1 1953 TCA began its first direct transatlantic service to Toronto (Stroud 1962, 429).

As will become apparent in the discussion on CPAL's access to the Iberian peninsula in 1957, the most important event in 1953, in the evolution of the two Canadian carrier's services to Europe, was CPAL's initiation of service on October 15 from Vancouver via Mexico City to Lima, Peru. CPAL had obtained the license directly from the Mexican government. These negotiations on the part of CPAL seem to have been lubricated by the distribution of Cadillac limousines (Smith 1986, 184).

The CPAL-Mexico agreement seems to have stimulated the Canadian government to bring its own negotiations with Mexico for an air bilateral to a quick conclusion. The bilateral permitted KLM to serve between Montreal and Mexico City until a Canadian or Mexican carrier opened such service. TCA moved as quickly as possible to open a service from Eastern Canada to Mexico City to displace KLM but problems, first with the Mexican government over securing a licence, and then with the US about extending TCA's Tampa service onward to Mexico City, even without traffic rights, delayed TCA's commencement of its service until January 16 1954 (McGregor 1980, 77).

During the period 1954 to 1958 TCA enjoyed rapid growth in its carriage on the North Atlantic, despite the entry of CPAL into the Canadian North Atlantic market in 1955. TCA enjoyed growth rates of 21 per cent, 17 per cent, 18 per cent, 20 per cent, and 27 per cent respectively in these

years (Table 6.1). It was only at the very end of this period that any major change in its route pattern occurred. On April 2 1958 it opened service to Brussels via London, on May 18 1958 it opened service to Zurich via London, and on May 28 1958 it began a service London-Gander-Winnipeg-Vancouver giving western Canada its first direct service to Europe (Stroud 1962, 433).

The major changes to TCA's services in 1954-1958 were technological. On May 14, 1954 it introduced Lockheed L-1049 Super Constellations between Canada and London (Stroud 1962, 430). This ended the necessity of westbound stops in Iceland and TCA's base there was terminated (Annual Report 1954, 8). In 1957 wingtip tanks were added to these aircraft permitting non-stop Atlantic service to Europe from points west of Montreal (Annual Report 1957, 10).

In 1954 TCA increased its capacity on the North Atlantic simply by replacing 1953's eight weekly North Star Flights during the peak season with a daily service based on use of L-1049s (Annual Report 1954, 8). The L-1049 also permitted TCA to re-establish first class service on the North Atlantic (Annual Report 1954, 9). When tourist class had been introduced in 1952, TCA had converted all North Atlantic North Stars to tourist class by eliminating the lounge, though leaving the number of passenger seats at 40 (McGregor 1980, 43). On introduction, the Super Constellation had nine first class and 54 economy seats, raised the next year to 11 and 55 by the elimination of the lounge (Can. Av. Feb.

1955, 80). The 1954 capacity was thus raised from 640 tourist seats in 1953 to 126 first class and 756 tourist seats for a total of 882 weekly.

In 1955 TCA had eight weekly return flights during the summer peak, reduced to six in winter. As competition in eastern Canada, TCA faced BOAC with eight high season weekly flights, KLM with three, and Air France with four. In western Canada CPAL commenced operations that year offering a single weekly flight Vancouver-Amsterdam. It captured 8 per cent of the transatlantic revenue, reducing TCA's share by 7.5 per cent (Railway & Shipping March 16 1956 no. 1, 15, 56; Can. Av., June 1957, 85). In 1956 TCA's service rose to 10 return flights, in 1957 to 12 flights, and in 1958 to 15 flights (Annual Report 1956, 6; 1957, 11; 1958, 7).

As noted above, in 1955 CPAL was able to begin a weekly service with DC-6Bs, Vancouver-Amsterdam. CPAL presented the route as not only providing a direct service to Europe to western Canadians and residents of the northwestern USA but as a continuation of its Sydney-Vancouver service which would give the residents of Australia the fastest service to Europe in the world (Can. Av. April 1954, 87). The inaugural flight with 10 crew and 43 guests, including President McConachie, left Vancouver June 3 1955 (Can. Av., July 1955, 144). Regularly scheduled service from Sydney to Amsterdam began a week later, June 7. The service took 40 hours (Can. Av., Ap. 1955, 57) and operated via Sondre Stromfjord. In

1956 the Vancouver-Amsterdam service was raised to three weekly flights (Can. Av., July 1956, 68). During 1956 between 7,000 (Davies 1964, 461) and 9,000 passengers (Can. Av., June 1957, 85) were carried between Vancouver and Amsterdam by CPAL. Yellowknife as a permitted traffic point was added in 1956 (McGregor 1980, 67).

In 1955 CPAL expanded its southern operations. A route exchange took place giving TCA part of CPAL's system in Quebec and CPA the Mexico City-Toronto service operated by TCA. CPAL began operating this service weekly in November (Stroud 1962, 431-2).

The second step in CPAL's expansion into Europe occurred in 1957. CPAL had applied in late 1956 for permission to operate a service from Montreal to Lisbon (Can. Av. Dec. 1956, 3). As stated in Chapter V, TCA was only willing to serve Lisbon if Portugal agreed to accept "change of gauge" service but had been refused permission for such an operation by Portugal. CPAL was not restricted by the fact that, in G. R. McGregor's opinion, traffic from Canada to southern Europe did not justify TCA contesting CPAL's application. CPAL contended that sufficient traffic to justify the service would originate on its Mexican service to Toronto, which would then be carried on to the Iberian peninsula (Railway & Shipping March 21, 25, 26, 1957, 272). To encourage South Americans to take this route, CPAL set its Mexico-Toronto fares uneconomically low intending to average this out on the Toronto-Iberia leg (McGregor 1980, 79).

Since an election was approaching and TCA did not contest the application, CPAL was granted its request. TCA had several reasons for not contesting the application. TCA's management was aware that CPAL had ordered long-range aircraft and if it did not use them outside the country its pressure on the government to use them on a transcontinental service would be intense. TCA did not want to get involved in a Press fight with the CPR empire. Finally, it secured the promise of the Government that CPAL would receive no additional points in Europe outside of Iberia in future (McGregor 1980, 79-80).

The government awarded CPAL the right to serve Spain, once an agreement was reached with that country, and Portugal from Toronto <u>and</u> Montreal. Montreal was added to the award by the Minister of Transport when he was convinced by McConachie's argument that "Mexican inflexibility" had denied CPAL Windsor-Mexico City. It was suspected, however, that CPAL had actually promoted the agreement with Mexico, giving CPAL Toronto-Mexico and the Mexican airline exclusive rights Windsor-Mexico, to allow it to subsequently ask the Canadian government for access to Montreal (McGregor 1980, 78.80).

CPAL began its Toronto-Montreal-Lisbon service May 30 1957 with DC-6Bs. Madrid was added to the service on September 6 1957. Its route to South America was completed on September 23 1957 when Santiago, Chile was included in its

services. Buenos Aires had already been added June 1 1956 (Stroud 1980, 432-433). CPAL thus tapped the Latin American market for passage to Iberia at Mexico City, Lima, Santiago,

TABLE 6.2

CPA's Operations on the North Atlantic 1955-1962

Year	Passengers
1955	(1,000)
1956	7,000
1957	14,000
1958	22,000
1959	25,000
1960	28,000
1961	37,000
1962	41,000

Sources: The figure for 1955 is an estimate and the the remaining years are from Davies (1964), p. 461.

and Buenos Aires.

In 1957 CPAL enjoyed a 100 per cent increase in its North Atlantic traffic (Table 6.2). Its number of flights had also doubled from 1956 when it had a tri-weekly service to Amsterdam from Western Canada. In the peak season in 1957 it had a bi-weekly service to Lisbon (Can. Av. March 1957, 68) and a four times weekly service to Amsterdam (Can. Av. May 1957, 59). In 1958 a further increase of 57 per cent was recorded in CPAL's North Atlantic traffic. CPAL became

the third airline to offer turbine service on the North Atlantic when it introduced the Bristol Britannia 314 on June 1 1958 providing non-stop Vancouver-Amsterdam service (Stroud 1962, 433). In 1958 CPAL was able to exchange Yellowknife for Edmonton on its Amsterdam service (McGregor 1980, 37) and began service to Santa Maria, Azores (CPA Air

TABLE 6.3

Canadian North Atlantic Traffic 1957-1964

Year	Canadian Carriers	Foreign Carriers	All Carriers
1957	62,000*	67,804	130,000*
1958	83,000*	85,585	169,000*
1959	89,000*	109,605	199,000*
1960	111,000*	148,625	260,000*
1961	141,000*	173,092	314,000*
1962	150,899	191,815	342,714
1963	157,295	189,107	346,402
1964	190,728	245,089	435,817

Sources: Figures marked * are from Davies (1964) p. 461 or were calculated using his figures. The remainer are from Stat. Can. series 51-201.

News Feb. 1981, 16) on its Lisbon service.

The year 1959 was not a particularly good year for TCA on the North Atlantic. Canadian North Atlantic traffic grew about 18% over 1958 (Table 6.3) but TCA's traffic grew by only about 5% (Table 6.1). Jet aircraft had been introduced

on the North Atlantic by BOAC on October 4 1958 between London and New York and on the Canadian North Atlantic, again by BOAC, in December 1958. The small size of the increase that it managed to secure was doubtless a surprise to the TCA management for it had increased its number of peak season flights by 20 per cent, from 15 to 18 (TCA 1959, 70), and on May 1 1959 had extended its services to Vienna (Stroud 1962, 434).

CPAL was able, with its turbine Britannias, to do better than TCA. Its traffic rose about 14 per cent (Table 6.2).

Domestically 1959 was a sad year for TCA and a happy one for CPAL. Following the 1958 Wheatcroft Report, which stated that a limited amount of competition domestically would not harm TCA and might improve public satisfaction, the new Conservative Minister of Transport, George Hees, who had already shown a preference for introducing transcontinental competition before the report was produced, authorized CPAL to offer one transcontinental flight per day. (McGill 1980, 27-28). The service began May 4 1959 with stops at Vancouver, Winnipeg, Toronto, and Montreal.

CPAL was also again involved in meddling with international bilateral negotiations in 1959. That year the Minister of Transport had considered giving TCA eastern Canada-Hong Kong with CPAL getting Rome in compensation. CPAL, in private talks of its own with Alitalia and the Italian Gov-

ernment, led the Italians to believe that the bilateral was very important to the Canadian government and the Italians escalated their demands. CPAL then approached the Canadian government with the proposition that the talks with the Italians be broken off and, instead of Rome as compensation, CPAL would be given access to London from Vancouver. The Minister refused CPAL London because of the policy against having two Canadian carriers on the same international route. For the same reason, he also withdrew permission, which had been recently granted, for TCA to begin a service from eastern Canada to Japan and Hong Kong. He decided, however, that CPAL would get Rome because they had again been denied London. A bilateral was finally agreed with Italy in November 1959 and CPAL in due course was named to service Rome (McGregor 1980, 113-115).

The naming of CPAL to Rome did not make sense in terms of the fifth freedom rights held by Canada. The bilateral specified that one carrier would be designated by each party and that carrier would be permitted two flights weekly. (Railway & Shipping March 31 1960 no. 3, 304). As a result, CPAL was able to exercise fifth freedom rights between Lisbon and Rome but the fifth freedom rights granted by France in November 1958 between Paris and Rome, and by Italy in 1959 on Rome to Paris, languished since it was TCA that served Paris (Debates 1960 vol. II March 7, 1795, 1850-51).

6.1.3 1960-1973 The Early Jet Age

During the 1960s and early 1970s TCA, which changed its name to Air Canada, and CPAL continued to develop their route systems in an age of prosperity. Both faced challenges from changing technology and greater competition from European carriers.

The year 1960 was an eventful one for Canada's North Atlantic carriers. TCA introduced jet service to Europe but saw BOAC extend its penetration of the Canadian market to Toronto. CPAL was able to begin its operations to Italy.

In 1960 total Canadian North Atlantic traffic grew by about 31 per cent (Table 6.3). TCA was able to enjoy a growth in its passenger traffic of about 30 per cent but CPA, which had not yet introduced jet service, saw its passenger traffic grow by only about 12 per cent (Table 6.1 and 6.2). TCA had introduced DC-8 jets on June 1 (Stroud 1962, 436). In 1960 it operated a mix of Super Constellations and DC-8s, seven flights of the former and seven of the latter (Railway & Shipping March 31 1960 no. 3, 376). On January 4 1961 TCA's North Atlantic service became entirely jet operated (Annual Report 1961, 7).

Air Canada's competitive environment on the North Atlantic changed dramatically on March 1 1960 when, as agreed in the 1959 amendment to the Canada-UK bilateral, BOAC began operating into Toronto. The service to Toronto by BOAC in

1960 would employ a mix of aircraft, 2 Britannias and 2 Comet-4s. As will be discussed in the next section, TCA's response was to enter a pooling agreement with BOAC. This agreement also came into force on March 1 1960 (Stroud 1962, 316).

On March 1 1960 CPAL, using a Bristol Britannia, opened its service to Rome. The initial service was a bi-weekly flight, Montreal-Lisbon-Rome (Stroud 1962, 434).

In 1961 CPAL was able to join the "jet age" and become again fully competitive on the North Atlantic. In that year CPAL enjoyed a 32 per cent increase in traffic compared to a 25 per cent increase for TCA and a 9 per cent increase in total Canadian North Atlantic passenger traffic, calculated on the basis of Tables 6.1, 6.2, 6.3. On April 21 1961 CPAL replaced a Britannia with a DC-8 on Vancouver-Edmonton-Amsterdam and DC-8s were regularly scheduled on the service from April 30. DC-8s were introduced on the service to Rome from June 1 (Bain 1987, 33). CPAL's DC-8s were always referred to as "Super DC-8s", though in the words of Gordon McGregor "A Super DC-8 is an ordinary DC-8 with CPA markings" (Keith 1972, 311).

It was also in 1961 that CPAL almost got access to London. Aware that the 1959 bilateral with the UK permitted Canada to designate more than one airline, CPAL applied on February 20 1961 for a service Vancouver-Calgary-London. It

was approved by the Cabinet on August 17 and the licence was granted by the ATB on August 25 (Bain 1987, 33). As noted in the previous chapter, permission for this service was refused by the British government.

CPAL, as noted in the previous chapter, also made two attempts to get permission to offer a service from eastern Canada to Europe with its propeller-driven aircraft at the lower fare permitted for such aircraft by IATA, but was refused both times by the Cabinet.

During the 1960's TCA continued the steady expansion of its services. For the 1962 peak season, TCA extended its DC-8 service from Cleveland (Ohio) to Toronto on to London (UK) and it also raised its service to Paris to a daily basis. In 1962 it established service from western Canada and Halifax to the UK, both on a bi-weekly basis. That year, however, it suspended its service to Brussels on the grounds that the traffic could not support an economic service (Railway & Shipping Nov. 27-28 no. 4 1962, 366, 428). In 1963 the services from western Canada and Halifax were made tri-weekly. Calgary was added to the western Canadian services. These would now fly: Vancouver-Winnipeg-London; Vancouver-Edmonton-Winnipeg-Prestwick-London; and Vancouver-Calgary-Winnipeg-London (AC Horizons April 1963 no. 256, 1).

In 1965 TCA made a major improvement in its winter services (AC Horizons April 1964, February 1965, October 1965,

April 1971). Back in 1964, although the summer peak saw 25 flights to Europe provided by TCA, there had still been only eight weekly flights in the winter of 1964-1965. In the summer of 1965 a peak of 30 flights was provided, an increase of 20 per cent, but for the winter of 1965-66 service was increased by 100 per cent to 16 times a week. This winter expansion also provided Paris with at least daily service year round.

In 1966 there were two major changes to TCA's North Atlantic operations. In April 1966 TCA was to change its service to West Germany from Dusseldorf to Frankfurt because of operational limitations at the former (AC Horizons Nov. 1965 no. 287, 3). On November 1 1966 Air Canada inaugurated a pooled service to Moscow with Aeroflot with each carrier operating a weekly service. Air Canada's service also included a stop at Copenhagen to pick up and discharge passengers between Scandinavia and Canada, providing the first service by a Canadian carrier to Scandinavia (AC Horizons Oct. 1966 no. 298, 1). By 1966 Air Canada also provided non-stop Vancouver-London services (AC Horizons February 1966 no. 290, 1). In the remaining three years of the decade no major changes occurred in Air Canada's route pattern of service, although that to Brussels was resumed in 1969 (AC Horizons February 1969 no. 326, 13).

From 1962 to 1969 there was usually an upward trend in the number of flights offered by TCA/Air Canada to Europe.

Weekly return flights during the summer peak season rose from 24 in 1962 to 26 in 1963, fell slightly to 25 in 1964, reached 30 in 1965, 37 in 1966, 45 in 1967, 54 in 1968, and

TABLE 6.4

Canadian Scheduled Atlantic Operations 1962-1986

Year	AC	CPA	Wardair
1962	114,000	41,000	
1963	-	-	
1964	145,000	48,000	
1965	150,000	66,000	
1966	232,000	92,000	
1967	285,000	119,000	
1968	316,998	128,000	
1969	293,971	142,220	
1970	413,574	171,530	
1971	371,699	167,167	
1972	584,887	195,297	
1973	655,000	202,000	
1974	682,651	260,988	
1975	600,871	258,685	
1976	658,457	255,877	
1977	739,162	265,534	
1978	737,000	275,000	
1979	850,000	273,000	
1980	801,000	297,000	
1981	739,000	294,000	
1982	714,000	292,000	
1983	690,000	328,000	
1984	811,000	374,000	
1985	876,000	395,000	-
1986	799,000	539,000	164,000

Sources: The 1962 data is from Davies (1964), p. 461, thereafter it is from various of IATA's North Atlantic Passenger Reports and the Appendix to its North Atlantic Charter Study.

59 in 1969 (AC Horizons, various issues). As can be seen from Table 6.4, the most dramatic change in TCA's passenger traffic was, not surprisingly, in 1966 which registered a rise to 232,000 from 150,000 or a 54 2/3 per cent increase. Only in 1969 was a fall recorded, 7.3 per cent, due to the month-long IAMAW strike in that year.

In 1968 G. R. McGregor had finally been permitted to retire. His eventual replacement, whose title would be Chairman of the Board, was a French Canadian lawyer from Quebec City, Yves Pratte (P. Smith 1986, 279).

CPAL enjoyed a steady growth during the 1960s rising from about 41,000 passengers in 1962 to 142,000 in 1969 (Table 6.4). The first major change in CPAL's route pattern came in 1965 when CPA's newly delivered sixth DC-8 allowed the inauguration of a Montreal-Amsterdam-Rome service. This was the result of the April 13 1965 meeting of CPAL, Air Canada, and the Minister of Transport at which it was decided that, while the route patterns of Air Canada and CPAL would remain essentially unchanged, CPAL would be allowed to operate to Amsterdam from eastern Canada and Air Canada could operate to London from western Canada. Although it had been Montreal-Amsterdam which had been agreed at the April meeting, CPAL was also given permission to serve Amsterdam from Toronto. This led to the threat from the Dutch to abrogate their bilateral with Canada. The reason given to the executive of Air Canada for the awarding of Toronto to CPAL was

that the government had decided not to give CPAL more transcontinental rights (McGregor 1980, 151-153).

The death of Grant McConachie, whose personality had done so much to shape CPAL, came of a heart attack in 1965. He was succeeded by A. C. Gilmer.

In March 1967 the Minister of Transport, J. W. Pickersgill, announced the Liberal government of L. B. Pearson had decided that CPAL would be permitted to provide up to 25% of the transcontinental air passenger market. This was the result of the second Wheatcroft Report of 1966 which stated that no economic harm to Air Canada need result from a limited increase in transcontinental competition and that it would lead to an increase in public satisfaction. CPAL could begin increasing its share in 1967 with the 25 per cent maximum share to be reached in 1970 (McGill 1980, 29). While the service was still only between Vancouver and Montreal, Edmonton, Calgary, and Ottawa were added as permitted stops. CPAL took its first step towards this new limit on February 2 1968 when it added a second transcontinental flight daily.

In 1968 CPAL/CPA also extended its European services. On September 9 it began its service to Athens. This year's expansion in service at home and abroad was permitted by the arrival of 4 of the 5 DC-8-63s CPA had on order (Bain 1987, 34). As mentioned in Chapter IV, both carriers were expand-

ing their fleets at this time and Air Canada was also taking delivery of the stretch version of the DC-8.

In 1969 CPA acquired two direct competitors: Olympic Airways of Greece (in April) and Iberia of Spain (Can. Av. June 1969 vol. 42, 13; July 1971 vol. 44, 38).

The early 1970s saw the continued development of the systems of both national carriers. Air Canada, in a pool with CSA, began service to Prague in 1970. Its service was once weekly via Brussels (AC Horizons March 1970 no. 339, 1). The next year saw CPA drop Santa Maria, Azores from its Lisbon services (CPA Air News, Feb. 1981, 16) and add Tel Aviv to its Mediterranean service on April 2 (Bain 1987, 35). When CPA's pattern of flights for June 1971, as recorded in ICAO's Traffic Flow - June 1971, is examined it can be seen that by this date CPA had divided its Mediterranean services into two halves. Flights to Iberia did not continue beyond there. Athens and Rome were both served independently from Amsterdam, and some flights to both centers continued on to Tel Aviv.

On two occasions in the early 1970's, 1970 and 1972, Air Canada witnessed extremely large rates of growth on its North Atlantic services. In 1970 a 19 per cent increase in peak flights, from 59 in 1969 to 70 in 1970 (AC Horizons April 1971 no. 352, 4), witnessed a 41 per cent increase in passenger traffic for the year (Table 6.4 calculations).

Its market share rose from 30.8 per cent to 36.4 per cent (IATA 1976d, 12-13). The explanation provided by Air Canada's 1970 Annual Report attributed the increase to the removal of the United Kingdom's travel allowance restriction and to lower fares. The Paris service itself witnessed a 52 per cent increase over 1969 (AC Horizons April 1971 no. 352, 4).

In 1971, however, Air Canada had found that it could not retain all of the gains it had made in 1970. The 1971 Annual Report attributed about half its 11 per cent decline to dropping one daily flight at the request of a pooling partner, BOAC. It also noted that it had been hit by a rotating machinist strike that July.

In 1972, Air Canada enjoyed an increase of over 50 per cent in its North Atlantic scheduled service (Table 6.3 calculations). The 1972 Annual Report noted that this occurred in the face of an increase in capacity of only 11 per cent. The increase in traffic it ascribes to a variety of reasons; new low excursion fares, a stricter enforcement of government regulations on charter travel, and the widespread publicity given to some cancelled charter flights.

Air Canada remained technologically competitive with the other major carriers on the North Atlantic in the early 1970s and was able to introduce Boeing-747s into service in 1972 both to continental Europe (AC Horizons May 1972 no.

365, 2) and to the British Isles (AC Horizons June 2 1972 no. 366, 6-7). CPA was slower to react on the North Atlantic. Boeing-747s did not join its fleet till the end of 1974 and even then they did not enter North Atlantic service but were used on Pacific and transcontinental services. CPA first used Boeing-747s on the North Atlantic in the summer of 1975. They were initially used only on the Montreal-Rome service, both direct and via Amsterdam (ICAO September 1975d, Flight Stage Tables 450, 456). In 1976 they were introduced on the Amsterdam service from Vancouver via Edmonton (ICAO June 1976c, Table 192).

In the early 1970s CPA was faced with increasing competition on its North Atlantic routes. CPA's share of traffic for the North Atlantic routes it served declined steadily from 1969 to 1973. Calculated on the basis of IATA figures the percentages for 1969 to 1973 inclusive are 56 per cent, 54 per cent, 49 per cent, 43 per cent, and 37 per cent, respectively. After 1973 there was a slight rebound to about a 40 per cent market share. The percentages for 1973 to 1975 respectively are 37 per cent, 39 per cent, and 41 per cent.

The challenge came primarily from Iberia, Alitalia, and KLM. Iberia's traffic rose from 20,000 passengers in 1970 to 91,000 in 1974. Alitalia's traffic rose from 51,000 to 116,000, and KLM's traffic rose from 64,000 to 119,000 (ICAO 1976d, 12-13). By 1972 all three had introduced wide-body

aircraft (ICAO, June 1972d, Traffic by Flight Stage Tables 331, 333, 334) and in the summer of 1974 all three were using exclusively wide-body aircraft on their services to Montreal (ICAO, June 1974d, Traffic by Flight Stage Tables 340-342).

CPA also faced two new entries during this period, both in 1971: El Al on March 28 1971 (Can. Av. April 1971 vol. 44, 94) and TAP. TAP also proved a strong competitor and by 1974 it carried 35,000 passengers (IATA 1976d, 12-13). In June 1974, for example, TAP carried 3,093 passengers between Montreal and Lisbon and Santa Maria compared to 3,889 who flew with CPA. Neither carrier used wide-body aircraft (ICAO, June 1974d, Traffic by Flight Stage Tables 266, 341, 343, 455). CPA also witnessed its competitors gaining access to Toronto, Italy with the 1972 bilateral and KLM with the 1974 bilateral, as discussed in the previous chapter.

After 1971 CPA's successes in expanding its services in the 1970s came primarily at home. In 1977 CPA was given permission to increase its share of the Canadian trans-continental market to 35 per cent and on March 23 1979 the Minister of Transport announced that all restrictions on CPA's participation in trans-continental routes were lifted (Bain 1987, 36). With regard to its European services, CPA began a Toronto-Montreal-Milan-Rome service in 1974 and included Winnipeg as a stop on its services to Amsterdam from western Canada (CPA News Feb. 1981, 15-16).

One other development of the early 1970's, involving both scheduled and charter carriers, was the move by airlines to attempt to develop forward linkages into the tourist market. These efforts were not, however, particularly directed to the North Atlantic.

Air Canada's vice-president of marketing, Y. Menard, developed an ITC program called "Sun Living" targeted for the Florida/Caribbean area in 1971/2 in which the airline guaranteed the performance of all the other tour and hotel people involved in a trip. Menard also became involved in an attempt to acquire a share in a national travel agency even though the Air Canada Act had not been amended at that time to permit such an investment (P. Smith 1986, 301, 308-309). The 1972 investment in Allied Innkeepers (Bermuda) Ltd., which was undertaken with funds advanced by the airline to its parent CNR's subsidiary, C.N. Realties, was simply written off in 1973 (Annual Report 1975, 6). Menard himself resigned under a cloud in 1975 though he was subsequently cleared of any wrong doing by a judicial inquiry (P. Smith 1986, 309).

There was a general move to create companies to operate ABC charters, etc. Air Canada created an affiliated company, wholly owned by CN Realties, to operate ABC charters using Air Canada aircraft and involving Air Canada in planning and operating its ground reception service (Annual Report 1975, 6). In 1974 the original name, Econair Canada

Holiday Ltd., would be changed to Venturex Ltd. having two divisions, an Econair division for charters and a "Canadian Group" for Europe to Canada groups (Annual Report 1974, 6). During the 1970s, CPA also established a subsidiary for travel, Trans Pacific Tours. Wardair was involved in similar activities. In 1972 it had created a wholly owned subsidiary, Intervac, to deal with its operations for the Canadian ABC market and another one, Canada-U.K. Travel Centre, for British originating charters (Wardair 1972).

Between 1972 and 1974 Air Canada and Wardair were involved in arranging the purchase of 1/3 of Wardair by Air Canada. Air Canada was seeking with an alliance with a major charter carrier to strengthen its role in charter market and Wardair sought assistance with financing its acquisition of Boeing-747s. The plan eventually fell through in December 1974 after two years of discussion (AC Horizons Dec 16 1974 no. 425, 1).

6.1.4 1973-1987 Adaption to Changing Conditions

The period from 1973 to 1987 saw Canadian carriers faced with rapid changes in economic conditions and an increasingly competitive market as foreign carriers secured increasingly deep penetration into Canada.

The economic conditions that had shaped service on the North Atlantic were transformed by the events that followed

the 1973 October War in the Middle East. The Oil Blockade of the West, followed by the increases in oil prices introduced by OPEC, simultaneously forced the airlines to raise their tariffs at the same time as demand was being reduced by the development of "stagflation" in the Western economies and by movements in the foreign exchange rates. The airlines initially responded by short-term reductions in the number of flights while continuing to hope for a return to "normal" conditions. When "normal" conditions did not return, both Canadian airlines moved to delete destinations on their operating periphery.

Air Canada responded to the fuel crisis at the beginning of 1974 by a general reduction in the number of its North Atlantic services. During the period Jan. 15 - Feb. 14 1974, for example, it cut its service to Europe by 103 flights while co-ordinating its activities with its BOAC pooling partner (AC Horizons January 17 1974 no. 404, 1). Nevertheless, it introduced a new destination into its European service in June 1974 when it extended its Toronto-Frankfurt service on to Munich for an initial peak service of thrice weekly (AC Horizons May 1 1974 no. 411, 1). This was also the year, as mentioned above, that CPA extended its services to Milan. In 1975 Air Canada introduced a new North American service that would have implications for its transatlantic operations. This was the service to Dallas/Fort Worth and Houston from Toronto begun July 1 (AC Horizons May

1 1975 no. 434, 1). Like the earlier Cleveland service, it was integrated into Air Canada's North Atlantic pattern. In January-May, 1977, a quarter of the Houston revenue traffic would be from passengers routed onward to or from London and the Arab countries and in May the role of this onward traffic would rise past one third of the total (AC Horizons August 1 1977 no. 488, 4). As mentioned above, 1975 also saw CPA improve its service to Amsterdam from Western Canada by adding Winnipeg.

In 1976 both Air Canada and Canadian Pacific moved to curtail their Atlantic operations. Both had seen an actual decline in the total number of their North Atlantic passengers in 1975 (Table 6.4).

In 1976 CPA ceased its operations to Madrid, in the face of the severe competition being offered by Iberia, and to Tel Aviv, the furthest terminus of its transatlantic services (Bain 1987, 36). Although still receiving a portion of all tickets sold through a commercial agreement with Tel Aviv, CPA greatly stepped up its sales activity in the Arab World after suspending its services to Israel and for the first time it issued timetables in Arabic in October 1978 (The Financial Post May 6 1978 13). In 1981 CPA dropped another destination in Europe, Athens. The cessation was intended to be for the winter only (Can. Av. Nov. 1981, 17-18) but service was not resumed in 1982 (ICAO 1982c, Tables 43-50). Not only European routes were being suspend-

ed during this period. In 1976 CPA also ceased its scheduled operations to Mexico because of labour problems and the loss of traffic rights between Mexico City and South America (CPA Air News February 1981, 15). Service was resumed within the year, but only between eastern Canada and Mexico City (ICAO December 1976c, Tables 363-365), and would be entirely suspended in 1981 (ICAO 1982c, Tables 411-412). During this period of contraction in service, CPA did make one addition to its services to Europe. In 1981 Halifax received direct service to continental Europe when CPA introduced a weekly Amsterdam service to acquire the right to carry local traffic between Toronto and Halifax (Can. Av. November 1981, 17-18).

In late 1976 the new President of Air Canada, Claude Taylor, informed the Minister of Transport that from February 1 1977, or the earliest date possible thereafter, Air Canada was suspending service to Shannon, Brussels, Prague, and Moscow (P. Smith 1986, 317). Service to Shannon, as a final destination rather than an intermediate one, continued, however, till Oct. 1, 1979 (AC 1979, 11). On March 26, 1977 service to Vienna was terminated. Air Canada cited insufficient traffic and escalating costs as the reasons (AC Horizons February 25 1977 no. 477, 1). In 1981 Air Canada dropped Copenhagen from February 1 (AC Horizons January 19 1981 no. 567, 1).

During the late 1970s and early 1980s a number of European Airlines also suspended their services to Canada. The first was Olympic in 1977 which dropped its Athens-Montreal-Chicago service (ICAO September 1977c, Tables 393-394). Then, in 1980, both Aerlinte and SAS ceased serving Montreal (ICAO September 1980d, Tables 382, 384). In the April 6th 1980 release disseminated by SAS, it explained its withdrawal of service as due to escalating fuel costs, low yields, changing market conditions, and the limitations of Mirabel Airport which the release states "is virtually isolated from the rest of Canada and transborder US points."

A significant innovation of Air Canada, during the period of absolute decline in North Atlantic traffic from 1979 into the 1980s, was its introduction of "seat sales" into the transatlantic market. Air Canada and BOAC were involved in seat sales on the North Atlantic in the winter of 1979-80 (AC Horizons December 7 1979 no. 541, 1) and in the spring of 1980 (AC Horizons April 30 1980 no. 550, 1).

Seat sales on the North Atlantic have continued and are a major device in air transport competition and airline economics. Seat sales are based on "seat management" and can substantially improve the economic efficiency of scheduled carriers. Daily, weekly, and annual traffic low points can be predicted and the available seats can be offered at the marginal cost of providing the seat. Restrictions on the flexibility of seat use will be imposed to control cost and

other restrictions will be imposed to prevent diversion of traffic from more lucrative fares. Seat sales provide the public with a service that is competitive with charter but has the greater convenience and timing flexibility of scheduled flights. Seat sales can also be a competitive device used against other scheduled carriers. All international seat sales must be approved by the governments of the two countries involved and it has become not uncommon for them to be vetoed by one government or the other, particularly during periods of dispute over aviation or other matters.

The late 1970s also saw the continued introduction of new aircraft by both Canadian carriers on the North Atlantic, as discussed in Chapter IV.

Although the first half of the 1980s on the Canadian North Atlantic was one of uncertainty with regard to demand, it was a period of many new developments.

In 1981 British Airways began operating to western Canada (Air Canada Annual Report 1981, 10). In 1982, however, it suspended its Alberta operations, continuing to serve only Vancouver in western Canada. In 1983 Lufthansa began a Frankfurt-Calgary-Vancouver service (ICAO 1983c, Table 220). In 1985 KLM had received permission to operate into western Canada and by April 1986 was serving Calgary and Vancouver (Official Airline Guide - Worldwide Edition April 1986, 152, 170).

During the 1980s several carriers began, or resumed, transatlantic service to Canada. Air India began transatlantic operations in July 1982 (The Gazette, Montreal, March 1, 1982, A4). Olympic and JAT (Jugoslovenski Aerotransport) began service to Montreal and Toronto during 1984 (Off. Airline Guide December 1984, 1662). Olympic was restoring a suspended service. EL AL and Sabena both had acquired the right to serve Toronto by the end of 1985. Sabena, however, did not immediately begin operations to Toronto (Off. Airline Guide April 1986, 460) though it would subsequently (Off. Airline Guide March 1988, 540).

Air Canada began expanding its European route system after 1982. In 1983 it restored service to Dusseldorf which had been suspended since 1966 (Annual Report 1983, 10). The restoration of this service was assisted by additional fifth freedom rights recently received by Canada. In 1984, again assisted by new fifth freedom rights, Air Canada began a number of services; Paris-Geneva (a new destination), Paris-Zurich and Frankfurt-Zurich (these services replaced the direct service to Zurich offered previously), and Paris-Munich (a new destination) (Annual Report 1984, 5). On January 15, 1985 it began service via London to Bombay and on to Singapore on a thrice-weekly basis (Annual Report 1984, 5). In 1986 it started a service to Manchester and in 1987 one to Vienna (extending the Paris service onward but without fifth freedom rights). It also increased the service to

Bombay and Singapore by a third raising it to four times weekly (Annual Report 1986, 13).

CPA did not change its route pattern to Europe during its remaining years of existence. By 1986 it had, however, significantly increased its frequencies (Bain 1987, 42). Its inauguration of a service Vancouver-Shanghai, the first non-stop service to the People's Republic of China on April 29, 1986 made viable a westbound service from Europe to China. Subsequently service to Beijing and Bangkok would to be added in 1987 (with the airline in its CAI guise) (Bain 1987, 42).

Wardair was first designated as a scheduled carrier in 1984 on the route Puerto Rico-Montreal/Toronto (Annual Report 1984). It did not begin the service until Nov. 5 1985 and even then it was only for the winter season (Annual Report 1985). On May 9 1985, however, it became the third scheduled Canadian airline to be designated for transatlantic service when it was designated as Canada's second scheduled carrier to the UK. It could thus serve Manchester, Prestwick, and London from up to 10 centres in Canada (Annual Report 1985). Wardair began scheduled services to the U.K. in late 1985 and developed them in 1986 during which year it also began scheduled domestic operations (Annual Report 1986). By the Spring of 1988 Wardair would provide transatlantic service from Vancouver, Calgary, Edmonton, Winnipeg, Ottawa, Toronto, and Montreal. In the

early summer of 1988 it also announced that it had been given permission to begin a scheduled service to Paris from October 1988. Another former charter carrier, Nationair, by the early summer of 1988, had also received permission to offer scheduled service to Europe. It operated on two routes, Hamilton-London and Montreal-Brussels (Off. Airline Guide March 1988, 1458-1504, 532).

In 1978 KLM introduced a new concept into service, the provision of extra facilities for full-fare economy passengers. At this point, however, no changes in seating conditions were provided. On October 26, 1980 CPA introduced a similar provision for full-fare economy passengers on both its transcontinental and international service, "Empress Class" (Bain 1987, 38-39). That same year Air Canada introduced "Connoisseur Service" (Annual Report 1980, 9).

The idea of special service for passengers between first class and promotional fares continued to evolve and the three-class cabin aircraft made its appearance with special seating for the "business" traveller. CPA met this in 1983 when it introduced "Royal Canadian Business Class" to its international flights. First class now received fully reclining "sleeperette" seats while the business cabin had former first class seats with their greater hip room (Bain 1987, 39).

Air Canada also introduced different seating for its "business traveller" in 1983, its "Intercontinental Service" with three levels of improved service: First class, Executive Class, and Hospitality Service (Annual Report 1983, 10). In 1982 Air Canada had converted 6 L-1011s and 4 Boeing-747s to the new configuration. First class received fully reclineable "sleeperettes", Executive Class received former First Class seats, and Hospitality Service provided special consideration for the full-fare economy passenger. All three options provided advance seat selection, enhanced meal and service standards, and complementary head sets and beverages (Annual Report 1982, 16).

When Wardair became a scheduled carrier on the North Atlantic and domestically, it felt it had to meet this competition in service levels. In 1986 it introduced a "Big Seat Class" with its own cabin compartment in which no smoking was permitted (Annual Report 1986).

Another form of competition for the business traveller to emerge in the 1980s were "frequent flyer" programs. In 1984 CPA, followed by Air Canada, introduced such a program (Bain 1987, 39). Although intended for the system as a whole, the programs also applied to the North Atlantic. Since both carriers offered them, the programs tended to cancel each other but gave both carriers an advantage over Wardair. Wardair has endeavoured to respond with what amounts to a rebate program.

Both of Canada's two main carriers continued to be involved in services beyond the simple provision of air transport. Air Canada's Venturex became Touram. CPA had its travel subsidiaries. In late 1983 CP bestowed its hotel chain on CPA which ran it as a separate division from January 1984 (Bain 1987, 38). Air Canada acquired a share of the aircraft holding and rental company Guiness Peat Aviation in 1980 (AC Horizons June 13 1980 no. 553, 1). In 1986 Air Canada was associated with Global Travel Computer Holdings as well as Touram (Annual Report 1986). In 1981 CPA created a company in the UK, CP Air Holidays (U.K.), to handle its ABCs and ITCs to North America (Canadian Pacific Annual Report 1981).

Wardair also continued to be involved in providing services beyond that of air transport (Annual Reports, 1975 to 1983). In 1975 it created Wardair Jamaica Ltd. to operate the Trelawny Beach Hotel and in the same year Intervac expanded its concerns by acquiring Travel Fun Tours. Wardair did no better with its Caribbean acquisition than had Air Canada and sold it the next year. Not discouraged by its experience in Jamaica, Wardair then established "Wardair Hawaii" in 1976 and in 1977 negotiated to acquire a one hundred ten condominium apartment complex. Wardair Hawaii did not begin operating till 1980 and even then lost money. The Canadian experience would seem to indicate that airlines should leave the operation of resorts to specialists in that field.

Both major Canadian carriers have interline agreements in areas that they are not serving. In 1986 Air Canada had what it termed a "commercial alliance" with Cathay Pacific, Air New Zealand, and Malev (the Hungarian carrier) (Annual Report 1986). In 1987 it had interline pacts with Cathay Pacific and Japan Air Lines (Annual Report 1987). In 1987 CPA had one with BOAC (Feldman 1987). One interesting example of CPA's co-operation with other airlines was its sale of joint around the world tickets in the 1980s with 6 different carriers: Cathay Pacific, South African Airways, Swissair, Alitalia, Singapore Airlines, Philippine Airlines (CPA July 1986b).

On January 12 1986 CPA reverted to the name used prior to 1968, Canadian Pacific Air Lines (Bain 1987, 40). Then at the end of 1986 it was announced that CPAL was to be purchased by Pacific Western Airlines, a regional Canadian carrier, with the transfer of ownership occurring in 1987. (Bain 1987, 42) The new company was to be known as Canadian Airlines International.

CAI and Air Canada worked out an exchange of routes under government authority, as set out in Chapter V. In line with this agreement, in 1988 Air Canada is to cease operating from Western Canada to Frankfurt and to cease its operations to Munich while CPA is to cease its operations to Lisbon. These routes will then be operated by the other carrier (Information No. 248/87 for release October 5, 1987, 2).

Air Canada intends, by the beginning of the summer in 1989, to begin service to Lisbon, Madrid, Athens, Cairo, and Caracas. It will probably also begin service from western Canada to Dusseldorf to replace its service from western Canada to Frankfurt. CAI, on its part, expects its service to Germany to increase service through its Amsterdam hub (Winnipeg Free Press October 6 1987, 12).

6.1.5 Conclusion

Canada's carriers have displayed their own different styles, particularly during their periods of expansion, as they contributed to the development of a Canadian operated network of services across the North Atlantic. Air Canada has followed a policy of careful expansion where services were opened only in circumstance where it was believed they would show a profit within a reasonable time. Its management has displayed a willingness to reduce services and eliminate destinations which prove not to be economic. It has been technologically progressive, has been aggressive in marketing, and has displayed considerable willingness to enter co-operative agreements with foreign carriers to avoid head to head competition and secure improvements in scheduling and load factors. Its attention to "the bottom line" has resulted in it seeing its original monopoly position slowly whittled away.

CPA, under the leadership of Grant McConachie, used its network on the Pacific and in South America to back its applications to serve destinations in Europe which TCA/Air Canada was not serving because it did not consider it economic to do so. CPA was willing to act outside government channels, whether with Mexico or Italy, to improve its own position and/or to "throw up roadblocks" for its Canadian rival. Once the company had developed its basic route system with access to northern and southern Europe, and after it passed into other hands than those of McConachie, it became much more concerned with "the bottom line". During the crisis of the late 1970s and early 1980s, when the company was fighting for its continued independent existence, it proved willing to abandon the peripheral parts of its system in adverse economic circumstances. The company was hampered in its competitive efforts by its smaller economic resources which, on more than one occasion, forced delays in modernization plans. In part it suffered restrictions on its growth in Canada's domestic market, but it should also be noted that its aggressiveness in the Pacific was not without its costs. It had two "fronts", one facing Europe and one facing Asia, when decisions had to be made about the deployment of new aircraft. The existence of CPA was a testament to the desire on the part of Canadian Pacific, until very recently, to have a share in all the transportation services which affected Canadians, whether they were railroads, ships, airlines, or were electronic in nature.

Ultimately, when that will failed, so did CPA and it passed into other hands. Its successor inherited an extensive system on the verge of constructing a worldwide network, which needed modernization.

The two most recent entrants came by different routes. Wardair took advantage of a change in government attitude to convert an existing system which called itself charter into a system which calls itself scheduled. Nationair took a leaf out of the early approach of CPA and applied for routes, Montreal-Brussels (which Air Canada has twice suspended), and Hamilton-London, which no one else particularly wanted.

The next section will examine one very important aspect of carrier policy, the development of pooling on the Canadian North Atlantic.

6.2 POOLING ON THE CANADIAN NORTH ATLANTIC

In one respect the evolution of the structure of the Canadian North Atlantic market has been completely different from the evolution of the market for air travel between the U.S.A. and Europe. This is in the role that pooling has played in the Canadian North Atlantic market from the time that BOAC got access to Toronto until the 1980s.

The American CAB, although able to approve international inter-carrier agreements where these were not adverse to the

public interest, has almost never done so. They have always been considered as being of such a competition restricting nature that they were against the public interest (McGill 1980, 612-613).

In Europe, the air transport industry was explicitly exempted from the possible operation of any anti-trust provisions of the Rome Treaty of 1957 for an indefinite period in 1962. European carriers have chosen to use the pooling mechanism more than any others in the world with the result that almost all intra-European routes are pooled (McGill 1980, 614, 629). They were thus able to contemplate the use of pools on the North Atlantic but, in the American case, were blocked by the attitude of American regulators.

In Canada there has never been any attempt to challenge any of the pooling agreements legally entered into internationally by one of Canada's scheduled carriers. Air services were brought under Canadian combines legislation when the Combines Investigation Act was amended in 1975 to include services. This Act had permitted agreements which were "reasonable". Agreements between companies are only illegal where they involve an "undue" lessening of competition. If a pooling agreement made by a Canadian carrier was challenged in court it would not have been unlikely that, in the light of Canadian legal precedent, the agreement would be found to be "reasonable". In addition, the airline industry was regulated by a federal regulatory agency, the

CTC since 1967. As a result it was quite likely that the entire industry would have been interpreted in the case of a legal challenge as falling outside the purview of the act. At the very least, any agreement which was not challenged by the CTC would have been likely to be held reasonable (McGill 1980, 611-612). There were thus no legal impediments to the introduction of pooling and the CTC turned a benign eye to the development. In several cases pooling has either been mandated or explicitly permitted in the international bilateral agreements under which service was inaugurated. These were with Israel, the USSR, the Netherlands (in respect of its route to Montreal and/or Toronto), Australia, and Mexico (McGill 1980, 553, 554).

Pooling began on the Canadian North Atlantic in 1960 in response to BOAC getting access to Toronto in that year. Prior to that time BOAC "had been receiving from TCA only polite murmurs to their suggestion of a pooling arrangement on the Atlantic, but this plan assumed a compelling attraction as a means to minimize the revenue diversion now expected" (McGregor 1980, 116). Under this pool, the revenue of the traffic was pooled, there was a joint and united selling appeal to the market, and an exchange of handling and other services. The two carriers jointly determined what the total traffic potential was and what the best schedule to serve the public was. When one of the carriers found itself with a greater demand for its flight than it had seats it directed that traffic to the other. In the

opinion of TCA's president, the concern that, with a pool, there would be a reduction in the incentive of Air Canada to promote its own service, proved unfounded (McGregor 1980, 222-223).

The next pooling arrangement was between Air Canada and Aeroflot, the Soviet carrier which began operations in 1966. In this case the bilateral agreement itself required a pool (McGill 1980, 553).

In 1967 Air Canada and Aerlinte signed a reciprocal agreement to take effect May 1 1967. The two carriers were each to provide half of the capacity, three flights in peak months, and two in the other months. The carriers would review the agreement twice a year examining the flight schedules and advance bookings. Air Canada became Aerlinte's agent in Canada (AC Horizons March 1967 no. 303, 1).

In 1969 Air Canada signed a reciprocal service agreement with CSA for Montreal-Prague. Provision was made for both carriers to operate by intermediate points or to points "beyond" (AC Horizons April 1969 no. 328, 1). In the case of Czechoslovakia, the bilateral itself only required an interline agreement on capacity, subject to government approval, but a pool was preferred by the carriers (McGill 1980, 553).

In 1969 Air Canada, which had ceased operations to Brussels in 1962, resumed this service to Brussels. A pool was formed by Air Canada and Sabena. The pool remained in force when Air Canada's service was again suspended in early 1977. In 1978 Sabena used joint AC/SN flight numbers between Montreal and Brussels (McGill 1980, 542).

In 1969 Iberia extended its operations to Canada (IATA 1976d, 12). Iberia operated not under a bilateral but under a permit which included fifth freedom rights between Montreal and Mexico City. The Canadian-Mexican bilateral provided for pooling between Mexican and foreign air carriers operating between Mexico and Canada and required that the aeronautical authorities be notified where pooling occurred. When Iberia and Mexicana concluded a pool it thus came under this Canadian-Mexican bilateral. Interestingly, CPA was not pooled with either of these carriers (McGill 1980, 544, 618, 629).

In 1971 a Canada-Israel bilateral was signed allowing CPA and El Al to begin operations. The bilateral itself required pooling by the two designated carriers under government approval (McGill 1980, 553). This was CPA's first Atlantic pool. It had been pooled with Qantas on the Pacific since the end of the 1940s, also under a bilateral explicitly dealing with pooling. The Australia-Canada bilateral mandated that, where pooling occurred, it was to be reciprocal (McGill 1980, 554).

In 1973 two new major pools were formed on the Canadian North Atlantic. The first was between Air Canada and Air France. This pool covered not only scheduled services between Canada and France but also charter services to the French Caribbean and any subsequent scheduled services that would be introduced (AC Horizons April 3 1973 no. 385, 1-2). The second pool was with Lufthansa. It initially covered only scheduled traffic but was intended to be extended later to cover charter and air freight services. It was to come into effect on May 1, 1973 and was intended to produce a better distribution of flights during the week through co-ordinated scheduling (AC Horizons May 2 1973 no. 1, 1). The Lufthansa pool agreement coincided with that carrier securing entry to Toronto in the Canada-West Germany bilateral dated March 26, 1973 (Treaty Series 4/1973). The bilateral itself mandated an intercarrier agreement on capacity which was not to be subject to government approval (McGill 1980, 533).

The next pooling agreement was again the result of a bilateral in which another major carrier secured access to Toronto. A new bilateral with the Netherlands was agreed June 17, 1974 (Treaty Series 1975/19). The Dutch received entry to Toronto in exchange for a bilateral provision that the route may only be flown in a pool with CPA. The provision was included at the insistence of the Canadian government to protect CPA's revenue (McGill 1980, 619). As noted

in the previous section, CPA was already losing market share before the agreement permitting KLM access to Toronto was signed, because it had not matched the introduction of wide bodied aircraft.

On February 20 1975 another bilateral was signed, this time with Switzerland, giving its carrier, Swissair, access to Toronto (Treaty Series 1976/13). This route was also pooled between Air Canada and Swissair (McGill 1980, 544).

The revision of the Canada-France bilateral in 1976 also led to a revision of the Air Canada-Air France pool. The new pool covered scheduled passengers initially, with cargo to follow in a year's time. The pool was to be 50/50 and became effective on the day Air France began service to Toronto (AC Horizons April 30 1976 no. 458, 1).

In 1976/77 two more bilaterals were signed which led to the creation of pools between Air Canada and the carrier of the other state. These bilaterals did not, however, involve Toronto, but were made with states whose airlines wished to secure entry to Canada but to which Air Canada did not wish to begin service. The bilateral with Poland was signed May 14, 1976 (Treaty Series 1977/31) and with Finland was signed May 16, 1977 (Treaty Series 1977/32). Both included provisions requiring a government approved inter-carrier frequency and capacity agreement. Air Canada was thus able to secure commercial agreements, "dormant pools", in which it

was able to secure a share of the revenue without being required to begin service (McGill 1980, 619).

By the end of the 1970s, almost all routes flown on the Canadian North Atlantic were pooled. A pool or "dormant pool" existed between Air Canada and BOAC, Air France, Sabena, Lufthansa, Swissair, Finnair, CSA, LOT, and Aeroflot. One had existed with Aerlinte but is not mentioned in the McGill survey of pooling agreements (McGill 1980, 542-545). At the beginning of the 1980s, both Aerlinte and SAS suspended service to Canada, and all scheduled service to both Eire and Copenhagen ceased completely by the mid-1980s. CPA had pools with KLM, Alitalia, and El Al. It did not with Royal Air Moroc, Iberia, and Olympic. In the case of Greece, service was suspended for some time by both carriers, before Olympic restored it on gaining access to Toronto. In the case of Spain, CPA withdrew but Iberia, buoyed by its fifth freedom traffic between Canada and Mexico, remained. CPA also withdrew from Israel but, thanks to the bilateral between Canada and Israel, continued to enjoy a share of the revenue generated by traffic between Canada and Israel.

In 1980 there was a significant change to this pattern. On October 31, 1980 the Air Canada-Lufthansa pool was terminated (AC Horizons December 1 1980 no. 564, 1) although the bilateral requirement of carrier agreement on capacity and frequency remained. Lufthansa was unhappy with the stagna-

tion in its Canadian North Atlantic market and sought access to western Canadian points (Financial Post July 15, 1981). In 1981, to put pressure on Air Canada, it used the requirement that carriers agree on frequency and capacity changes to deny Air Canada a change in its schedule "at the last minute". Air Canada was forced to re-route more than 11,000 passengers (AC Horizons March 31 1981 no. 371, 1). When the Canada-West Germany bilateral was revised, the requirement of inter-carrier agreement on frequency and capacity was removed along with the restrictions on the fifth freedom rights granted to Canada's designated carrier. Lufthansa received access to Western Canada (AC Horizons February 1 1982 no. 590, 1).

In conclusion, pooling has played, and continues to play, a large part in Canadian North Atlantic operations. It has usually acted to the benefit of Canada's carriers and has provided the world's citizens with a greater choice in the number of carriers serving Canada.

6.3 PERFORMANCE OF CANADIAN CARRIERS

Canada's carriers have generally been effective and efficient carriers in the Canadian North Atlantic air transport market. Overall they have been able to keep a joint market share from the 1960's to the mid 1980s of between 40 and 50 per cent, usually above 45%, and they have also generally maintained their load factors above that of most of the

major carriers operating in the entire North Atlantic transport market.

When Air Canada, then TCA, entered the Canadian North Atlantic air transport market it possessed almost the entire market in 1947. However, as foreign carriers entered the market and were able to expand their operations as they expanded their fleets, TCA's market share declined. In 1949 and 1950 it even witnessed a decline in the number of passengers it carried on the North Atlantic, as discussed in Section 6.1.

By 1950, TCA's market share had fallen to between 55 and 70 per cent. Statistics exist giving the North Atlantic passengers using the Montreal gateway in 1950. It was then served by Air France, KLM, BOAC, and TCA. These carried respectively: 1,028, 819, 6,038, and 7,133 for a total of 15,018 passengers (Railway & Shipping May 5 1952 no. 3, 178). Under the licences that existed at this time, Sabena, SAS, BOAC, and Air France also could serve Gander raising the total passengers carried by foreign carriers above the 7,885 carried through Montreal. (The year 1950 also was the first year that a charter carrier played a major role between Canada and Europe, other than as a carrier of immigrants. The Curtis Reid flying service was licensed and began operating on April 30th. Unfortunately its single DC-4 crashed in the Alps after 30 flights). Montreal in 1955 was viewed as providing about 50 percent of Canadian

North Atlantic traffic which suggests the total for scheduled North Atlantic passengers might have have been as high as 30,000 (Railway & Shipping May 31 & April 1 1955, 324-325). TCA itself transported another 10,207 over and above its Montreal passengers for a total of 17,340 passengers on the North Atlantic. The lowest limit for the number of transatlantic passengers is thus 25,225.

Although its market share declined, TCA's load factor rose during 1948-1950. The load factor can be calculated by using the number of scheduled flights made by TCA, a capacity for the DC-4Ms of 40, and the number of scheduled passengers carried on the North Atlantic (TCA 1948; 1949; 1950; 1951). It rose from about 44 per cent in 1948 to about 64 per cent in 1949 and to about 67 per cent in 1950.

During the 1950s TCA enjoyed a steady increase in the number of passengers it transported on the North Atlantic. This amounted to more than a three fold increase between 1950 and 1958.

It is possible to compare the number of weekly flights offered during the summer of 1955 by the major carriers between Europe and Canada. TCA and BOAC both offered eight flights, Air France offered five, and KLM offered three. CPAL began service with one weekly flight that year but it did not appreciably change the share of the market held by Canadian carriers (Railway & Shipping no. 1 1956, 56), Sabe-

na and SAS still did not serve Montreal but continued to be licensed to serve Gander through their New York - Europe flights. Knowledge of the number of flights offered cannot, however, give a clear picture of the balance of passengers carried since many of the transatlantic flights of foreign carriers continued on to points in the United States.

In 1958 Canadian carriers flew 53 per cent of passengers on the Canadian North Atlantic but this fell below half in 1959 to 48 per cent (Railway & Shipping March 30 1960, 301, 302). The situation did not improve in the early 1960's as more overseas carriers entered the market.

Of tremendous long-term importance in determining TCA's competitive position was the entry of BOAC into Toronto in 1960 and the resulting pooling agreement. The pooling agreement gave TCA a very strong base from which to operate, especially since many of its flights to the U.K. continued on to continental destinations.

In late 1962 it is again possible to compare weekly the flight frequencies being operated by various carriers on the Canadian North Atlantic. TCA was offering twenty weekly flights with DC-8s and had just suspended service to Brussels. BOAC, which was pooled with TCA, offered fourteen weekly flights with Britannias and Boeing 707s. Air France had ten flights using Boeing 707s of which four continued to Chicago (and it had fifth freedom rights on this leg) while

four went on to Los Angeles and the last two to San Francisco. KLM had nine flights, three continuing Houston and Mexico City and one continuing just to Houston. Lufthansa had four, all continuing on to San Francisco. Alitalia had three, all continuing to Chicago. Sabena and Swissair were also offering services to Canada as part of their services to North America, and CPAL was offering services to the Mediterranean and to Amsterdam (Can. Av. Dec 1962, 22).

This example makes clear how carriers interwove their route systems at this time to enable themselves to offer reasonably frequent service to more destinations than they could have if they just had used a point to point system. European carriers took advantage of the fact that Montreal lay between Europe and large traffic generating points in the Americas to use it as a topping up point to raise load factors over the Atlantic and to provide much more frequent service to Canada than would otherwise have been possible. TCA and CPAL both did the same thing with regard to many European destinations with the same aircraft serving more than one destination, both Paris and Zurich or Madrid and Rome for example.

The net result was more European aircraft would enter Canadian gateways than Canadian aircraft would depart from them for Europe. This would seem to put the Canadian carriers at somewhat of a disadvantage in competing for market share. On the other hand, a traveller to Canada with a des-

tination other than a gateway designated as being open to a European carrier, or a traveller starting from a point in Canada which was not a designated gateway, would likely find it more convenient to remain with a Canadian carrier than switch mid-route to a European carrier.

TCA's load factor fell from the late 1950s to the early 1960s. In 1958 TCA's load factor was a high 73.1 per cent, and in 1959 it was 71.0 per cent (Railway & Shipping no.3 1960, 352-3). In 1962 it had fallen to 53.8 and in 1963 it was 53.4 (Standing Committee on Railways, Canals, and Telegraph Lines of the House of Commons June 23 1964, 349). The lower load factors, however, were not unique to TCA.

In 1962 and 1963 the overall load factors for IATA carriers were only 52 per cent and 49 per cent respectively (Table 6.5). TCA's load factors were both greater than the average IATA load factor and greater than filled capacity based on passenger seat miles offered by both Canadian carriers, 49.3 and 48.4 in 1962 and 1963 respectively. The opening of the jet age was giving all the North Atlantic carriers indigestion.

Between 1964 and 1975 the share of the Canadian carriers in the Canadian North Atlantic market fluctuated between 40.3 and 51.5 percent of the market, according to IATA data, with the minimum occurring in 1965 and the maximum in 1970 (Table 6.6). The Statistics Canada data for the same period

TABLE 6.5

North Atlantic Load Factors 1960-1986

Year	L.F. IATA	L.F. AC	Rank AC N.Am.	Rank AC All	L.F. CPA	Rank CPA N.Am.	Rank CPA All	L.F. Can. Car.
1960	64.2							62.7
1961	51.2							51.0
1962	51.6	53.8						49.3
1963	49.1	53.4						48.4
1964	57.5							61.3
1965	57.1	65.7	1/4	2/18	60.2	2/4	4/18	60.8
1966	58.8							59.0
1967	57.5							57.9
1968	53.3	53.8	1/4	4/20	52.4	4/4	11/20	51.4
1969	54.4	51.5	3/4	4/21	49.9	4/4	13/20	48.7
1970	55.3	57.4	1/4	4/21	52.7	4/4	14/21	53.8
1971	50.4	48.5	4/4	10/21	55.2	1/4	3/21	48.7
1972	59.6	69.3	2/4	2/21	70.6	1/4	1/21	67.5
1973	57.8							64.7
1974	58.2	66.9	1/4	3/21	64.4	2/4	5/21	64.2
1975	57.4	59.1	2/4	10/20	61.8	1/4	7&8/20	58.1
1976	60.8	68.9	1/4	2/21	61.4	2/4	12/21	61.0
1977	60.7	63.8	2/4	6/21	65.4	1/4	4/21	63.5
1978	66.0	60.7	4/5	17/20	68.9	2/5	4/20	62.5
1979	67.4	64.3	4/5	18/20	74.8	1/5	2/20	66.2
1980	66.8	66.9	5/7	13/20	71.7	2/7	6/20	68.2
1981	69.3	69.1	3/6	12/20	80.7	1/6	1/20	
1982	67.4	66.5	5/6	14/20	79.4	1/6	3/20	
1983	69.8	70.6	3/6	13/20	81.6	1/6	2/20	
1984	70.9	74.7	3/6	6/20	79.3	1/6	3/20	
1985	67.7	73.0	3/8	6/20	76.6	1/8	3/20	
1986	62.5	68.8	2/8	6/20	71.2	1/8	4/20	

Sources: Canadian carrier load factors are from Stat. Can. series 51-002, load factors and rankings for Air Canada and CPA prior to 1978 are from an annual series of articles on the North Atlantic in Aviation Week and Space Technology which reproduced IATA statistics, and the remaining data are from IATA's World Air Transport Statistics (various years) and North Atlantic Passenger Reports (various years).

Note: In 1986, Wardair's first full year of operations, Wardair had a load factor of 72.0 but did not appear in the top twenty airlines in terms of traffic volume.

TABLE 6.6

Canadian Scheduled Market Share 1957-1986

In Percentages

Year	(Stat. Can.) Can. Carriers	(IATA) AC	CPA	Wardair	All
1957	55.2				
1958	53.5				
1959	48.1				
1960	45.4				
1961	41.6				
1962	44.1				
1963	45.4				
1964	43.8	34.1	11.3		45.4
1965	46.3	28.0	12.3		40.3
1966	45.5	34.0	13.5		47.4
1967	42.2	31.1	13.0		44.1
1968	50.0	35.8	14.6		50.4
1969	52.6	30.8	14.9		45.7
1970	47.2	36.4	15.1		51.5
1971	50.8	32.3	14.5		46.8
1972	50.3	36.3	12.1		48.4
1973	47.9	35.4	10.9		46.3
1974	46.8	32.5	12.4		44.9
1975	44.6	30.2	13.0		43.2
1976	44.8	33.2	12.0		45.2
1977	47.5	32.2	12.0		44.2
1978	44.7	32.8	12.2		45.0
1979	46.6	35.3	11.3		46.7
1980	48.6	35.4	13.1		48.6
1981	47.3	33.7	13.4		47.1
1982	51.9	34.6	14.1		48.7
1983	47.9	32.2	15.3		47.5
1984	49.4	33.3	15.3		48.6
1985	48.7	33.1	14.9		48.0
1986	51.1	29.7	14.7	6.1	50.5

Sources: Statistics Canada materials series 51-201 and 51-002, unreleased material from the Aviation Statistics Centre, Transport Division, Statistics Canada and IATA (1976d) and IATA (1980b; 1984b; 1986b).

record shares of between 42.4 and 52.6 percent with the min-

imum occurring in 1967 and the maximum in 1969 respectively. There are a number of differences in particulars between the two sets of statistics. The two series agree, however, that 1967 was a relatively poor year for the market share of Canadian carriers. Both carriers were suffering delays in aircraft delivery at a time of exceptionally high demand. They also agree that 1968 to 1972 were good years for the market share of Canadian carriers. IATA records three years with the Canadian share over 48 percent and Statistics Canada records four years with a market share over 50 during that five year period.

Both the series based on IATA and Statistics Canada material agree that there was a decline in the share of Canadian carriers from 1972, the last year before the first oil crisis, to 1975. They also agree that the years 1979-1980 were a period of recovery. During 1981-1986 they agree that, except for a slight and brief decline in 1981, Canadian carriers retained the gains made in 1979-1980 and have held close to 50 per cent of the scheduled North Atlantic market. In 1986 the entry of Wardair pushed the market share of Canadian carriers clearly over 50 per cent of the market.

During the entire period 1957-1986 Canadian carriers have generally been able to maintain a share of over 45 per cent. According to Statistics Canada data, Canadian carriers maintained a consistent share of over 45 per cent period except

during the years 1961-1967 and 1975-1978. According to IATA data, which is only available from 1964, Canadian carriers maintained a consistent share over 45 per cent except during 1964-1967 and 1974-1977. During 1961-1967, Canadian carriers were initially adjusting to the introduction of jet service and then were suffering delays in aircraft delivery. The second period tends to correspond with the period of

TABLE 6.7

AC and CPA vs. their Regional Competitors 1964-1975

Percentage Market Shares

Year	CPA	AC
1964	47.5	44.8
1965	51.6	36.8
1966	53.8	45.3
1967	56.4	40.4
1968	59.7	47.4
1969	55.5	42.1
1970	53.8	50.6
1971	48.7	46.0
1972	45.2	49.5
1973	37.4	49.9
1974	39.2	47.6
1975	41.0	44.7

Source: IATA (1976d).

adjustment to the oil crisis.

In Table 6.7, it is possible to follow the share that CPA and Air Canada each had in their own market sectors for the period 1964-1975. CPA, Alitalia, El Al, Iberia, KLM, Olympic, and TAP are considered to form one sector.

Air Canada and the other airlines serving Canada on the North Atlantic are considered to form the other sector. During this period Air Canada kept a fairly consistent market share. The year, 1965, shows up strongly as a trough in Air Canada's sector share, but there is a disagreement (Table 6.6) over the market shares held by Canadian carriers between IATA and Stat. Can. statistics. If this year is omitted as subject to dispute, there remain only two years showing major troughs, 1967, EXPO year, and 1969, during which Air Canada suffered a major strike. Otherwise Air Canada kept between 44.7 and 50.6 per cent of its market sector and in the period 1968 to 1973 held between 46 and 51 per cent.

CPA did much better than Air Canada during the first part of the period, to 1971, but worse than Air Canada following 1971. During the latter period it was using narrow-body aircraft to compete with wide-body aircraft and had suffered the entry of four more competitors into its market segment. During 1964 to 1971 CPA enjoyed between 47.5 and 59.7 percent share of its market sector but from 1972 to 1975 that share fluctuated between 45.2 and 37.4 percent. In 1973-1975 CPA held a share of only between 37.4 and 41.0 percent of its sector.

After 1975 it is only possible to follow Air Canada's and CPA's shares of the total market. Air Canada has consistently held about 33 per cent of the market. In the eleven years, 1976-1986, it held between 32 and 34 cent of the market in eight years. It's share has shown no particular trend, reaching it's high at 35.3 per cent in 1979 and it's low at 29.7 per cent in 1986. CPA has held between 12 and 15 per cent of the total market. After holding only about 12 per cent of the market during 1974-1979 it began to improve in 1979 and 1980 and during 1982-1986 it held between 14.1 and 15.3 per cent of the market. In 1983 and 1984 it held its largest share of the North Atlantic market during the entire period 1964-1986, passing its previous high of 15.1 per cent in 1970.

During recent years, Canadian scheduled carriers as a group have clearly outperformed American carriers as a group in obtaining market share on the North Atlantic. Since 1978 Canadian carriers have had up to a nine percentage point greater share of the Canadian North Atlantic market than North American carriers as a group have held of the North Atlantic market as a whole, and the difference has never been less than 2 percentage points.

The Statistics Canada load factors and the IATA load factors (Table 6.5) are not strictly comparable because the former is calculated on passenger miles vs seat miles instead of on seats and passengers. The former is likely to

TABLE 6.8

Scheduled North Atlantic Market Share

Canadian Share On the Canadian North Atlantic
VS
North American Share on the Overall North Atlantic

Year	Canadian Carriers	North American Carriers
1978	44.7	39.7
1979	46.6	41.2
1980	48.6	40.8
1981	47.3	40.2
1982	51.9	42.9
1983	47.9	44.2
1984	49.4	46.1
1985	48.7	46.6
1986	51.1	44.2

Sources: Table 6.6 and IATA (1986b), Table B4.

be somewhat lower. A passenger may cross the Atlantic on a flight and may have joined the aircraft at an intermediate point, an eastbound passenger may board in Montreal on a Toronto or Vancouver originating flight. He may also disembark at an intermediate point instead of at the final destination, e.g. in London instead of Frankfurt.

The average load factor of IATA carriers on the North Atlantic, and the load factor for all Canadian carriers, show similar trends during the period 1960-1979. Both experienced a steep decline following the introduction of

jet aircraft in the early 1960s. Both recovered considerably for 1964-1967. There was another drop in 1968-71, and a recovery in 1972 that lasted past 1980. Canadian carriers had lower load factors in 1960-1963, 1968-1971, and 1978-1979. They performed better in 1964-1967, 1972-1977, and 1980. They performed remarkably better in 1972-1974. Overall, Canadian carriers performed better in 11 of the 21 years, considerably better in three of them, and considerably worse in only one, 1969.

Air Canada/TCA has usually performed better than the average IATA load factor throughout the entire period 1960-1986 (Table 6.5). The only years this was not true were 1969 and 1971 at the end of 1960s and start of the 1970s and 1978, 1979, 1981, and 1982 at the end of the 1970s and start of the 1980s. It was more than five points higher than the IATA average in 1965, 1972, 1974, 1976, 1985 and 1986.

It is also possible to rank Air Canada and CPAL/CPA with the major air carriers on the North Atlantic in a number of periods since the mid 1960s: 1965, 1968-1972, 1974-1977, and 1978-86. In 1965 Air Canada and CPAL ranked first and second of the four North American carriers operating on the North Atlantic, the other two being PAA and TWA, and second and fourth of the 18 major IATA carriers on the North Atlantic. In 1968-1972 Air Canada's rank amongst North American carries on the North Atlantic fluctuated, but was first in two out of the five years and second in another year. In

the wider context, of the 20 to 21 major IATA carriers on the North Atlantic Air Canada did consistently well, ranking fourth from 1968 to 1970, falling to tenth of 21 in 1971, and recovering to second in 1972. CPA did poorly from 1968 to 1970, ranking last amongst the North American carriers and in the bottom half of all carriers, but improved dramatically for 1971 and 1972 ranking first amongst all North American carriers in both years and third and then first respectively of all carriers.

In 1974 to 1977 Air Canada and CPA did very well. They ranked first and second of the four North American carriers throughout, each being first twice. Air Canada was in the top third of major carriers for three of the years, and in the top half for the fourth. CPA was in the top half for three of the four years.

CPA did superbly from 1979 to 1986. It ranked first of the major North American carriers in every year except 1980. It also did well overall, ranking fourth or higher except in 1980 when it fell to sixth. It was first in 1981 and second in 1979 and 1983.

Air Canada does not show up particularly well during the early part of the period 1979-1986, though its performance improved later. It ranked fourth and fifth of the American carriers in 1979 and 1980, and was behind both PAA and TWA in 1979 and PAA in 1980. In 1982 it also ranked fifth, oth-

erwise it has ranked third or fourth except in 1986 when it rose to second. Its ranking overall was also quite poor until recently. It was in the bottom half of major IATA carriers until 1984, but in 1984-1986 it achieved the position of sixth out of twenty.

In 1986 Wardair had a load factor of 72.0 per cent, above that of both Air Canada and CPA, but it was not one of the top twenty carriers in size and so is not ranked in Table 6.5. In 1986, on the basis of the first eleven months of operation, Wardair ranked second of the top thirteen North American carriers with a load factor of 72.1 with CPA and Air Canada following immediately behind with load factors of 71.3 and 68.8 respectively. Out of the top thirty-five major carriers it ranked eighth, with CPA ranking eleventh and Air Canada ranking fourteenth. Many carriers, which are below the top twenty in size and which have high load factors, are either airlines of communist countries or operate only on one or two city pairs which have a very high demand (Aviation Week and Space Technology March 9 1987, 208).

In conclusion, Canada's scheduled carriers have performed well both in keeping close to half of the Canadian North Atlantic in Canadian hands and in keeping their load factors, which reflect their ability to use their resources effectively, at close to, or a little above, industry standards for major carriers. Air Canada performed relatively well in regard to its load factor compared to other carri-

ers, except during the period 1978-1983. CPA generally performed adequately, except briefly in the mid 1970s, and has performed very well since 1977. Wardair, only a scheduled carrier since late 1985, is performing very well but this is not surprising since it remains predominantly a charter carrier with the flexibility that implies, and, in fact, its scheduled services are to an area that it was serving on a relatively regular basis as a charter carrier.

6.4 CONCLUSIONS

Canada has benefitted from the fact that its two major North Atlantic carriers evolved with different institutional bases and business philosophies during their early years. Both carriers later showed flexibility in changing their route patterns in response to changing economic circumstances. Canadian carriers have demonstrated technological progressiveness when that is economically possible. They have also shown a willingness to initiate, copy, and develop new marketing strategies when appropriate. The willingness of both carriers to use pooling agreements has prevented wasteful competition and provided a wider range of transatlantic destinations served by direct flights than might otherwise have existed. Overall, Canada's carriers have ensured that close to half of all transatlantic scheduled passengers travel on Canadian aircraft and in doing so have generally been able to keep their load factors near or above the industry average for major carriers. The next chapter will look at the role of the charter market on the Canadian North Atlantic.

Chapter VII

THE ROLE OF THE CHARTER MARKET

Charter traffic was very favourably placed to take advantage of the high income elasticity of demand for air transport on the transatlantic routes, the high price elasticity of demand for discretionary travel, and the affinity of the populations. Further, it was also to be the beneficiary of aircraft and marketing innovations.

This chapter is composed of three sections which examine the evolution of charter traffic between Canada and Europe. The first section outlines the history of the market. It will primarily study the period since the early 1960s when this form of travel became important on the Canadian North Atlantic and will only comment briefly on the earlier period. The second section examines the role that Canadian carriers have played in this development, concentrating on Wardair. The third section looks at the explosion in Inclusive Tour Charter (ITC) travel, which occurred at the end of the 1960s and in the 1970s, and its implications for the North Atlantic market.

7.1 THE HISTORY OF THE CHARTER MARKET

The passenger charter market on the Canadian North Atlantic came into existence in the same year as the scheduled market. After a brief period of importance in assisting immigration to Canada following the Second World War, it dwindled almost to nothing until the arrival of the jet age. During the 1960s and early 1970s it grew in importance. At the start of the 1970s it reached about 40 per cent of total traffic on the Canadian North Atlantic. By the mid-1980s, charter traffic had declined somewhat in relative importance. It, nevertheless, continued to provide about a quarter of the total market for passenger services on the Canadian North Atlantic. It has not dwindled into relative insignificance as has happened generally on the North Atlantic.

7.1.1 The 1940s and 1950s

The charter traffic between Canada and Europe was quite different in the late 1940s and early 1950s than it was later. A large proportion of charter passengers during the earlier period were part of post-war immigration to Canada from Europe and their flights were organized by either the Canadian federal or a Canadian provincial government. In the later period most of the charter passengers were tourists.

In the late 1940s and early 1950s, TCA was active on the North Atlantic as both a major scheduled carrier and a major charter carrier. It was particularly active in 1947-1949 and 1951-1952. In 1947 the Province of Ontario began a program of chartering flights for immigrants from the United Kingdom and the contract was taken up by the Dominion government in 1948 (Annual Report 1947, 9; 1948, 11). This first program of government chartered immigration flights ended in 1949, but in December 1950 a new federal program was begun to carry 10,000 immigrants from the UK to Canada in 1951-1952. The last 3,000 travelled in the first four months of 1952 (Annual Report 1952, 8). The end of this program was the end of large scale charter traffic by Canadian carriers on the Canadian North Atlantic for a decade.

TCA (Atlantic) Ltd.'s operations are summarized in Table 7.1. Having insufficient aircraft in 1947, TCA was forced to subcontract a considerable amount of charter traffic to Transocean Air Lines. After 1947 it did not need to do so, having expanded its fleet. Charter traffic, as shown, composed a sizeable, if variable, proportion of its services.

Canadian Pacific Air Lines was also deeply involved in charter traffic from 1951 to 1954. In 1951 the total of CPAL's revenue passengers increased from 4,752 to 11,679 (Stat. Can. 1951e). This increase of 146 per cent was primarily due to charter traffic and it was not until 1954 that its total of passengers travelling on unit toll fares,

TABLE 7.1

TCA (Atlantic) Ltd. Traffic 1947-1951

Year	Atlantic Scheduled	Caribbean Scheduled	Total Scheduled	Atlantic Charter
1947	14,393		14,393	1,422 + 4,450*
1948	23,429	2,951	26,380	6,441
1949	21,872	11,543	33,415	3,097
1950	17,340	14,952	32,292	409
1951	(21,200)	(21,100)	(42,300)	7,611

* Subcontracted To Transocean Air Lines

Source: TCA (1947-1951) The bracketed figures are estimates based on stated rates of change.

14,334, passed the number travelling on bulk fares, 9,393 (Stat. Can. 1954e). CPAL's focus, however, was on the Pacific rim where it was involved in the movement of American military personnel due to the Korean War. CPAL's entry into the North Atlantic market in 1955 occurred in the same year that it faced a dramatic drop in its charter traffic, from 9,393 to 2,577 passengers (Stat. Can. 1955e). CPAL, in spite of the regulations then in force regarding charter carriage, had been allowed to mix scheduled and charter passengers on its North Pacific flights because of the importance of its services to the United Nations/American military effort.

During the 1950s, there was one attempt by a Canadian carrier to start what, for the time, was a major charter service between Canada and Europe. The Curtis-Reid Flying Service acquired a DC-4 and began offering charter services on the North Atlantic on April 30th, 1950. This ended, however, after 30 flights when its DC-4 crashed in the Alps (Can. Av. 50th Anniversary Issue, p. 27).

As can be seen in Table 7.2, after the sizeable charter

TABLE 7.2

Bulk Traffic carried by Canadian and Foreign Carriers 1952-1959

Year	Foreign Carriers	Canadian Carriers	TCA	CPA	Total
1952	7,054	9,934	160	9,774	16,988
1953	5,437	9,705	123	9,582	15,142
1954	5,412	9,929	536	9,393	15.341
1955	4,006	3,305	728	2,577	7,311
1956	2,652	1,671	696	975	4,323
1957	2,663	2,471	595	1,876	5,134
1958	814	2,666	1,040	1,626	3,480
1959	717	3,858	2,522	1,336	4,575

Source: Stats. Can. series 51-202

movements at the start of the 1950s, there was very little charter activity on either the Atlantic or Pacific. It is not possible in Canadian government statistics to isolate

the amount of charter activity that occurred on the North Atlantic from that occurring on the Pacific or to the Caribbean.

Charter traffic began to increase in 1960. The number of charter passengers carried by foreign carriers rose from 717 in 1959 to over 10,000 in 1960 (Stat. Can. 1960e). This rise occurred as piston aircraft began to be replaced by jet aircraft on the North Atlantic.

The above totals for bulk passengers should be treated with considerable caution since they record only those flown by a limited number of carriers. They serve, nevertheless, to indicate trends. During this early period, when the number of airlines active on the North Atlantic was less than in later years, and when most charter passengers were still carried by scheduled IATA carriers, these statistics are more likely correctly to indicate trends than later corresponding figures.

7.1.2 The 1960s

The 1960s witnessed the steady growth of the new tourist oriented charter market. By 1961 there were 42,453 passengers flying charter travel between Canada and Europe producing a revenue of Cdn $5.3 million (Saarty 1969, 292). There had already been a dramatic increase in traffic from 1959 when almost no charter traffic was recorded. The Canadian

North Atlantic charter market continued to expand rapidly throughout the 1960s. By 1969 revenue had increased more than tenfold to $55.8 million and close to 600,000 passengers crossings were flown on charter services. Traffic increased very rapidly in 1961-1964, slowly in 1964-1965,

TABLE 7.3

Charter Revenue and Traffic on the North Atlantic

1961-1969

Revenue in $Cdn Millions, Passengers in Thousands

Year	Revenue		Passengers	
	Total	Can. Orig.	Total	Can. Orig.
1961	5.3		42.5	40.5
1962	8.5		67.9	60.0
1963	12.9		113.2	94.9
1964	18.8		158.9 (163)	126.8
1965	21.5		174.6 (170)	139.4
1966	27.0	15.3	219.4 (212)	163.2
1967	31.3	17.7	265.6 (252)	147.7
1968	36.7	26.3	353.2 (352)	229.1
1969	58.6	41.6	593.0 (575)	

Sources: The totals for revenue and passengers for 1961-1968 are from Saarty (1969) p. 292. The bracketed totals are from IATA (1976d). The figures for Canadian originating revenue are Canadian government figures quoted in Wardair (1966, 1967, 1968, 1969). The 1969 totals for revenue and passengers are Canadian government figures quoted in Edwards (1970).

and then rapidly in 1965-1969 (Table 7.3).

Canadian originating passengers provided the largest proportion of traffic during the period. Their share, though, gradually declined from about 95 per cent in 1961 to about 75 per cent in 1966. It dropped sharply in 1967, as Canadians stayed home and Europeans came to experience EXPO 67 and other centennial celebrations, but then recovered to about two-thirds of the market in 1968. The proportion of revenue supplied by Canadian travellers remained about the same in 1969 as in 1968.

During the 1960s, the nature of the carriers providing charter services on the North Atlantic changed. The Canadian market followed the general pattern for the entire North Atlantic charter market between North America and Europe, as shown in Table 7.4. In 1964 about 80 per cent of both the Canadian and the entire North Atlantic market were carried by IATA, that is by scheduled carriers. By 1969 the proportion in both markets was only 37 per cent. During the period 1964-1969, the percentage carried by IATA carriers in the Canadian market tended, however, to be lower than in the entire market and it was also more volatile.

In 1961, when there were 42 thousand charter passengers on the Canadian North Atlantic, charter passengers formed about 12 percent of the total of all air passengers on the Canadian North Atlantic. By 1964 IATA statistics indicate that almost 28 per cent of the traffic on the Canadian North Atlantic was travelling by charter (Table 4, Appendix).

TABLE 7.4

Percentage of Charter Traffic Carried by IATA Carriers

1964-1975

Year	Canadian North Atlantic	All North Atlantic
1964	80.4	80.9
1965	67.6	71.5
1966	53.3	62.7
1967	40.5	50.0
1968	29.0	40.0
1969	37.0	37.1
1970	35.0	33.6
1971	38.4	33.7
1972	40.0	41.2
1973	39.6	45.5
1974	31.4	37.0
1975	35.8	40.1

Source: IATA (1976d)

This percentage was lower in 1965-1967 but regained that level in 1968 and was well over a third of the market, approaching 40 per cent, in 1969.

The charter market became more important to travellers in the Canadian North Atlantic market than in the entire North Atlantic market by 1962. Between 1963 and 1969, the percentage of all air passengers travelling charter was consistently 5 to 12 points higher in the Canadian North Atlantic market than in the total North Atlantic market.

7.1.3 The 1970s and 80s

The volume of charter traffic on the Canadian North Atlantic showed considerable instability during the 1970s. Statistics Canada data shows increases in four years, decreases in five, and approximately no change in one. Traffic peaked in 1975, but the volume of traffic in 1980 was only slightly larger than that in 1971.

The decline in charter traffic in 1972 corresponds to an increase in scheduled traffic on the Canadian North Atlantic of approximately 40%. Both events are explained by the fact that in 1972 the index of the average scheduled fare on the North Atlantic, as calculated by IATA, hit its lowest point ever (IATA 1975c).

The next decline in charter traffic was in 1974, during the first oil crisis. Nevertheless, both the volume of scheduled traffic and total traffic increased this year. In 1975 the roles of charter and scheduled traffic were reversed, with scheduled traffic declining and charter and total traffic increasing.

According to Statistics Canada data, a period of decline began in 1976 and lasted through until 1980. Only in one year, 1980, was there also a decline in total Canadian North Atlantic traffic. IATA data, however, note a brief rebound in charter traffic in 1979.

TABLE 7.5

Charter Passengers on the Canadian North Atlantic

1970-1986

Year	Canadian '000s	Originating %	European '000s	Originating %
1970	434	66.5	219	33.5
1971	519	67.3	252	32.7
1972	463	64.3	257	35.7
1973	442	53.1	260	46.9
1974	396	51.8	370	48.2
1975	575	59.8	387	40.2
1976	540	57.6	441	42.4
1977	510	54.8	421	45.2
1978	471	53.7	405	46.2
1979	431	49.2	445	50.8
1980	305	40.0	458	60.0
1981	291	38.0	474	62.0
1982	427	48.7	450	51.3
1983	583	63.7	332	36.3
1984	610	64.3	337	35.7
1985	758	71.4	304	28.6
1986	587	63.8	333	36.2

Sources: Stat. Can. 51-207

The relative importance of Canada as a place of origin for charter travellers on the Canadian North Atlantic declined during the 1970s (Table 7.5). In 1973 there was a sharp drop in the percentage of those travelling charter on the Canadian North Atlantic who were of Canadian origin. This was primarily due to a fall in Canadians travelling charter rather than to an increase in Europeans. The 1973 decline in Canadians travelling charter was not, however,

due to any overall decline in Canadians travelling to Europe. There was a 23 per cent increase in the total number of Canadians travelling to Europe that year (Table 11, Appendix).

A further decline in the percentage of Canadian origin occurred in 1974, when an 8 per cent fall in Canadian and a 42 per cent rise in European charter passengers occurred. The percentage fall in Canadians travelling charter was larger than the percentage fall in Canadians visiting Europe. The increase in Europeans travelling charter was considerably higher than the overall 10 per cent increase in direct European visitors.

In 1975 there was a large scale return of Canadians to charter carriers, but this proved temporary. During 1976-1981 there was a decline in the volume of Canadian origin charter travellers. The total number, however, of Canadians visiting Europe continued to rise until 1977 and after 1977 the decline in the number of Canadians travelling charter was steeper than the overall decline in number of Canadians visiting Europe, through to 1981.

European origin charter traffic tended to move in line with, or somewhat below, the number of European visitors arriving directly during the second half of the 1970s. It was distinctly lower in 1978 and 1979. In 1978 European originating charter traffic fell four percent while the num-

ber of Europeans arriving direct rose 10 percent. In 1979 European charter traffic rose 10 percent at the same time as direct European arrivals rose by 18 percent.

European charter travellers passed Canadian charter travellers in absolute importance in 1979 and remained in the lead for four years. The increase in the absolute number of Europeans travelling was insufficient to make up for the decline in Canadian travellers.

In summary, during the 1970s Canada became less important, relative to Europe, as an origin for charter passengers on the Canadian North Atlantic. There was also a trend among Canadians away from charter travel during the entire period. In the first half of the 1970s there was a move by Europeans toward charter travel, particularly in 1974. In the second half of the 1970s there tended to be a move by Europeans away from charter travel to Canada.

It was during the period, 1977-1982, that Canadian Carriers gained control of this market, as discussed in Section 7.2.

In the 1980s, according to the statistics kept by Statistics Canada, there was a steady increase in the total number of charter passengers from 1980 to 1985, with a decline in 1986. IATA statistics tell a different story (Table 3, Appendix). They record an increase in charter traffic for the period 1980-1983 and a steady and strong decline in the

period 1984-1986. Since the number of scheduled passengers in the two series continue to move together, this divergence cannot easily be explained. During the period 1984-1986, the Statistics Canada data will be preferred, on the assumption that the Canadian government is in the best position to keep track of Canadian arrivals and departures.

Following the figures produced by Statistics Canada, the proportion of passengers who were of Canadian origin, which declined during 1975-1981, increased during 1981-1985, though it again declined somewhat in 1986. The number of passengers of European origin rose in 1980 and 1981, fell in 1982 and 1983, rose slightly in 1984, fell in 1985, and rose again slightly in 1986.

In the four years from 1982 to 1985 inclusive, there was a marked return of the popularity of charter services amongst Canadians visiting Europe. The increases for the number of Canadians travelling to Europe were 2 per cent, 17 per cent, 18 per cent, and 16 per cent, respectively while the percentage increases for charter passengers of Canadian origin were 46 per cent, 36 per cent, 5 per cent, and 24 per cent. During 1982-1985, there was thus a 66 per cent rise in the number of Canadians visiting Europe and a 160 per cent rise in the number of charter passengers to Europe of Canadian origin.

In 1986, the number of Canadian-origin charter passengers fell despite a rise in Canadian travellers to Europe. This was also the year that Wardair for the first time could service its main transatlantic destination, Great Britain, as a scheduled carrier for the entire year rather than as a charter carrier. No conclusions as to continuing popularity of charter with Canadian travellers to Europe, therefore, can be made on the basis of 1986.

Between 1976 and 1985, there were relatively few years that the percentage change in the number of Europeans directly visiting Canada, and the percentage change in number of European-origin transatlantic charter passengers, did not correspond to within three percentage points. Exceptions were 1978, 1979, 1983, and 1985. In 1978 there was a 10 per cent rise in directly arriving European visitors while European charter passengers declined by 4 per cent. In 1979 European direct arrivals increased by 18 per cent while European charter passengers increased by only 10 per cent. In 1983 direct arrivals declined 12 per cent while charter passengers declined 16 per cent. In 1985 direct arrivals declined 3 per cent while charter passengers declined 10 per cent. Overall there was thus a continued overall trend by Europeans away from charter.

In 1986 the number of European originating charter passengers increased, unlike the picture for Canadian originating passengers, despite the fall in the overall charter

capacity being offered. The 1980s thus saw a continuation of the trend away from charter by Europeans with the trend by Canadians away from charter showing some reversal.

Charter, up to the end of 1986, retained at least 25 per cent of the total market for air transport between Canada and Europe while the share for the entire North America to Europe market has fallen to below 10 per cent (Table 7.6).

The pattern of destinations for Canadian charter travellers to Europe was fairly constant during the later 1970s and the early and mid 1980s. So was the pattern of countries of origin for European charter travellers to Canada.

For Canadians travelling charter to Europe from 1975 to 1985, the principal destinations were in North Europe (Table 7.7). The total percent of those visiting the United Kingdom, Holland, France, and Germany ranged between 71 and 87 percent and in all but two years fell between 77 and 84 percent.

The most important single destination was the United Kingdom, which was the destination for between 56 and 65 percent of Canadian charter travellers to Europe during 1975-1985. In 1986, the importance of the United Kingdom as a destination showed a major decline, when many of Wardair's passengers fell into the scheduled rather than the charter category following its designation as a scheduled airline to that country.

TABLE 7.6

Importance of Charter on the Canadian North Atlantic 1961-1986

Shown In Percentage Terms

Year	Canadian North Atlantic (Stat. Can.)	(IATA)	Total N. At. (IATA)
1961	11.8		11.8
1962	16.6		12.2
1963	24.6		15.9
1964	26.7	27.7	15.8
1965	24.4	24.1	15.3
1966	23.1	23.6	15.7
1967	22.2	21.6	16.6
1968	27.9	28.4	18.8
1969	38.7	37.5	25.6
1970	36.2	36.2	24.7
1971	40.7	40.7	28.9
1972	31.1	31.0	24.8
1973	30.6	31.0	26.3
1974	26.9	27.5	24.6
1975	32.7	32.5	26.2
1976	30.8		26.6
1977	29.9		29.2
1978	27.8	28.2	21.6/21.1
1979	26.7	27.3	14.8
1980	25.1	25.6	10.4
1981	25.9	26.2	9.4
1982	29.5	29.8	11.8
1983	30.1	29.5	12.0
1984	28.3	25.8	11.3
1985	28.7	23.6	9.8
1986	25.2	17.1	6.4

Sources: The Canadian North Atlantic percentages are based on Table A.3 and the IATA percentages for the North Atlantic are from IATA (1986b).
Note: In 1978 IATA began to include Miami traffic in their definition of North Atlantic traffic. The larger figure to the left of the slash is from the series that excludes it and the smaller figure on the right is from the series that includes it.

In the period 1984-1986, France became increasingly

TABLE 7.7

Charter Canadian Destinations and European Origins

In Percentages

Year	Canadian Destinations					European Origins				
	UK	Hol.	Fra.	Ger.	Other	UK	Hol.	Fra.	Ger.	Other
1975	62	8	6	6	18	66	14	2	8	10
1976	56	9	7	5	23	64	12	5	9	10
1977	63	5	5	5	22	68	11	3	11	7
1978	57	5	5	4	29	61	13	3	13	10
1979	65	4	3	6	22	65	8	5	17	5
1980	64	8	1	7	20	70	10	4	13	3
1981	65	9	2	11	13	67	8	8	15	2
1982	59	7	6	11	17	66	7	6	17	4
1983	65	3	7	9	16	65	7	6	14	8
1984	59	4	10	6	21	60	7	8	15	10
1985	56	5	14	6	19	62	7	8	14	9
1986	40	3	24	6	27	56	5	13	14	12

Source: Stat. Can. series 51-207.

important as a charter destination both in percentage and absolute terms. It reached almost a quarter of the total in 1986.

Europeans travelling charter to Canada came almost entirely from these same four countries. Between 1975 and 1980, 90 percent or more of European charter passengers to Canada did so. Between 60 and 70 percent of the total usually came from the UK. Only in 1986, with Wardair a year-round designated scheduled carrier to that country, did the percentage coming from the UK fall below 60. The second most

important country of origin was the Netherlands in the mid 1970s, but after 1978 it was replaced by West Germany.

7.1.4 Profile of the North Atlantic Charter Traveller

Although the appearance of large scale charter travel had an important role in encouraging the development of lower fares, it did not have a major role in transforming the nature of travellers on the North Atlantic. The Appendix to the North Atlantic Charter Study carried out by IATA includes the results of several surveys that support this argument. These surveys are: a comparison of scheduled and charter passengers who were US residents travelling to vacation or to visit friends/relatives during summer of 1974 on the New York/Amsterdam route; a study of charter passengers to Europe in August-September 1969 carried out for PAA; and a survey of advance booking charter passengers from the UK carried out for the USTS following the introduction of ABC fares in the early 1970s.

The New York-Amsterdam survey in 1974 found there was no statistical significance in the breakdown of travel in the previous three years between scheduled and charter travellers neither in the number of trips made, nor sex, nor age. In the field of income the only possible statistically significant difference was in the category of an income between $20-24,999 and even here the probability that the samples for the charter and scheduled travellers came from the same population was 88 per cent (IATA 1976d, 70-73).

The study of charter passengers to Europe carried out for PAA developed the following profile of a charter passenger. The traveller was affluent (70 per cent had an income over $10,000US versus 29 per cent for the total population of the U.S.), well educated (65 per cent with some college vs. 28 for the total), a professional, white collar, or executive (65 per cent), had flown before (95 per cent), had flown outside the US in the last five years (55 per cent), had used scheduled flights for trips outside the U.S. (51 per cent), and had previously visited Europe (68 per cent, with half of those who had done so having travelled in the last two years, mostly on scheduled airlines) (IATA 1976d, 78, 83, 84). Out of the charter passengers, two out of three had definitely planned to go to Europe irrespective of how they got there with another 14 per cent stating they had probably decided to go irrespective of the type of flight, making four out of five overall (IATA 1976d, 90).

The survey of advance booking charter passengers from the UK also developed a profile for a representative traveller. The traveller was over 34 years old, married, with an income per household of over £3,000 ($7,182), residing in the southeast of the UK, who was generally visiting relatives or a friend, usually in the northeast or southeast of the USA, and who planned on a visit of three weeks. Their decision to travel had in only 22 per cent of cases been taken because ABC fares were available. A smaller proportion than

in the case of the United States had made a previous transatlantic trip, 43 per cent (IATA 1976d, 118).

The prosperous, older, educated person on either side of the Atlantic was the natural market for air travel for pleasure to the other side of the ocean, whether or not it was on a charter or scheduled carrier. It is, however, possible that the impact of easily available charter services had more effect in Great Britain and Europe than in North America. PAA's above-mentioned study found that two out of three of its subjects had definitely planned to go to Europe irrespective of how they got there and that most of those who had already travelled to Europe had done so on a scheduled carrier. The situation was different in the study of British travellers using advance booking charters to visit the United States. Not only had fewer of them in percentage terms made a transatlantic journey prior to their current one, 43 per cent compared to 68 per cent, but most of those who had made a previous trip had used a reduced price air fare, 58 per cent, while 33 per cent had used a full price air fare and nine per cent another means of travel.

7.1.5 Summary

After the re-emergence of charter travel at the dawn of the jet age, charter travel on the Canadian North Atlantic initially showed a similar pattern to the general one on the North Atlantic, but it developed more rapidly and by 1962

charter was more important on the Canadian North Atlantic market than on the entire North Atlantic market. In both the Canadian North Atlantic market and the overall North Atlantic market the relative importance of charter services reached their peaks in relative importance at the start of the 1970s. Their development diverged in a major way in the late 1970s. The charter market remained very important on the Canadian North Atlantic market, unlike the situation on the North Atlantic as a whole. Initially Canadians provided the greatest impulse in the development of the Canadian North Atlantic charter market and it was not until the 1970s that Europe approached equality in importance as a source of traffic. Canadian North Atlantic charter traffic was concentrated almost entirely on northern Europe with the UK providing both the main destination of Canadian charter travellers and the main point of origin for European charter travellers to Canada. While it is unlikely that the introduction of easily available charter travel had much impact on North American travellers to Europe, it may have had a significant role for British and other European travellers.

7.2 ROLE OF CANADIAN CARRIERS

After the re-emergence of charter travel on the Canadian North Atlantic at the beginning of the 1960s, Canadian carriers proved effective competitors and, led by Wardair, they ultimately secured a clearly predominant market share.

Although Canadian carriers would come to dominate the

TABLE 7.8

Revenue Shares in Can. North Atlantic Charter Market

1961-1968 (In Percentages)

Year	Foreign Carriers	Wardair	Other Canadian Carriers
1961	82		18
1962	53	2	45
1963	32	6	62
1964	33	7	60
1965	35	8	57
1966	57	13	30
1967	68	14	18
1968	58		

Sources: The totals for foreign carriers for 1963, 1967 and 1968 are from Saarty (1969) p. 293 while the remaining values for 1961-1967 are from a graph in Wardair (1967) based on ATB data.

market, they got off to a slow start. In 1961 they had only 18 per cent of the market (Table 7.8). This soon improved and during 1963-1965 Canadian carriers held between 65 and 68 percent of the market. A steep decline in market share began in 1966 and by 1967 the Canadian carriers' share of revenue had fallen to only 32 percent of the market, but the next year the revenue share of Canadian carriers started to rebound, reaching 42 per cent. The reason for this becomes clear when Table 7.9 is examined. In 1963-1965 Canada's

TABLE 7.9

Canadian Carriers in the Charter Market 1962-1969

In Thousands

Year	IATA Data AC	CPA	Both	(Market) (Share)	Statistics Canada Data AC & CPA	Other Can. Carriers	All Can. Carriers
1962					22		
1963					70		
1964	59	28	87	(53.4%)	84		
1965	43	25	68	(40.0%)	70	32	102
1966	35	13	48	(22.6%)	48	37	85
1967	23	1	24	(9.5%)	29	28	57
1968	30	1	31	(8.8%)	20	109	129
1969	64	48	112	(19.5%)	111	138	249

Sources: IATA (1976d) and Stat. Can. series 51-201.

scheduled carriers, Air Canada and CPAL, were able to commit a considerable volume of seats to this market, carrying 70 to 84 thousand passengers combined. In 1966-1968, however, the two main Canadian scheduled carriers committed sufficient capacity to only carry 20 to 48 thousand passengers. Both were involved in experiencing delays in expanding their fleets to meet scheduled traffic demand.

Along with Air Canada and CPAL, other Canadian carriers entered the Canadian North Atlantic charter market. Canada's regional carriers became involved in this charter market, including PWA, Nordair, and Transair, as did the charter carriers World Wide Airlines and Wardair.

Wardair entered the market for summertime charter service on the North Atlantic in 1962 with leased equipment and in 1963 was operating two DC-6Bs seating 88 passengers. It planned 40 trips out of western Canada during the summer of 1963. Its average load factor was 85 percent, compared to an average of 49 percent for IATA scheduled carriers. Wardair tapped the large pent up demand for charter services in western Canada at this time. This was rooted in the post-war immigrant group which had "made good" and provided three out of four of Wardair's passengers. In 1963 Canadian Aviation estimated that there was sufficient demand for charter flights on the North Atlantic out of Edmonton, that in addition to the 40 flights by Wardair, the one by Air Canada, the six by CPAL, and the three by Lufthansa, both Air Canada and CPAL could have offered 25 more flights (Can. Av. Sept. 1963, 47).

In 1964 on the Canadian North Atlantic Air Canada offered 199 charter flights, CPAL 110, Wardair 54, PWA 44, World Wide Airways 7, and Nordair 6. PWA entered with its DC-7Cs acquired the previous winter. Nordair also entered with Douglas aircraft, a DC-6B and DC-7C; it would subsequently use L-1049Hs which it initially used to the Caribbean. Supported by Canada's two scheduled airlines, Canadian carriers carried the bulk of charter passengers at this time (Can. Av. June 1965, 18).

In 1966, which saw participation by both Air Canada and CPAL down considerably to 35,000 and 13,000 passengers respectively, Wardair made a dramatic improvement in its service by offering jet service using a Boeing-727, stretching the range of that aircraft to its limit to reach Iceland. Wardair carried over 23,000 international charter passengers making it the second-largest Canadian carrier in the North Atlantic charter market (Table 7.10). CPAL now ranked third. It had disposed of its 5 Bristol Britannias and had lost both a DC-8 and a DC-6B leaving a fleet of only 6 DC-8s, 5 DC-6Bs, and 3 DC-3s. In 1967 and 1968 it would withdraw almost completely. The other Canadian carriers continued to operate propeller-driven aircraft: Transair entered with a DC-7C, PWA operated a DC-7C, and Nordair used a Super Constellation. Transair withdrew in 1967 to use its DC-7C elsewhere (Can. Av. June 1966, 19-20; June 1967, 49).

In 1968 Wardair took another step forward when it received its first long-range jet aircraft, a Boeing-707-320C convertible passenger-freighter aircraft. The choice of a convertible aircraft was made to provide the greatest possible flexibility rather than in the expectation of using it to carry freight. To finance this acquisition Wardair had become a public company in 1967. The expected expansion of 160 percent in passenger mile capacity on delivery of the Boeing-707 had permitted Wardair to expand outside of western Canada. In 1967 offices were opened in

TABLE 7.10

Wardair Operations 1966-1986

Year	International	Charter	North Atlantic Charter	Scheduled
1966	23,593			
1967	26,797			
1968	65,340			
1969	106,830			
1970	149,968/	167,359	153,130	
1971	187,665/	194,678	153,931	
1972	205,677/	192,939	113,923	
1973	273,677/	(289,000*)	(145,000*)	
1974	350,457/	351,660	182,599	
1975	527,070/	527,065	265,947	
1976		545,258	272,764	
1977		633,911	298,041	
1978		758,008	328,945	
1979		1,107,686	469,545	
1980		1,204,325	414,780	
1981		1,132,917	474,642	
1982		1,167,982	507,394	
1983		1,169,415	452,807	
1984		1,231,381	493,079	
1985		1,260,902	509,055	16,663
1986		949,869	296,744	619,434#

* Estimate based on first three quarters.
\# Includes domestic scheduled traffic.

Sources: The right hand column of total charter statistics is from various annual reports of Wardair. The remaining statistics are from Stat. Can. series 51-207 and 51-202.
Note: In 1986 164,000 of Wardair's scheduled passengers were carried on the North Atlantic. (IATA 1986b)

Toronto and London, England and in 1968 three more offices in eastern Canada opened and there were 22 planned charters originating in the United Kingdom and Europe. Wardair thus

took its first tentative steps towards becoming a truly international airline (Annual Report 1967). Between 1962 and 1968 Wardair enjoyed steady growth in the percent of the revenue generated by the Canadian transatlantic charter market that it received, and in 1968 passed the combined total for other Canadian airlines operating in that market (Table 7.8).

In 1968 the other two remaining Canadian carriers participating in the North Atlantic charter market moved to jet-aircraft. PWA used a Boeing-707-138B acquired from Qantas in the winter of 1967-68. Nordair used a leased Convair 990A but in 1969 withdrew from the market and returned its airplane to Modern Air Transport.

By 1970, although the volume of international charter passengers carried by Wardair had continued to grow (Table 7.10), its market share had dropped to 23.4 percent as shown in Table 7.11. This decline was due to the return of CPA and Air Canada as sizeable players in the North Atlantic charter market once their capacity shortage was corrected by the arrival of new aircraft. This return, as shown in Table 7.9, had begun in 1969.

In 1970 the North Atlantic still comprised over 90 percent of Wardair's international charter passenger traffic (Table 7.10). The need to provide year-round employment for its aircraft, however, already had begun to encourage its

TABLE 7.11

Canadian Participation in the Charter Market
1970-1986

In Percentages

Year	AC	CPA	Ward-air	Wrld-wys	Qbc-air	Ntn-air	All Can.
1970	13.9	6.9	23.4				48.9
1971	15.3	6.7	20.0				46.3
1972	14.9	3.3	15.8				37.9
1973	13.0	4.3	17.4				39.0
1974	10.3	0.0	23.9				36.3
1975	14.8	3.8	27.7		2.8		50.8
1976	8.1	6.3	28.9		2.6		51.5
1977	6.0	11.0	31.8		3.1		62.5
1978	5.3	13.3	37.3		4.2		67.1
1979	0.6	14.7	53.3		4.2		83.1
1980	3.0	20.4	54.4				86.0
1981	0.0	20.2	62.1	1.7			84.1
1982	0.2	24.8	57.7	10.4			93.2
1983	1.1	21.0	49.4	7.2			78.7
1984	4.3	0.2	52.0	11.2	4.7		72.4
1985	3.1	1.2	47.8	12.0	9.7	5.0	79.8
1986	1.6	1.1	32.0	19.8	8.5	11.8	86.4

Sources: IATA (1976d) and Stats. Can. series 51-002, 51-003, and 51-207.
Note: Only the major Canadian carriers are listed so the total of the individual carriers presented will often be less than the total given for all Canadian carriers.

diversification into other tourist markets where the peak demand season did not fall in the summer. Wardair noted in 1968 that the charter market for tours had increased winter revenue and in 1969 that winter inclusive tours to Mexico and Hawaii were up 50 percent. In 1970 its inclusive tour

operations, especially those operated by Fun Seekers International Ltd., proved successful beyond what had been projected (Annual Report 1968; 1969; 1970). During the next three years the role of the North Atlantic in providing Wardair's international charter passengers would fall to about 50 percent.

In 1969, along with its use of the winter tour market to supplement its North Atlantic summer revenues, Wardair also used the convertible feature of its new Boeing-707s to enter the freight market (Annual Report 1969). The subsequent expansion of "fun in the sun" winter travel after that year provided sufficient employment during the winter seasons that such an action became unnecessary later.

Wardair's 460 per cent growth between 1967's 26,797 international passengers and 1970's 149,968 passengers was due to its fleet expansion program taking it from one Boeing 727 to a fleet of two Boeing 707s and one Boeing-727. To avoid indigestion, the Boeing-727 was dry leased to Braniff in 1969 for the first year after the second Boeing-707 was delivered. The operating jet fleet thus went from one 727 in 1967, to one 727 and one 707 in 1968, to two 707s in 1969, to one 727 and two 707s in 1970.

The early 1970s witnessed a tendency for the share of the Canadian North Atlantic charter market held by Canadian carriers to decline. From 1970 to 1974 the total number of

charter passengers carried by Canadian carriers fluctuated between 278 thousand and 357 thousand carried while the total market fluctuated between 653 thousand and 833 thousand. Wardair led throughout in volume carried, followed by Air Canada. CPA's share trailed that of each of the first two considerably and it withdrew entirely from this market in 1974, though it would return in a minor way the next year. PWA, alone among the regionals, remained.

During the early 1970s, Wardair's energies were concentrated on adapting to the changing institutional and technological environment in which it operated. The development of the "fun in the sun" market for winter travel saw the relative importance of the North Atlantic to Wardair in providing passengers decline until it provided only about one half of Wardair's total international charter passengers. The longer distance to Europe compared to many winter destinations meant, however, that the decline in the proportion of the total revenue contributed by the North Atlantic charter market was less than the proportional decline in passengers. The flexibility provided by Wardair's participation in different markets is illustrated by events in 1972. The Fall, Winter, and Spring tours were increased by 100 per cent to offset the decline in traffic on the North Atlantic in 1972. This decline was attributed to the increased use of excursion fares offered by scheduled carriers (Annual Report 1972).

In the early 1970s, Advance Booking Charters (ABCs), were introduced on the Canadian North Atlantic to replace affinity charters. To deal with this change Wardair created a wholly owned subsidiary, Intervac, to compete in the ABC sub-market in Canada. To reflect the growing importance of travellers from the other side of the Atlantic, it created the Canada-United Kingdom Travel Centre to deal with the charter traffic originating in the United Kingdom.

The early 1970s also the saw appearance of the Boeing-747 aircraft in operation on the world's air routes. In 1972 Wardair announced that its first Boeing-747 would be delivered in the spring of 1973. The Boeing-727 in the fleet was sold to an airline in South America with delivery falling a few days after Wardair received its Boeing-747. A second Boeing-747 joined Wardair's fleet in December of 1974. The addition of Boeing-747s to its fleet allowed Wardair to offer service competition, as well as price competition, to rival scheduled and charter carriers. The financial tensions created by the need to finance the giant Boeing-747 led Wardair in 1972 to attempt to sell one-third of the company to Air Canada, but the sale ultimately fell through in 1974.

Wardair responded to IATA's attempt to expand its influence by opening its doors to charter carriers. Wardair joined in 1971 only to withdraw in 1974 when it considered the proposed fare increases on the North Atlantic to be too

large. Wardair also sought to improve its circumstances by lobbying the Canadian government. In 1974 it was already seeking the right on a flight to combine ABC and ITC passengers and to combine Canadian and European originating passengers.

At the beginning of the 1970s, the only regional Canadian carrier still involved in the North Atlantic market was PWA, and it would remain so until 1974. It was not until 1975 that other regionals began to re-enter this market with newly acquired long-range jet aircraft.

After the decline in the first half of the 1970s, the share of the charter market held by Canadian carriers began to increase from 1975. In 1975 the market share held by Canadian carriers jumped from just over a third to slightly over a half and by 1978 had risen to two-thirds. The share held by the two Canadian scheduled carriers fluctuated between 18.6 per cent and 14 per cent and showed no overall tendency to increase. The shares of the Canadian North Atlantic charter market held by Air Canada and CPA, however, traded places. Wardair's share of the charter market rose steadily, moving from slightly under one quarter in 1974 to well over one third in 1978. The most dramatic development in Canadian participation in the Canadian North Atlantic charter market came from the regional carriers.

Between the end of 1973 and the end of 1974, three more regional carriers acquired long-range aircraft and became potential competitors in the North Atlantic charter market. These were Transair, Nordair, and Quebecair. Transair acquired a Boeing-707 at the end of 1973 with the intention of using it for charter operations, but it did not enter the North Atlantic charter market until 1975 when it carried 1,719 passengers. Transair remained in the market in 1976, carrying 12,947 passengers (Stat. Can. 1975g; 1976g), but it left the market late in 1976 and disposed of its Boeing-707. Nordair acquired a DC-8-61 late in 1974, to which it added a DC-8 in 1978. It entered the North Atlantic charter market in 1975, carrying 1,424 passengers. In 1976-1978 it annually carried between 28 and 43,000 North Atlantic charter passengers. Quebecair was the most ambitious of the three, and acquired two Boeing-707-123Bs, including one on lease, at the end of 1974. Quebecair also entered the market in 1975 and in the period 1975-1978 annually carried between 23 and 38,000 passengers (Stat. Can. 1975-1978g). PWA also acquired another long-range jet in 1973 which entered service late that year. It was, however, a Boeing-707-320C freighter so PWA continued to operate only one long-range passenger jet.

The first of the regionals to withdraw after entering the charter market with jet aircraft was Transair. Unlike Nordair and Quebecair it was located in western Canada, War-

dair's heart land, instead of in eastern Canada. PWA was much larger than Transair. In 1974 it had three times the personnel (ICAO 1974b), and it had been operating a long-range jet aircraft in the various charter markets ever since 1968.

During the mid-1970s, Wardair continued to be concerned with expanding its fleet and its services. The relative importance of the North Atlantic to Wardair declined slightly as the per cent of its international charter passengers which were carried on the North Atlantic slowly declined from 50 per cent to 43 per cent. The actual volume carried, however, continued to climb as Wardair continued to expand its North Atlantic services. In Wardair's Annual Report 1976 it stated it planned to add London (Ontario), Saskatoon, and Ottawa, to Vancouver, Edmonton, Calgary, Winnipeg, Toronto, and Montreal as points of origin for Canadian flights. A year later it noted the continued growth in its services originating in London (UK), Prestwick, and Manchester. In 1976 it announced its expansion plans for its fleet in 1978 which were carried out. In 1978 its two Boeing-707s were replaced by two DC-10s and it acquired the first of two additional Boeing-747s. In the interval until the Boeing-707s were disposed of, they were used to provide service to Europe from low density areas of Canada and to develop new sunspot destinations (Annual Report 1976; 1977).

The environment in which Wardair and other charter carriers operated continued to evolve. In 1977 and 1978 there were more relaxations in Canada's charter restrictions. These relaxations included permission for charter services to offer variable return dates, children's fares, and the carriage of both Canadian originating and foreign originating passengers on the same flight (Annual Report 1977; 1978).

At the end of the 1970s and the beginning of the 1980s, Canadian carriers completely dominated the Canadian North Atlantic charter market. During the period 1979-1982, Canadian carriers carried between 83 and 94 percent of this traffic (Table 7.11). It was also during this period that the behaviour of Canadian North Atlantic passengers in choosing between charter and scheduled carriers diverged dramatically from the behaviour of North Atlantic passengers in general. Unlike the general picture on the North Atlantic where charter traffic fell to about 10 per cent, on the Canadian North Atlantic charter traffic remained between 25 and 30 per cent of the market (Table 7.6). Throughout this period, one carrier (Wardair) controlled between one-half and two-thirds of the Canadian market.

This strong showing by Canadian carriers occurred at a time of general withdrawal from the charter market. This withdrawal did affect the Canadian regional carriers which had recently entered the North Atlantic charter market.

The forces behind this withdrawal of many carriers can be summed up by comments made by two airline heads at this time. Speaking at the Conference on Tourism and Air Transport held in Mexico in 1978, Claude Taylor of Air Canada recalled "British Airways and Air Canada had seen its market devastated in one season (by supplemental low-cost carriers) - we responded to it and now have market fares which are competitive to the supplemental" (International Conference on Tourism and Air Transport 1978, 317). At the same conference Adam Thomson, chairman of British Caledonian, said "Our decision to swing entirely out of long-haul passenger charters six months ago (prior to April 1978) was purely a result of the hopelessly unprofitable future we foresaw for that activity." He also noted, "Of the seven British charter operators on the North Atlantic in 1972, two have gone to the wall, three have pulled out of the suicidal market including British Caledonian, and only two are left, one of which is the State airline" (International Conference on Tourism and Air Transport 1978, 255, 259).

By 1980 the regional carriers all withdrew from the Canadian North Atlantic charter market. The opening of the domestic market to internal non-affinity charters in 1978 by the CTC had not helped them since they made little penetration in the face of the scheduled carriers' low fares for long-haul trips; Air Canada's "charter class" and "seat sales" and CPA's "courier fares" and "skybus". Faced with

the Canadian trunk carriers offering low fares to southern and overseas destinations, and foreign competition, they were forced out of the charter market (Can. Av. Nov. 1979, 36). Transair had been the first to leave back in 1976. Pacific Western disposed of its passenger Boeing-707 in 1978 and its cargo Boeing-707 in 1979 (ICAO 1978b & 1979b). Quebecair lost one Boeing-707 in an accident at St. Lucia (involving no loss of life) in 1978 and planned to give up its second at the end of its leasing period in December, 1979. Nordair would retire its two DC-8s by April 1980 (Can. Av. Nov. 1979, 31-33).

Intensifying the whole level of competition on the North Atlantic was the attempt by Laker to establish "Skytrain" between London and New York with its walk-on fares. The attempt lasted from 1977 to the beginning of 1982 when the hostility of the scheduled carriers on the North Atlantic resulted in the company being unable to find adequate financing to continue operations.

After 1978, Air Canada withdrew almost completely from the North Atlantic charter market. CPA, however, expanded its operations sufficiently that the percentage of the reduced market occupied by scheduled Canadian carriers actually increased. Although Air Canada withdrew from the North Atlantic charter market, preferring to concentrate its summer energies on the scheduled market, it remained active in other charter markets at about the same level as previously,

except in 1982 when it greatly expanded its non-Atlantic activities. CPA expanded both its North Atlantic and other charter activities and its North Atlantic activities formed about half its total.

During the years 1979-1982, Wardair occupied over half of the Canadian North Atlantic market, with its share rising in 1981 to 62.1 percent. This was a dramatic increase in percentage terms from the previous period when it had usually occupied between a quarter and a third of the market. At the same time, however, its North Atlantic activities provided it with only between 34 and 44 percent of its passengers (Table 7.10). These were not financially good years for Wardair. Canadian Aviation in November 1979 noted that Wardair had been suffering losses (Can.Av. November 1979, 36) and, although Wardair's annual report in 1980 recorded a profit, sizeable losses occurred in 1981 and 1982. In 1981 Wardair added one DC-10 to its fleet but the company did not proceed with the fleet expansion plan of 1980, which had foreseen the addition of six A-310 Airbuses beginning in 1983.

In 1979 the institutional environment continued to change. It became permissible to mix ABC and ITC passengers on the same aircraft. Flights were allowed two pick up and two drop off locations. "Topping off" was allowed for up to 40 seats up to seven days prior to the flight. "Open jaw" ticketing was permitted along with fees for changes in

flight dates and for open returns. It was with considerable justice that Wardair declared "Charter is obsolete" (Annual Report 1980).

The proportion of Wardair's passengers originating in Europe reflected the changing nature of the market as exchange rates varied. In 1980 its annual report noted that the number of European originating passengers on the North Atlantic had passed Canadian originating passengers. Reflecting the increased importance of Europe, new ticket offices were opened in Paris and Frankfurt. Wardair noted in 1982 that these new offices were functioning well but that they had been hurt by the decline which had set in for Euro-currencies relative to North American ones. European originating passengers continued, however, to make up about half of its North Atlantic passengers (Annual Report 1982).

During this period two other Canadian carriers were active in the Canadian North Atlantic market. In 1979 and 1980 Ontario World Air flew 30,000 and 62,000 passengers respectively (Stat. Can. 1979g; 1980g). Ontario World Air had been launched at the end of 1978 with a single Boeing-707. Its handling was done by Air Canada and its maintenance by CPA. It was created explicitly to compete in the long-range charter market. In 1980 it expanded to two Boeing-707s with CTC permission (Can. Av. Nov. 1979, 32), but ceased operations suddenly at the end of 1980. The assets of the bankrupt firm were acquired by Worldways with which

it had had management personnel links (Conversation with Mr. Hunter of Transport Canada Jan. 5 1988). Worldways entered the North Atlantic market in a small way in 1981, carrying 12,850, and this increased to 91,314 in 1982 (Stat. Can. 1981g; 1982g). At this time its fleet was two Convair-640s (which it would dispose of by 1983), and three Boeing-707-320s (Can. Av. April 1982, 88).

In 1983-1985 Canadian carriers occupied a smaller proportion of the market than they had during the 1979-1982 period, but increased their share again in 1986 (Table 7.11). During 1983-1985, according to Statistics Canada figures, the total number of charter passengers on the Canadian North Atlantic was considerably higher than in the preceding period and the 1986 increase in market share occurred in a year showing a decline in the total number of charter passengers from the previous year (Table 3, Appendix).

The role of Canada's scheduled carriers was minimal during this recent period (Table 7.11). Air Canada remained a peripheral player in this market and, after 1983, CPA also withdrew almost entirely. In 1983 CPA seriously modified its fleet composition having lost $23 million Cdn in 1981 and $39 million Cdn in 1982. It exchanged three of its long-range DC-10s for short range versions with United Airlines for two years, with a two year extension possible, and sold seven aircraft, of which two were still in service. These seven included its last four long-version DC-8-63s.

These went to Worldways and would form the heart of Worldways fleet in the mid-80s.

Wardair's market share fell slightly in 1983-1985 and dramatically in 1986 (Table 7.11). The 1983-1985 period saw only a slight decline in North Atlantic charter passengers carried and a miniscule decline in the relative importance of this market to Wardair (Table 7.10). The large 1986 decline in its participation in the North Atlantic charter market was due to the introduction by Wardair of scheduled service to Great Britain during the entire year.

The initial 11 per cent decline in North Atlantic charter volume corresponded to a move by Wardair to reduce capacity by 23 per cent. This decision was due to the rise in the Canadian dollar which caused a decline in European originating traffic (Wardair 1983). Wardair received another source of revenue for at least some of its transatlantic flights when it received permission to carry cargo on charter flights to Amsterdam, although still not to other European destinations. Wardair was then serving London, Manchester, Belfast, Birmingham, Newcastle, Liverpool, Cardiff, Prestwick, and points in Germany, France, and Holland (Annual Report 1983).

In 1984 Wardair received as its first designation as a scheduled carrier, Montreal/Toronto-Puerto Rico. It began operations on November 5, 1985 with a winter-only service.

Wardair was designated by the Government of Canada on May 9 1985 as the second Canadian scheduled carrier to the United Kingdom. Under the bilateral agreement, Canadian carriers could serve Manchester, Prestwick, and London from ten Canadian cities. Service to London and Manchester began late in 1985. Wardair also received permission to operate scheduled services in Canada and by 1986 Canadian scheduled domestic routes represented 28.9 per cent of seats and 23.9 per cent of passenger revenue (Annual Report 1986). While Wardair's concerns continued to include the North Atlantic charter market, in 1984 it added charter flights to Italy, the emphasis continued to shift to other markets.

In response to its new opportunities Wardair began a major modification of its fleet. It acquired three Airbus-300s on a temporary basis in 1986, one for one year and the other two for three years, and it replaced one of its Boeing-747-200s with a Boeing-747-100. The ultimate plan to be completed by September 1988 foresaw three Boeing-747-100s and twelve Airbus A310-300s replacing its two Boeing-747-100s, two Boeing 747-200s, and three DC-10s of 1985 (Annual Report 1986). Wardair's continuing interest in the North Atlantic, though not now as a purely charter carrier, was demonstrated by the A310-300 which was chosen because it provided adequate range to serve London or Frankfurt-am-Main from Vancouver. Wardair's 1986 report also noted the continuing increase in importance to Wardair of cargo as it

expanded its scheduled services. The North Atlantic charter market had moved from being the heart of Wardair's operation to being increasingly an escape valve for excess capacity.

At the same time as Canada's major scheduled carriers withdrew from the Canadian North Atlantic charter market, and Wardair became increasingly drawn to other markets, other Canadian carriers have moved into the North Atlantic charter market. These are Worldways, Quebecair, and Nationair.

Worldways was the earliest of these three to enter, replacing Ontario World Air in 1981. In 1982 its fleet consisted of two turbo-prop Convair 640s and it had three Boeing-707Cs. The Convairs were dropped in 1982 and in 1983 two of the Boeing-707s were replaced in May and June by CPA's remaining four DC-8-63s. The fleet added two L-1011s by early 1986 which served to replace the remaining Boeing-707 which had left the fleet by early 1987 (Can. Av. April 1982-1987). Worldways' expanded fleet saw it capture almost 20 percent of the Canadian North Atlantic Charter market in 1986 compared to Wardair's reduced 32 percent. Worldways is based in Toronto.

Two "narrow-body" carriers based in Montreal have also entered the Canadian North Atlantic market. The earlier to enter was Quebecair which returned to the market in 1984, having acquired two DC-8-63s during that year. From about

five per cent in 1984, Quebecair was able to capture nine to ten per cent of the market in 1985 and 1986. In 1985 and 1986 over half of Quebecair's European services were to France and over 75 per cent of its passengers originated in Canada (Stat. Can. 1984-1986g).

The more recent carrier was Robert Obadia's Nationair. Robert Obadia left his position as vice-president of Quebecair in 1980, the year after Quebecair initially withdrew from the North Atlantic Charter market, to launch Nationair, a long-range charter carrier. The CTC initially rejected his application and it was only after a successful appeal in September 1983 that he was able to proceed. He began operations on December 19 1984 with two DC-8s. By October 19 1985 his fleet had risen to four DC-8s (Montreal Gazette Oct. 3, 1985). By early 1987 Nationair's fleet held six DC-8s compared to Worldways four DC-8-63s and two L-1011s (Can. Av. April 1987, 25, 29). Nationair's market share of the Canadian North Atlantic charter market rose from five percent in 1985 to twelve percent in 1986 (Table 7.11).

Long-range charter is only part of Quebecair's operations as a major regional Canadian carrier. It is, however, central to the existence of the other two. The North Atlantic charter market is a critical part of both Worldway's and Nationair's operations. In the case of Worldways, it supplied 35% of its passengers in 1985 and 34 percent in 1986. For Nationair, it supplied 25 per cent of its passengers in

1984 and 34 per cent in 1985. Wardair in comparison found that, excluding all its scheduled operations to the U.K., to Puerto Rico, and in Canada, the North Atlantic charter operations provided 31% of its passengers in 1986 (Stat. Can. 1984-1986g).

The long-range charter operations of all three of these more recent carriers on the North Atlantic were made possible when large numbers of narrow-body jet aircraft, no longer economic for scheduled operations, came on the market. Their continued existence requires the absence of any further oil crises until they acquire their next generation of more fuel-efficient aircraft.

Canada's carriers have performed well in the charter market. Since its revival in the early 1960s, they have dominated it from 1963 to 1965 and from 1977 to the present, and except in 1961, 1971, 1972, and 1973 have held at least 40 per cent of it. Their final rise to dominance was due to the staying power of Wardair with its diversified charter interests. Wardair's great strength was based on its maintenance of a fleet of aircraft that was equivalent technologically to most long-range scheduled carriers and on its success in constantly seeking out and developing new markets. As Wardair began to shift its interests to scheduled markets, new Canadian carriers entered the long-range charter markets, including the North Atlantic charter market. These new entrants seem to be doing well but are at risk should jet fuel again rise in price.

7.3 INCLUSIVE TOUR CHARTERS

The behaviour of Canadians travelling charter has been transformed since the appearance of the Inclusive Tour Charter in the late 1960s. ITCs required the person purchasing the charter ticket also simultaneously to purchase some other service, such as accommodation on arrival. Persons travelling in winter, for pleasure and to escape cold weather, only required a place to stay on arrival and were quite willing to purchase both their airfare and their accommodations simultaneously. ITCs were effective as the alternative form of charter available at the time of their introduction was affinity charter which was not particularly practical since it required that the purpose of the organization purchasing the charter be other than that of provid-

TABLE 7.12

Increase in ITC Flights Authorized by the CTC 1968-1970

Year	ITC Flights	North Atlantic Charter Fights	All Charter Flights
1968	169	1,425	2,109
1969	649	2,132	3,200
1970	644	2,656	4,113

Source: Transport Canada (1968-1979)

ing transportation.

Table 7.12 shows that authorized ITC flights increased 284 per cent in 1969 over 1968. The total was relatively

TABLE 7.13

Growth of ITC Market 1970-1977

In Thousands

Year	ITC Passengers	ITC Passengers As Per Cent of All Charter Passengers
1970	62	7.4
1971	155	14.7
1972	309	25.5
1973	563*	37.0*
1974	754	46.0
1975	973	47.6
1976	1,041	48.2
1977	1,124	49.1

*Estimate based on first three quarters of 1973.

Sources: Stat. Can. series 51-003 pre 1975, 51-207 post 1974.

stable in 1970. In 1971 rapid growth resumed with a 150 per cent increase in the number of passengers travelling on ITCs (Table 7.13). Rapid growth continued until 1975 by which time there had been almost a fifteen fold increase over 1970. The percentage of those flying on ITC tickets of all charter passengers had risen from 7.4 per cent to over 47

TABLE 7.14

The Canadian Charter Market 1970-1986

In Thousands

Year	Can. Charter Passengers	Can. Charter Passengers to Europe	Per Cent to Europe
1970	603	434	72.0
1971	776	518	66.8
1972	921	463	50.3
1973	1,210*	539*	44.5*
1974	1,241	395	31.8
1975	1,610	574	35.7
1976	1,678	498	29.7
1977	1,826	510	27.9
1978	1,955	470	24.0
1979	2,041	431	21.1
1980	2,047	305	14.9
1981	2,104	291	13.8
1982	2,408	427	17.7
1983	2,724	583	21.4
1984	2,928	610	20.8
1985	3,368	758	22.5
1986	3.177	587	18.4

* estimate based on first three quarters

Sources: Stat. Can. series 51-003 pre 1975 and 51-207 post 1974.

per cent. During this period of rapid growth for ITCs, the percentage of charter travellers going to Europe fell from over 70 per cent to about 30 per cent (Table 7.14). This transformation of the market provided a much more even demand for charter travel over the year and provided a basis for a continuing growth of charter travel as a whole.

Apparently, however, Europe had acquired a major rival for those willing to vacation a long distance by air from Canada. The decline in Europe as a charter destination, relative to other charter destinations, proved to be a continuing trend even after ITC's period of most rapid growth and, by the 1980s, Europe had fallen to between a sixth and a fifth of the charter market.

Although the development of the ITC market transformed the behaviour of Canadian charter travellers, it did not have that large an effect on the overall behaviour pattern of Canadian travellers. Table 12 of the Appendix follows the behaviour of Canadian travellers, excluding those visiting the U.S.A., since the late 1950s. It indicates that, since the end of the 1950s, the proportion who chose to visit Europe declined, though with occasional rallies. From 1958 until 1966 about two thirds visited Europe. Between 1967 and 1979 about 55 to 60 percent visited Europe. During the 1980s about 50 per cent visited Europe.

The Canadians who visit Hawaii and the southeastern United States are predominantly escaping Canada's cold winters. Table 7.15 adds these to the total of Canadians who travelled overseas as an estimate of the part of the "Fun in the Sun" market which is composed of Canadian travellers to the USA. The Table then examines the role in this more widely defined market played by Canadian travellers to Europe. The S.E.U.S. column of Table 7.15 shows the number

TABLE 7.15

A More Widely Defined Market

Canadian Travellers to Europe As Part of a Travel Market that Includes "Snow Birds" to the USA

In Thousands

Year	S.E.U.S.	Haw.	R.O.W.	Total	Europe	
1967	936	30	492	1,458	300	20.6%
1968	936	29	609	1,574	490	31.1%
1969	1,287	29	823	2,139	504	23.6%
1970	1,179	35	1,064	2,278	612	26.9%
1971	1,286	53	1,154	2,493	642	25.8%
1972	1,305	47	1,096	2,448	667	27.2%
1973	1,322	68	1,292	2,682	827	30.8%
1974	1,203	122	1,312	2,637	823	31.2%
1975	1,603	134	1,420	3,157	852	27.0%
1976	2,027	185	1,582	3,794	919	24.2%
1977	2,107	263	1,777	4,147	1,068	25.8%
1978	2,260	338	1,809	4,407	1,212	27.5%
1979	1,281	320	1,757	3,358	934	27.8%
1980	1,353	330	1,585	3,268	788	24.1%
1981	1,429	253	1,478	3,160	743	23.5%
1982	1,416	292	1,489	3,197	761	23.8%
1983	1,379	260	1,752	3,391	894	26.4%
1984	1,423	309	2,012	3,744	1,058	28.3%

Sources: Stat. Can. 66-201, 66-202, and 87-401.

of Canadian travellers to the south Atlantic, central south west, and central south east United States. "Haw." shows the number of Canadians visiting Hawaii, and "R.O.W." shows those visiting destinations other than in the United States. There is no readily definable trend in the proportion of Canadian travellers choosing to travel to Europe. It would seem, therefore, that the explosive development of the ITC

market primarily affected only the charter market and there was no immediately obvious effect on the overall behaviour patterns of Canadians travelling to Europe or to escape Canada's winters.

The development of the ITC market, however, did support the growth of Wardair into a major carrier, and Wardair's size, together with the seasonal travel patterns of Canadians, kept Wardair in the North Atlantic charter market at a time of general withdrawal from this market. As a result, Canadians enjoyed the presence of an effective alternate to scheduled carriers without the need of deregulation as occurred in the United States. Furthermore, this alternative was one predominantly controlled by Canadian business.

Wardair was very active in promoting the development of the ITC market. Its annual reports chronicled its success. In 1967 it noted the ITC market was disappointing, in 1968 that it increased winter revenue, in 1969 that winter ITCs to Mexico and Hawaii were up 50 per cent, in 1970 that ITC operations, especially "Fun Seekers" were successful beyond projection, in 1971 that ITC revenue was up 114 per cent, in 1972 that a fall in North Atlantic traffic was offset by a 100 per cent increase in Fall, Winter, and Spring Tours, in 1973 that while the North Atlantic service had grown to five months from two in 1962 there was now also a four month sunspot package holiday destinations service, and in 1974 that the number of passengers on ITCs had passed the number

on ABC tickets, which were almost entirely to Europe, for the first time.

It is interesting to note that the rapid growth of ITCs from Canada to destinations in the United States was so dramatic that it affected Canada's relations with the US. Canada's 1974 air bilateral with the US stated that American carriers could provide up to 25% of Canadian originating charter traffic to Hawaii and Florida and up to 40% of other Canadian charter traffic to the United States.

In conclusion, ITCs are an important phenomenon which had unexpected implications for the North Atlantic market. They emerged at a time when the capacity of long-range aircraft had greatly increased with the introduction of the wide-body jets. They provided charter carriers like Wardair with a means of profitably employing their excess capacity during the winter low season and were encouraged for that reason. They also helped perform a similar function for scheduled Canadian carriers with intermediate and long-range aircraft. They supported Wardair's expansion and enabled it to grow to dominate the North Atlantic charter market at a time when many carriers were being forced to pull out of the North Atlantic charter market. The very healthy Canadian North Atlantic charter market provided useful competition to the scheduled market, especially when low fare scheduled carriers were not created on the Canadian North Atlantic market as they were in the overall North Atlantic market.

There does not seem to be any direct proof that they have affected overall patterns of Canadian vacationing.

7.4 CONCLUSION

From the mid 1960s to the present, charter traffic on the Canadian North Atlantic has played a larger role proportionately in providing transatlantic transportation than it has on the overall North Atlantic. Charter traffic provided, and continues to provide, an important lower priced alternative to scheduled services. Canadian demand initially dominated the development of this market but by the mid 1970s European demand was also of crucial importance. Canadian carriers, led by Wardair, have performed well and have come to completely dominate the market. They accomplished this at the time when many carriers were withdrawing from the North Atlantic charter market. Wardair has been able to play its pivotal role because of its fleet of excellent aircraft and the carefully developed network of markets that it created from its initial base on the North Atlantic. The development of ITCs has greatly assisted Canada's charter services in employing their fleets year round and the ITC market is vital to their health and thus is vital to their performance in the North Atlantic charter market. Although ITCs appear to provide an important alternative to North Atlantic travel they do not seem to have had a clear impact on the evolution of demand on the North Atlantic. The

decline of the importance of Europe as a destination relative to other destinations predated the creation of ITCs and has continued after the period of ITCs most rapid growth.

Chapter VIII

INTERRELATIONSHIPS OF THE NORTH ATLANTIC WITH OTHER MARKETS

The North Atlantic market is not operated by Canadian carriers in a vacuum but rather in the context of their other markets. It has one characteristic that is very unfortunate from the point of view of carriers. This is the marked seasonal imbalance in demand which has been a continuing feature of this market. This feature has concerned all three of the major Canadian carriers which have operated on the North Atlantic, Air Canada, CPA, and Wardair. The interrelationships among the markets discussed in this chapter illustrate the economics of airline utilization of aircraft and personnel in the context of overall route and system planning.

8.1 INTERACTIONS BETWEEN AIR CANADA'S MARKETS

TCA's "southern" operations, i.e., those to countries in the American hemisphere south of the US, began in response to a policy decision taken by the Minister responsible for TCA, C. D. Howe. Service to Bermuda was begun on May 1 1948 from Montreal and from Toronto. Service was opened on December 2 of the same year to Nassau in the Bahamas, Kingston, Jamaica, and Port of Spain, Trinidad from Montreal via

Toronto. Barbados in the Windward Islands was added by TCA on December 2 1949 as a stop on a service from Bermuda to Port-of-Spain (Stroud 1962, 426-428). The service between Jamaica and Trinidad was simultaneously withdrawn; this did not harm revenue as inter-island traffic rights were then held only to and from Bermuda (Railway & Shipping April 3 1950 no. 5, 285, 365).

TCA's President and its management were well aware of the likely importance that the West Indies would have "in counter-balancing the seasonal differences we (TCA) suffered, since peak traffic periods would occur during the low periods of Atlantic and transcontinental operations, and slack time for equipment and flying personnel could be put to profitable use" (McGregor 1980, 31). They had disagreed only on the question of timing since McGregor had felt that, in the environment of the day, service would only be profitable if fifth freedom rights were obtained between U.S.A. and Caribbean points. In September 1948 McGregor had warned Howe that service to the Caribbean could add a half a million dollars to TCA's deficit. The Minister replied "I have been well aware that profitable business does not exist at the moment, and that the hope for the route is that tourist business from Canada can be built up to a profitable level, particularly during the winter months. Canada desires to offer an outlet for Canadian tourists in sterling areas, and, for that reason, I think that the route should be oper-

ated in the national interest. You may be surprised at the amount of business that can be developed by active promotion. In any event it will take off the pressure for improved boat service between Canada and the Islands ... Therefore, please get this service under way as soon as possible" (P. Smith 1986, 140). The "boats" to which Howe referred were the CN steamships which, before the War, had maintained Canada's traditional connection to the area carrying cargo and 'showing the flag'. It was intended that TCA supplement and replace this service (R. & S. April 3 1950 no. 5, 360).

TCA's initial traffic was a mix of "luxury, small business, and medical" traffic. It had no competition and set its fares by IATA rules (Railway & Shipping April 6-7 1949, 312-314). By 1949 TCA also was carrying some traffic onward to the UK (Railway & Shipping April 3 1950 no. 5, 285).

In 1950 a "transborder" addition was made to TCA's route system which was really part of its "southern" services, although it appears as part of its transborder operations. As a result of new bilateral negotiations following the entry of Newfoundland into the Canadian Confederation, Canada received from the US the right to operate Montreal-New York, Vancouver-Hawaii-Australia, and Canada-Tampa/St. Petersburg-Bahamas. As a result of negotiations with the UK Canada received Vancouver-Alaska-Aleutians-Japan-Hong Kong-China-Beyond, the addition of Fiji to the Australian ser-

vice, and additional rights at Barbados, Antigua, and British Guiana (Debates 1950 Vol. III May 11, 2408-2411).

During the 1950s three more additions were made to TCA's "southern" services. A second destination in Jamaica, Montego Bay, was added Dec. 17, 1953. Antigua was added Dec. 15, 1958; it was initially served via Bermuda. In addition, from January 16 1954 to November 1 1955, TCA served Mexico City from Toronto. This last route was then exchanged by the company with CPA in return for services in Quebec on the North Shore of the Saint Lawrence and from Quebec to the Maritimes (Stroud 1962, 430-432, 434).

TCA faced some competition on its "southern services" from the end of the 1940s but it was not significant until the mid or even later 1950s. By 1949 KLM had a licence from Canadian aeronautic authorities to operate both Amsterdam-Monteal and Montreal-Willemstad, Curacao in the Dutch Antilles (Can. Yrbk. 1951, 783-4). In 1952 BOAC held a licence to operate from London to Gander and then to Bermuda, Nassau in the Bahamas, and Montego Bay on Jamaica (Canada Yearbook 1954, 851), but in 1953 it was reduced to Gander-Bermuda (Can. Yrbk. 1955, 900). By the end of 1958, BOAC had two "southern" route licences from Canadian aeronautical authorities: the old London-Gander-Bermuda route and a London-Montreal-Nassau route (Can. Yrbk. 1957-1958, 872). In 1958 the Gander-Bermuda service was suspended and the Nassau-Montreal service no longer continued on to London

(Can. Yrbk. 1959, 835). In 1959 the route changed again, London-Montreal-Jamaica replacing Nassau-Montreal. Eagle Airways (Bermuda) made a brief appearance with a Bermuda-Montreal licence. KLM replaced its Montreal-Willemstad licence with an Amsterdam-Gander-New York licence (Can. Yrbk. 1960, 873). In 1960 BOAC moved to considerably improve its "southern" services and the licence now read London-Montreal-Bermuda-Bahamas-Jamaica (Can. Yrbk. 1961, 839). By the end of 1962 the licence also included Barbados, Antigua, and Trinidad (Can. Yrbk. 1963-64, 808).

After their initiation, TCA's "southern services" rapidly became an important part of TCA's international operations. Starting in 1948 at about 1/8 of the North Atlantic's volume it rose to 1/2 its volume during its first full year of operation and, by 1951, was approximately equal in volume to the North Atlantic. During the years 1952 to 1954 it outstripped the North Atlantic in volume in terms of passengers, fell behind briefly in 1955, and thereafter remained ahead into the 1960s (Table 8.1). By 1954 the importance of the Caribbean as a holiday destination was clearly established with the bulk of traffic to the Caribbean islands and Bermuda known to be vacation traffic (Railway & Shipping March 19-31 April 5-6, 1986).

Although its southern services carried a sizeable volume of traffic in the 1950s, TCA was not particularly happy with them. In 1954 it pronounced the service as being "fairly"

TABLE 8.1

TCA's International Scheduled Traffic 1947-1962

In Thousands

Year	North Atlantic Services	Southern Services
1947	14	0
1948	23	3
1949	22	12
1950	17	15
1951	21	21
1952	23	30
1953	25	30
1954	29	32
1955	34	31
1956	40	46
1957	48	58
1958	61	72
1959	64	87
1960	83	88
1961	104	110
1962	114	137

Sources: TCA (1947-1953), Davies (1964) p.426 for TCA's North Atlantic services. The figures for the southern services were obtained by subtracting the figure for the North Atlantic from the total of scheduled passengers carried by TCA, excluding those carried on its transborder services, as presented in Stats. Can. series 51-202 and IATA (1957-1962c).

unprofitable because of its seasonal nature and pointed out the load factor on its Bermuda and Caribbean services was only 58.5 per cent versus its system figure of 72.3 per cent (Railway & Shipping March 31 April 1 no. 4 1955, 326). It, therefore, was not encouraged to embark on a major expansion of its services. The result was that in the mid-1950s

there was virtually no change in the number of passengers carried from 1952 through to the end of 1955. The great increase in passengers from 1956 on corresponds to the arrival in TCA's fleet of the Vickers Viscount. Its range, with a maximum payload, was 2,775 km. (Green and Swanborough 1982, 188) while the stages on TCA's southern services were all under 2,300 km.: Toronto/Montreal-Bahamas/Bermuda/Tampa, Bahamas-Jamaica, Bermuda-Barbados, and Barbados-Antigua/Trinidad. As a result, the southern services could now be developed independently of the need to use long-range aircraft suitable for the North Atlantic, while the long-range aircraft could still be usefully employed on the Caribbean services during the low season on the North Atlantic. Of TCA's subsequent acquisitions, the Vanguard, DC-9, and Boeing-727 were all suitable for operation on one or more of TCA/Air Canada's "southern" routes as well as the DC-8, Boeing-747, and other long-range aircraft employed on the North Atlantic.

At the meeting of the Standing Committee on Railways, Canals, and Telegraph Lines of June 2 1964, it was again stated that the fact the Caribbean's peak traffic period was out of phase with the transcontinental and transatlantic routes gave it particular value as it allowed for better utilization of staff and equipment (Railways & Canals & Telegraph June 22-23 1964 no. 3, 322).

TABLE 8.2

AC's Southern Services 1964-1986

In Thousands

Year	AC's N.At. Services	AC's Southern Services	Canadian Carriers' Southern Services
1964	145	150	189
1965	150	180	226
1966	232	215	268
1967	285	255	320
1968	317	330	416
1969	294	350	440
1970	414	235	297
1971	372	290	360
1972	585	295	(370) 540
1973	655	365	(456) 655
1974	683	370	460
1975	601	350	437
1976	658	330	349
1977	739	365	428
1978	737	405	476
1979	850	460	542
1980	801	505	595
1981	739	455	478
1982	714	390	413
1983	690	360	376
1984	811	405	425
1985	876	450	476
1986	799	380	400

Sources: AC's North Atlantic traffic is from Table 6.4. The totals for Canadian carriers southern services are based on Stats. Can. series 51.002. In 1964-1969 the figures are estimates based on total passenger revenue miles as are the bracketed figures for 1972-1973. The totals for AC's southern services are estimated from these totals using data from ICAO's Traffic Flow and Traffic by Flight Stage series. (When CPA is operating a service to Mexico from eastern and western Canada, AC is assumed to supply 80 per cent of Canadian southern services, when it operates from one coast, AC is assumed to supply 85 per cent, and when CPA operates no service to Mexico, AC is assumed to supply 95 per cent. The totals are rounded to the nearest five thousand.)

Until the start of the 1970s, Air Canada's scheduled southern services carried more passengers, if for a shorter distance, than Air Canada carried on the North Atlantic. After 1969 Air Canada's scheduled southern services became less important in terms of passengers than its scheduled

TABLE 8.3

Caribbean Traffic 1965-1986

Carried by Canadian Carriers

in Thousands

Year	Scheduled	Charter	Total
1965	226	6	232
1966	268	8	276
1967	320	6	326
1968	416	14	430
1969	440	23	463
1970	297	69	366
1971	360	139	499
1972	(370) 540	285	(655) 825
1973	(456) 655	378	(834) 1,033
1974	460	509	969
1975	437	570	1007
1976	349	568	917
1977	428	545	973
1978	476	644	1120
1979	542	554	1096
1980	595	470	1065
1981	479	406	885
1982	413	386	799
1983	376	540	916
1984	425	750	1175
1985	476	758	1234
1986	400	1054	1454

Source: Table 8.2 and Stat. Can. series 51-002.

North Atlantic services (Table 8.2). The 1970s saw a complete transformation in the nature of the service offered by Canadian carriers on the "southern services" with charter traffic rising from perhaps 3 per cent of the total in 1965 to over 50 per cent by 1974 (Table 8.3). This development meant Air Canada faced much more competition for southern passengers and helps to account for the proportion of passengers carried in the two markets.

8.2 INTERACTIONS BETWEEN CPA'S MARKETS

CPA's southern services played a different role than did those of TCA/Air Canada. CPA saw these services, along with its Pacific services, as providing a source of passengers for the transatlantic services it wished to offer. It thus called on its service to Australia to support the establishment of its service from Vancouver to Amsterdam, and on its operations to Mexico and South America to support the establishment of its operations to Portugal and Spain.

The seasonal imbalance of the North Atlantic operations made it very desirable for CPAL, as for all North Atlantic carriers, to have another part of its system that could absorb North Atlantic equipment during the winter low season. Initially this was available from its southern Pacific operations to and through Hawaii. In January 1956 CPAL increased its operations on Vancouver-Hawaii to three DC-6B flights a week, all weekend departures, for the winter. It

also increased its new Mexico City-Toronto operations from its initial weekly service at the start of 1956. Then for the summer of 1956 it reduced its Hawaii operations from Vancouver to twice per week. Its operations Vancouver-Amsterdam were, however, increased from its initially weekly service to thrice weekly. Then after high season its Amsterdam services were reduced to twice weekly for the winter of 1956/57. Its operations to Hawaii from Western Canada, however, rose from twice per week to six times per week, five from Vancouver and one from Calgary. Then for the summer of 1957 it increased its Amsterdam operations to four while starting a bi-weekly operation to Iberia from eastern Canada, but its western Canadian-Hawaii flights were again reduced to twice weekly. (Can. Av. various issues 1955, 1956, 1957, 1958).

CPA's system became more complex, as time passed, but its seasonal pattern of operations remained the same. In 1970, CPA's summer-season route pattern resulted in the month of September in 196 flights with DC-8 and DC-8S aircraft on the North Atlantic (46 DC-8S, 57 DC-8), 17 DC-8S flights on the North Pacific, 25 flights on the South Pacific and to Hawaii (10 DC-8S, 15 DC-8), 30 flights to California (9 DC-8S, 21 DC-8), and 21 DC-8 flights to Mexico and South America (ICAO September 1970d, Tables 42-44). In December 1970, when CPA's winter route pattern was in effect, there were 191 flights to those destinations. There were four more DC-8S

flights but nine less DC-8 flights so the total of seats offered to points abroad with these aircraft was almost the same as in September. Europe received 22 DC-8S and 40 DC-8 flights, the North Pacific received 18 DC-8S flights, Hawaii and the South Pacific received 31 DC-8S and 14 DC-8 flights, California received 16 DC-8S and 16 DC-8 flights, and Mexico and South America received 34 DC-8 flights (ICAO December 1970c, Tables 36-39). In all, a little over 7,000 seats were redistributed away from Europe with Hawaii and the South Pacific picking up the bulk of them, about 4,000, with a little under 2,000 going to the southern services, and most of the remainder to California.

CPA thus offered about 40 per cent fewer seats to Europe in winter than summer but almost 100 per cent more to Hawaii, 60 per cent more to the South, and 15 per cent more to California. The service on the North Pacific was not altered, presumably because it was not yet regarded as a tourist destination with the seasonal pattern of demand that this usually implies. In fact, there was a reduction in the total number of seats offered to California by CPA. California, unlike the other destinations discussed above, was served by a mix of aircraft which included some unable to operate to Europe. These were ignored in the above review. Some long-range aircraft displaced from Europe in turn displaced some of the shorter range aircraft serving California. California received 10,427 seats in total in September and only 9,929 in December.

8.3 INTERACTIONS BETWEEN WARDAIR'S MARKETS

Canada's third major carrier, Wardair, began its international operations on the North Atlantic and immediately encountered the seasonality problem which is even more severe in the charter market than in the scheduled market. Wardair's solution eventually resulted in a transformation of the entire emphasis of its operations. In 1962 it had operated for only two months of the year (Annual Report 1973) with a leased aircraft. Its first long range aircraft, a DC-6B was not purchased till 1963 (Annual Report 1967). By the time Wardair went public in 1967 to finance the purchase of a Boeing-707, it was operating a Boeing-727 and Max Ward was looking for winter employment for his aircraft but found the new ITC market "disappointing" (Annual Report, 1967). As discussed in Section 7.2, Wardair then became actively involved in promoting the new ITC market.

As shown in Table 8.4, the North Atlantic still provided over 90 per cent of Wardair's international charter traffic in 1970. This was soon to change as winter traffic continued its rapid expansion. In 1971 its revenue from ITC traffic rose by 114 per cent (Annual Report 1971) and this year the Atlantic market only provided 79 per cent of the passengers carried internationally. By 1973 the North Atlantic provided only a little more than 50 per cent and in 1977 it would fall to 47 per cent. By the 1980s the North Atlantic, the market for which the international operations of the

TABLE 8.4

Importance of Wardair's Charter North Atlantic Traffic

As a Percentage of Wardair International Charter Traffic

Year	Per Cent
1970	91.6
1971	79.0
1972	59.0
1973	50.2
1974	51.9
1975	50.4
1976	50.0
1977	47.0
1978	43.4
1979	42.4
1980	34.4
1981	41.9
1982	43.4
1983	38.7
1984	40.0
1985	40.4

Source: Based on Table 7.10.

airline had been set up, was providing only about 40% of the traffic carried while the traffic to other destinations, originally sought as a means of helping the airline to make it through the lean winter on the North Atlantic, was providing about 60% of the traffic.

8.4 CONCLUSION

In conclusion, it can be clearly seen that for all three of Canada's carriers, the North Atlantic market was, and is, viewed as an integral part of their entire systems and that the decisions made with regard to that market are interrelated with others.

Chapter IX

THE INSTITUTIONAL STRUCTURE FOR RATE-MAKING

Since the beginning of air passenger travel on the Canadian North Atlantic after World War II, a single institutional structure has played a strategic role in the evolution of fares. Scheduled fares have normally been determined by the scheduled carriers through their organization, the International Air Transport Association, subject to government approval. When the scheduled carriers have not been able to come to a joint unanimous decision they have filed their fares individually, subject to government approval. Charter fares have been determined individually by the carrier offering the charter flight, in response to its own costs and in the light of fares being offered by its competitors, again subject to government approval.

This institutional structure has, itself, evolved. The most important change occurred in 1978. Prior to that year the scheduled fares on the Canadian North Atlantic were determined jointly with the scheduled fares between Europe and points in the United States north of Miami through a single traffic conference of IATA. After that year, the fares on the Canadian North Atlantic were still determined by an IATA traffic conference, but no longer jointly with fares between Europe and the United States.

This chapter is divided into several sections. The first outlines the method by which scheduled fares were determined prior to 1978. The second discusses the strains on the system in the early 1970s. The third follows the build up of US deregulatory pressure on IATA. The fourth outlines the resolution of the crisis and resulting restructuring of the rate-making system.

9.1 THE ORIGINAL IATA STRUCTURE FOR SETTING SCHEDULED RATES

The bilateral agreement which created the "de facto" pattern of agreements for international aviation between western countries was the "First Bermuda Agreement" signed between the United Kingdom and the United States of America in 1946. This agreement delegated to the rate making machinery of IATA the task of setting fares and rates between the two countries, subject to the approval of their aviation authorities. This agreement also provided for the **ex post facto** review of capacity by both parties. Most bilateral agreements on the North Atlantic tended to follow this pattern, either explicitly or implicitly.

IATA was founded in April 1945 at the "International Air Transport Operators Conference" at Havana. It was incorporated under Canadian law with its headquarters in Montreal, Canada. Membership in IATA was initially restricted to scheduled carriers but was opened to charter carriers in the

early 1970s. In practice, membership has been made up almost entirely of scheduled carriers and has included the vast majority of air carriers which engaged in international scheduled services. In 1980, about three-quarters of the world's total scheduled international passenger and cargo air traffic was flown by IATA member carriers (Haanappel 1984, 72).

IATA divided the world into a number of geographic areas which it called Traffic Conferences, initially nine, later three (Haanappel 1978, 71). A carrier was a voting member of a Traffic Conference if it operated a scheduled commercial international air transport service between any two points within the Traffic Conference and could be a voting member if it operated such a service to a point in the Traffic Conference (Haanappel 1978, 58). The Traffic Conferences were to meet at least once every two years and special meetings were to be held to determine fares, rates, and related matters between points in two or more Traffic Conferences. For practical purposes there were, therefore, seven Traffic Conferences: TC 1, which covered all the Americas; TC 2 which covered Europe; TC 3 which covered Asia and the Pacific, except Hawaii which was in TC 1; TC 1 2 which covered operations affecting the Americas and Europe; TC 1 3 which covered operations affecting the Americas and Asia; TC 2 3 which covered operations affecting Europe and Asia; and TC 1 2 3 which covered operations throughout the world (Haa-

nappel 1978, 59, 71). After 1964, separate conferences were organized for passenger and cargo subjects (Haanappel 1978, 59). Only scheduled tariffs were dealt with in a Traffic Conference (Haanappel 1978, 61).

Resolutions which were passed at individual or joint meetings of Traffic Conferences were binding on the members of the Conference. A Resolution, however, could be passed only by the unanimous affirmative vote of all the members at a meeting, although under certain circumstances a vote by mail was possible. This unanimity rule gave each member airline an effective veto over Resolutions and made the setting of tariffs the result of a bargaining process. It is noteworthy that this unanimity rule biased fares in an upward direction because of the leverage it gave high cost carriers. When it proved impossible to reach agreement, or when the agreement was subsequently disapproved by one or more governments, what was called an "open fare" or "open rate" situation arose in which any provisions in the relevant bilateral air transport agreement became applicable (Haanappel 1978, 60).

When an open rate situation was in effect, the usual practice of carriers was to extend the previous rates (Chuang 1971, 73). While this was the usual practice, what was possible depended on the actual provisions of the bilaterals of the countries involved. Canada's bilaterals applicable to the North Atlantic have generally made provision

that, in the case of a conflict over fares, capacity, etc. which cannot be resolved by the parties themselves, the dispute is to be referred to an arbitration tribunal involving the ICAO. Prior to the resolution of the dispute, new fares require the approval of both governments, otherwise the old fares continue in effect. Under Bermuda I between the United States and Great Britain, it was provided that in certain circumstances a tariff could come into force, despite the objection of one country, as long as the airline proposing the tariff had the permission of its own government, until such time as the dispute was resolved. The United States Congress, however, never passed the required legislation regarding the CAB which would have made the clause effective (Haanappel, 29-32).

IATA established an enforcement mechanism for Resolutions. The possible penalties were fines or, in certain circumstances, expulsion of the offender from IATA (Chuang 1971, 99). It could not enforce a Resolution, however, if it were broken by a carrier on the instructions of its government. The dispute then likely became an issue between governments (Chuang, IATA, 97).

Until 1978, the fares between Canada and destinations in Europe were determined in TC 1 2, along with those between the United States and Europe. They were never allowed to move out of line, since any such movement would rapidly have led to a diversion of traffic to one side or other of the Canadian-American border.

Despite the strains on the system, which are discussed in the next section, this method of setting fares prevailed on the North Atlantic from 1946 until 1978. The IATA fare conference system had gained its authority when rate-making was delegated to it in the Bermuda I agreement and was further confirmed by other bilateral agreements between governments which followed.

9.2 THE SYSTEM UNDER STRAIN

By the early 1970s, the IATA system for establishing fares on the North Atlantic was coming under strain as the share of the North Atlantic passenger traffic held by the low-price charter carriers rose above one quarter of the market (Table 1, Appendix). Then, in June 1972, the CAB disapproved IATA Traffic Conference Resolution 045 ('Passenger Charters') (Haanappel 1984, 129). This was followed by the "Ottawa Declaration" by Canada, the US, and the ECAC (European Civil Aviation Conference) member states in October 1972. This announced that, by April 1973, non-affinity charter flights, advance booking charters in Canada and Europe and travel group charters in the United States, would be available on the North Atlantic (Haanappel 1984, 130). Before this almost all charter flights were affinity charters.

The initial response of charter and scheduled carriers was to attempt to set minimum charter fares. The trade

association of the five largest American supplemental carriers, the National Air Carrier Association (NACA), filed an application to hold such negotiations, either simultaneously with the IATA Traffic Conference, or separately, with the CAB on May 9, 1973. The latter was approved. Several rounds of negotiations were held in 1973 and 1974 but it proved impossible to reach any agreement and no further talks were held after October 8, 1974. Wardair was involved in these talks and its withdrawal along with three American charter carriers, claiming that the proposed charter fares were too high, destroyed the tentative agreement reached in September 1974 (Haanappel 1978, 119-120).

In the face of failure by the carriers to agree, the governments moved to set minimum charter fares. Canada's CTC set them unilaterally in 1973. The ECAC recommended a set of minimum fares to its member states in June 1973. These were followed by eleven of its eighteen member states. In 1974 at metings in May and September, American representatives agreed with those from Canada and the ECAC that governmental action was needed if the carriers could not agree. On September 7 the CAB announced proposed guidelines for TGC and affinity group charter fares and these were made effective on October 21 1974. The CAB's legal power to issue such guidelines was questioned by the Anti-trust Division of the US Department of Justice and on February 11 1975 the CAB voluntarily withdrew its guidelines only three days before

the matter was to go before the US Court of Appeals for the District of Columbia. The reason given was that the general validity of the data supplied by the airlines was in question and that the different rates for different types of equipment could not be resolved. The CAB also noted that the guidelines had been issued too late since many charter contracts to the public were concluded for the 1975 season and sales to the public had begun. The CAB's proposed fares had been lower than those recommended by the ECAC for its members (Haanappel 1978, 114-117). No "guidelines" were again to be issued by the CAB on charter fares.

Canada set minimum charter fares for the North Atlantic. Some European countries continued to do so but others did not and, indeed, those that entered "liberal" bilaterals with the United States, including the Netherlands and Belgium, had to give up almost all forms of control on charter fares to the United States. Unlike ABCs and American Public Charters, ITCs and OTCs generally have been affected by government regulations but these are relatively unimportant on the North Atlantic (Haanappel 1984, 136).

The second response of the air transport industry to the growth of charters was IATA's attempt to attract the participation of charter carriers. In September 1974 the 30th Annual General Meeting of IATA decided to open membership to charter carriers and to enable them to vote on questions of charter fares on the North Atlantic, although not on ques-

tions involving scheduled fares (Haanappel 1978, 61-62). This attempt to incorporate charter carriers completely failed.

On June 22 1976 the United Kingdom, which was unhappy with the market share held by BOAC, denounced Bermuda I which therefore expired in one year's time (Haanappel 1984, 40). In the resulting negotiations, the UK sought to set capacity at a predetermined basis, to secure higher fares, and to limit US airlines' "beyond" rights from British points. In the new agreement of July 23 1977, only the latter was achieved. The United States and Britain also agreed to have a dual designation of airlines on two routes. Four new American cities were added to points that could be served from London by a carrier of both countries; Atlanta, Dallas/Fort Worth, Houston, and San Francisco, and a British carrier received the right to operate Seattle-London. Braniff would begin service from Dallas and Delta from Atlanta. National had already begun service to London from Miami in early 1976 (Gidwitz 1980, 62).

The decision to include the two city pairs with dual designation was at least partly the result of a decision of the Court of Appeal in the UK in which Lord Denning found the minister did not have the right to de-designate Laker Airways between London and New York. Peter Shore, the Secretary for Trade, had overruled the British CAA following the return of the Labour Party to power and had cancelled Laker Airway's permission to operate (Sampson 1984, 149-150).

Although capacity control was not achieved, the British did secure some safeguards on capacity. The governments were to receive forecasts of traffic and proposed schedules of service from the carriers and if there was a disagreement the governments would confer. Where no agreement was reached the carriers would operate the average of their forecasts.

In the area of tariffs, it was agreed that in an open rate situation both governments would need to give permission for the implementation of new fares, and a timetable was laid out for the submission and approval of fare filings (Doganis 1985, 56-57).

The bilateral also explicitly included provisions on charter services. The existing US-UK Memorandum of Understanding on Passenger Charter Air Services of April 1977 was inserted into the new official bilateral air agreement (Haanappel 1984, 41).

Although initially hailed as Bermuda II, this bilateral did not, however, become the pattern for subsequent bilaterals on the North Atlantic because of new developments in the United States. There was also soon pressure from the American government for amendments to be made. Its most important influence on the North Atlantic, and on the evolution of fares, was that it was under its provisions that several new carriers, including most importantly Laker Airways, secured their entry into the North Atlantic market.

9.3 US DEREGULATORY PRESSURE ON IATA

A new administration took office in Washington under President James Carter at the beginning of 1977. This administration encouraged the deregulation of the domestic airline industry and sought to ensure that American carriers enjoyed an international environment which was as free as possible from government regulation or apparent cartel structure. To accomplish this, the Carter administration negotiated a series of liberal bilaterals, several with European countries, and appointed Alfred E. Kahn as CAB chairman, along with other members favourable to deregulation. Under their auspices, rate making between Europe and the United States was withdrawn from the IATA traffic conferences and the entry into the North Atlantic market of a number of new carriers was authorized, including Laker Airways. Their efforts were assisted by the relatively favourable industry and economic climate (Haanappel 1984, 141) that had followed the recovery from the First Oil Shock.

Shortly after his appointment in early 1977, A. E. Kahn granted Laker his permit, seeing "a golden opportunity to encourage imagination and innovation in the North Atlantic air travel market" (Sampson 1984, 150). Only three years earlier, in June 1974, Laker had been refused his permit to operate Skytrain by the CAB, and during the "oil panic" PAA and TWA were allowed to negotiate with BA and British Caledonian on jointly reducing their capacity to cut their loss-

es on the condition that no additional carrier, like Laker Airways, was allowed entry.

Freddy Laker's "Skytrain" began its operations in June 1977, ushering in a period of intense price competition. In 1978 Sky Train's one-way fare was $135US peak/$115.60US basic (Taneja 1980, 86), making a price of 2.4/2.1 cents per km compared to a per km price of 7.4 cents for an average normal economy fare (ICAO Bulletin, June 1980, 55).

By February 1982 Laker Airways had been driven into bankruptcy. The Second Oil Crisis and the following recession had raised costs and reduced the demand for travel. The English pound, in which most of his revenues were denominated, had declined relative to the American dollar, in which most of his debts were denominated. The scheduled carriers on the North Atlantic showed no hesitation about engaging in cut-throat price competition and in October 1981, despite the severe losses that they were suffering, the Big Three on the North Atlantic, PAA, TWA and BA, applied for, and received, permission to bring their minimum fare down to $249US. In addition, various European carriers (British Caledonian, Sabena, SAS, Swissair, Lufthansa, and UTA) put pressure on McDonnell Douglas and General Electric to cease their financial assistance to Laker and Prime Minister Margaret Thatcher, when applied to for assistance by Laker, decided she could not impose an open-ended situation on her "poor taxpayers" (Sampson 1984, 149-158).

1976=100 (INDICES ARE YEARLY AVERAGES)

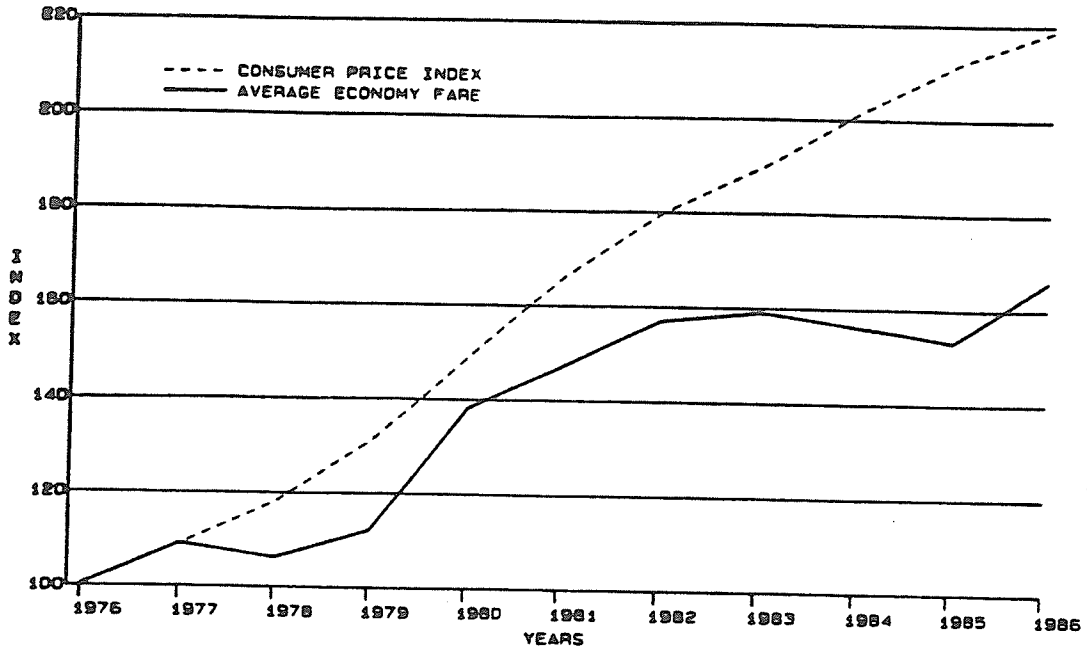

Figure 9.1: North Atlantic Fares and the Consumer Price Index

1976-1986

Note: OECD weighted composite price index for USA, Canada, and Western Europe

Source: IATA (1986b) p. 36.

Laker's demise in 1982 did not signal, however, a major rise in North Atlantic fares. Although the OECD weighted price index for Canada, the United States, and Western Europe recorded a steady rise from 1982 until the mid 1980s, it was not until 1986 that there was any sort of sizeable rise in the index of the average Economy fare on the North Atlantic (Figure 9.1).

The agenda of President Carter's administration for international air transport was set out in his August 31, 1978 Policy Statement. These were: 1) improved opportunities for "innovative" pricing; 2) liberalization of charter rules; 3) elimination of restrictions on capacity, frequency, and route and operating rights; 4) elimination of discrimination and unfair competitive practices faced by U.S. airlines; 5) the ability to designate multiple U.S. airlines; 6) authorization of more cities for direct flights and improving the integration of domestic and international service; and 7) flexibility to develop and facilitate air cargo services (Haanappel 1984, 51). The method of achieving this agenda was to "divide and conquer" the Europeans by concluding new bilaterals with very liberal terms with any states that would agree, and then allowing the threat of the diversion of traffic to force recalcitrant states to conclude similar liberal bilaterals (Taneja 1981, 60).

The starting point was the Netherlands. It was known that the Dutch were concerned over Bermuda II and other recent developments in North Atlantic aviation. They disliked close capacity regulation and bilateral tariff setting which seemed to be the direction that Bermuda II was moving. They also feared Laker Airways might divert traffic which would otherwise have flown KLM. In addition, Belgium had just moved to liberalize charter services with the United States.

The United States invited a Dutch delegation to discuss a new agreement providing for greater tariff and charter freedom (Wassenberg, 1978, 139). The final agreement, signed March 1978, resulted in an agreement that: a) covered both scheduled and charter services; b) accepted multiple designation; c) gave American carriers unlimited Fifth Freedom rights before and beyond Amsterdam; d) gave Dutch carriers the rights from the Netherlands to New York, Chicago, Houston, Los Angeles, and one more point to be named by Holland and from the Netherlands via Montreal to Houston; e) had no capacity or frequency restrictions; f) had no restrictions on Sixth Freedom traffic; g) provided for unlimited charter rights to any point in either country with country of origin rules; and h) provided country of origin rules for scheduled traffic, with governments limiting their intervention to prevent predatory or discriminatory pricing, and requiring that airlines set their tariffs on the basis of commercial considerations.

At the time the agreement between the Netherlands and the US was reached there were negotiations ongoing with West Germany and Belgium. These states signed basically similar agreements with the US at the end of 1978. There was also a "liberal" bilateral signed with Israel in 1978 which provided for a "double disapproval" article on tariffs. Under this both governments had to disapprove a new tariff proposed by an airline before it could be prevented.

The success of the United States in obtaining further "liberal" bilaterals on the North Atlantic for all practical purposes ended at this point, although in 1980 a further liberal bilateral was achieved with Belgium and one was signed with Jordan (Haanappel 1984, Appendix III). Italy and France both refused to sign a "liberal" bilateral. In 1980 the bilateral with the United Kingdom was amended, but the US did not gain any significant concessions on Fifth Freedom rights or tariff liberalization. It did, however, get double designation on two routes, Boston and Miami, and it was also agreed that up to twelve new gateways be opened in stages by 1984 (Doganis 1985, 56-59).

In May 1982, President Reagan announced a new negotiation policy in which the United States would emphasize partial deals to take care of immediate problems rather than seeking new full-scale "liberal" agreements (Haanappel 1984, 51-52).

Although President Carter's policy was not successful in helping the airlines of the United States to improve their market share (Doganis 1985, 66), it did have an important role in creating an environment that forced down fares on the North Atlantic in general. Canada's scheduled carriers dared not allow fares between New York and a major destination in Europe, like Amsterdam, to get out of line with that from Toronto or Montreal because a sizeable part of their traffic would soon be diverted to the carriers serving New York-Amsterdam. Similarly a major European carrier could

not afford to let the fare from New York or any major American gateway to a major destination in Europe get out of line with the fare from that American gateway to its own points of operation. The existence of a "liberal" bilateral between the United States and Amsterdam, Brussels, and Frankfurt, together with a willingness on the part of the United States to designate low price-carriers, and the absence of IATA's unanimity role on the entire North Atlantic, proved sufficient to keep fares at or below their lowest practical level.

The willingness of the United States to designate new carriers had an important impact on prices. New American carriers have generally used price in an attempt to carve a niche for themselves on entering a new market, even in cases where they are a "normal" scheduled carrier rather than a former charter carrier or a "low-fare" carrier like People's Express. This use of low prices on entry is demonstrated by the average yield per km. of the US carriers operating on the Atlantic in 1979. PAA and TWA enjoyed 8.27 and 7.14 cents US per km. respectively. National, which had entered out of Miami in 1969, was at 6.12 cents; Delta, which had entered out of Atlanta, and Braniff, which had entered out of Dallas, in 1978, were at 5.74 cents and 6.65 cents respectively; and Northwest, which had taken up PAA's rights to Copenhagen in 1979, was also at 5.65 cents. (Doganis 1985, 63).

It is also true, though, that the CAB has on occasion tended to grant deep discount fares more easily to new or potential entrants rather than to established American carriers. An example of this was its granting of their suggested new fares to Braniff and Trans International and the denying of TWA's new suggested fare in the US-France market (Taneja 1980, 69)

The purpose of these low fares by new entrants was liable to be multifold. Their chance of obtaining permission from the CAB was improved. The lower fare might divert traffic from other routes, helping the carrier to increase its market base and make the service more economically viable. Finally, a low fare might encourage any incumbent carrier to withdraw. Then, once the carrier was established, it could raise its fare to a more economic level for the long run (Taneja 1980, 69).

The existence of rights by the US to the multiple designation of airlines on the routes to Amsterdam, Brussels, and Frankfurt, and the opening of numerous new gateways to the United Kingdom, each of which might have a different American carrier designated on it, provided a very large number of American carriers with the opportunity to start service. By 1983 there were twelve American carriers operating on the North Atlantic: PAA, TWA, Northwest, World Airways, Delta, American, Air Florida, People's Express, Arrow Airways, Transamerica, Capital, and Flying Tiger (which was carrying passengers on some of its Boeing-747 flights to Brussels)

(ICAO 1983). This, of course, excludes those like Braniff, which went bankrupt, and National, absorbed by PAA, no longer operating on the North Atlantic.

Finally, in 1978 the CAB under Alfred Kahn acted to begin the process by which IATA was removed from playing a role in setting fares between the United States and Europe and which split off the formal decision making process for determining fares between Canada and Europe from that between the United States and Europe.

Since "price-fixing" and "common agency selling", among other IATA activities, were illegal under American law, it was necessary that the participation of American airlines in IATA be exempted from the American anti-trust law's operation. The CAB had approved IATA's traffic conference machinery for setting fares on February 19 1946 for one year. It had renewed this approval in 1947, 1948, 1952, and 1955, and in that year made the approval "permanent".

The initial decision to approve IATA was based on three stated reasons: 1) since the CAB had limited power on international rates in 1946, it was not in the public interest to give foreign powers unilateral control over the rates of U.S. carriers; 2) the traffic conference mechanism could not be considered a secret price-fixing agreement since the rates agreed by carriers were subject to CAB approval; and 3) it provided assurance to European carriers that fares

could be kept at a level sufficient to allow the development of their flag carriers (Taneja 1980, 79).

In 1978 the CAB's power to exempt American carriers was provided by Sections 412 (b) and 414 of the United States Federal Aviation Act of 1958. This exempted airlines from the anti-trust provisions concerning cooperative agreements where those agreements were not "adverse to the public interest or in violation of the Act" (Gidwitz 1980, 96).

On June 12 1978 the CAB announced it had made "tentative findings" and had come to a "tentative conclusion" that its approval of IATA Traffic Conference Resolutions was no longer in the public interest. It, therefore, issued a Show Cause Order to IATA and other interested persons why they should not be made permanent. In its order the CAB made reference to the development of international air transportation in the previous 23 years and to the change in the rate making powers of the Board and the economic policies surrounding the use of those powers. It also noted the relaxation of charter rules resulting in lower air fares. Interested parties were invited to comment on six specific questions: 1) the costs and benefits of such a disapproval; 2) the system likely to replace that existing; 3) the extent and effect of US anti-trust law application on airline rate-making if approval was withdrawn; 4) the adequacy of the Board's powers to deal with problems; 5) the likelihood of reasonably competitive pricing; 6) the possibility that dif-

ferent regions of the world, or phases of business, or other differences would warrant differences in policy or treatment (Haanappel 1984, 29, 158-159).

All concerned parties were well aware that such a withdrawal of immunity could affect not only American carriers but also foreign carriers which conferred to set tariffs on US-bound routes (Gidwitz 1980, 98). The CAB received a large number of submissions in response to its action. Some 45 other countries responded through their foreign ministries or civil authorities, almost all in opposition to the CAB position. A large number of international airlines also made submissions in opposition. IATA was also supported by regional governmental organizations and airline associations along with associations of travel agencies, freight forwards, and others. The submission by IATA stressed the differences between international and domestic aviation and argued that the immunity granted to airlines was still in the public interest. The Departments of State and Transportation urged the CAB to act with caution. The Department of Justice supported the CAB as did consumer groups (Gidwitz 1980, 98-99).

Even before the CAB had issued its "Show Cause" order, IATA had appointed a Task Force under the Chairmanship of Air Canada's President Claude Taylor in 1977 to examine Traffic Conference Procedures. The Traffic Conferences, and particularly that for the North Atlantic, had been having

increasing difficulty in reaching agreement and IATA had come under attack already from the CAB, from the deregulation movement in the United States, from consumer groups, and from some academics.

9.4 THE RESOLUTION OF THE CRISIS AND IATA'S RESTRUCTURING

Only 21 days after the CAB's "Show Cause" order had been issued, a Special IATA General Meeting was held on June 30 and July 1 1978 to approve the recommendations of the IATA Executive Committee to restructure the Traffic Conferences making carriers' participation in rate making activities optional. After this special meeting the Executive Committee approved the amendments to the Provisions for the Regulation and Conduct of the IATA Traffic Conferences. They were reviewed at the 34th Annual General Meeting in the fall of 1978, and submitted to the CAB on November 2 1978. On May 14 1979 they received interim approval and anti-trust immunity pending further proceedings (Haanappel 1984, 62-63).

The approval also limited the questions covered by the "Show Cause Order" to the matter of the Traffic Conferences. It split off the question of IATA's agency activities and made them subject to separate study. It also permanently approved some of IATA's trade association and facilitation Resolutions (Haanappel 1984, 159).

After a legislative hearing in October, the CAB announced on December 5 1979 that it intended to issue an Order granting approval and anti-trust immunity for two years to the ratemaking machinery of IATA subject to a number of conditions. On April 15 1980 the CAB made a tentative Order that IATA's ratemaking machinery did substantially reduce competition to the United States but international considerations required that the machinery be approved for two years before the Order became final. The two-year approval was subject to the conditions that US carriers could not participate on the North Atlantic in IATA ratemaking, that representatives from the CAB and IATA could attend IATA Traffic Conferences, and that IATA clarify its "innovative fare and rate" provisions.

In May 1981 the Order was made final in its essential features. Its effectiveness, however, was stayed until September 1981, then stayed again until January 1982, and then stayed again until March 1982. Finally, on March 12 1982 the effectiveness of the May 6 1981 Order was stayed indefinitely until further Order of the Board. This indefinite stay was necessary since the US-ECAC Memorandum of Understanding on North Atlantic Air Tariffs required that no Party prevent or require the participation of a carrier in multilateral carrier tariff co-ordination. The First Memorandum was signed in May 1982 and, though intended to be effective on July 1 1982, actually went into force on August 1 1982 (Haanappel 1984, 161-164).

When signed, the First Memorandum covered most of the countries of ECAC; others were still negotiating final "pricing zones". It provided that airline participation in multilateral tariff talks was neither required nor forbidden by the parties to the agreement as a pre-condition to the approval of fares. This permitted IATA to convene special North Atlantic fare conferences for both IATA members and non-members (Haanappel 1984, 164).

America's international carriers had withdrawn from IATA in response to the first SCO (Show Cause Order). Some rejoined IATA when the 1979 SCO legitimized American carriers belonging as trade association members (Doganis 1985, 165). Even in 1986, only American, Eastern, Flying Tiger, PAA, TWA, and United were IATA members participating in tariff coordination, and only a few more belonged to the trade association only (IATA 1986b, 5).

In return for US actions, IATA adopted an Addendum to its Provisions for the Conduct of the IATA Conferences permitting meetings of both IATA and non-IATA scheduled airlines for tariff discussions on the North Atlantic between the U.S.A. and Europe. This Addendum was approved by the CAB in September and October 1982. (Haanappel 1984, 66) Thus in January 1983, Air Florida, Arrow, Transamerica, and World participated along with the IATA carriers in reaching an agreed fare proposal on most North Atlantic levels for the April 1 1983-March 31 1984 period (Haanappel 1984, 165-6).

The Memorandum established "zones of reasonableness" for fares between the United States and the participating countries in Europe. Within these zones there was to be no governmental interference in the fares charged by carriers. Outside the zones the relevant bilateral air agreements applied. The zones were established with reference to the "standard foreign fare levels" (SFFL) developed in 1980 on the basis of US airline costs by the CAB. The SFFL was to be adjusted every four months in line with movement of costs of carriers. The five fare zones were denominated B for economy class, A-2 for business, A-1 for first, C-1 for discount, and C-2 for deep discount fares. Low season economy fares were typically to have a "zone of reasonableness" of 80-120 per cent of the relevant SFFL. First class fares normally had "zones of reasonableness" whose lower bound was between 130 and 160 per cent of the SFFL and the lower bound of deep discount fares' "zone of reasonableness" was either 50, 55, or 60 per cent of the SFFL. The Memorandum provided variations for peak and low season for some countries, and for directional imbalances for some countries. The Memorandum also set up two working groups, one to develop a permanent agreement, and one on tariffs (Haanappel 1984, 164-166, 190-198).

After the First Memorandum expired it was renewed on more than one subsequent occasion. The European members of ECAC which are signatories of the Memorandum in force have varied

during its several incarnations, depending on the success of the negotiators in reaching agreements between the United States and their particular country. Although the principles of the Memorandum are agreed upon multilaterally, the exact reference levels and zones are agreed upon bilaterally. Several countries, for example, which were not part of the first Memorandum, joined the second. The reverse is also true, members of an earlier memorandum have not joined a subsequent one. Denmark, Sweden and Norway, for example, joined the second after the USA granted SAS new gateways in the United States. Italy, for example, which was a member of the first memorandum was not expected to join the second (Haanappel 1984, 165-166).

Canadian representatives were active in the international discussions that followed the Show Cause Order and led eventually to the first US-ECAC Memorandum. In January 1980 Canadian representatives met in Paris with those from the US and ECAC to discuss matters concerning North Atlantic scheduled and charter policy and the exchange of statistics. They were present at the meeting in February 1981 at Washington on the North Atlantic with US and ECAC representatives. (Transport Canada, 1979/80; 1980/81). Canada was still part of the negotiations in early 1982 but did not become a party to the first Memorandum or to its successors (Haanappel 1984, 163).

The result was that fares between Canada and Europe would be decided through the IATA Traffic Conference system as a sub-area of the North Atlantic area while the fares between the United States and Europe would be decided in terms of "zones of reasonableness" under a US-ECAC Memorandum of Understanding. In the US-Europe sub-area, the fares being charged by the airlines would still be decided through IATA hosted meetings but these might include non-IATA scheduled carriers and might not cover all countries in Europe.

In conclusion, charter traffic was growing rapidly on the North Atlantic at the start of the 1970s and the governments of Europe and North America in 1973 acted to remove the main barrier to universal access to charter travel by replacing affinity charters with ABCs or similar. IATA failed to find a way of including charter carriers in a method of establishing minimum fares on the North Atlantic. A new administration came to power in Washington that, in the spirit of deregulation sweeping the USA, wished to extend the benefits of a deregulated environment to the travellers and American carriers on the North Atlantic. As the last step in the process, which had included the negotiation of new bilaterals and the addition of new carriers to the North Atlantic, the USA moved to take the regulation of fares from the control of IATA by forcing the withdrawal of American carriers from that organization through the Show Cause Order. The result was a new system of fare negotiation on the North Atlantic. The Canadian and US sub-areas were split apart

with the Canadian portion remaining under a system similar to the old one and the American one becoming one "hosted" by IATA but with much greater direct input by governments than the old one. American actions also resulted in downward pressure on scheduled fares.

9.5 CONCLUSION

The structure in which scheduled rates are made on the Canadian North Atlantic has stood the test of time remarkably well and is little changed from what it was forty years ago. It is now split off from the American North Atlantic but continues to evolve more or less in tandem with it. Chapter X will now examine the evolution of fares in detail.

Chapter X

THE EVOLUTION OF FARES

The structure and level of air fares have changed greatly during the decades since the late 1940s. During the 1940s and 1950s, the fall of scheduled air fares almost completely drove the transatlantic liner from the seas. Then, during the 1960s and 1970s, scheduled air fares evolved in response to the challenge from the charter market and to the large improvements in aircraft economics. However, the rise in fares after the early 1970s had an adverse impact on the growth on the North Atlantic of traffic and the the failure of fares to keep up with the changes in costs during the period from the late 1960s to the mid 1980s had adverse effects on airline profitability and the airline industry on the North Atlantic. As a particularly efficient carrier, Air Canada was frequently in the vanguard of the drive to introduce lower fares to compete with charter carriers.

This chapter will be divided into a number of sections. The first will follow the evolution of scheduled fares. The second will look at the role played by Canadian carriers in several disputes in IATA over scheduled fares. The third will compare fares and costs at several points in time. The fourth will comment on the evolution of the fares of alternatives to scheduled airlines.

10.1 SCHEDULED FARES ON THE NORTH ATLANTIC 1946-1987

Until the 1978 Show Cause Order of the American CAB caused American airlines to withdraw from IATA, the history of the evolution of fares on the Canadian North Atlantic is identical with that for the North Atlantic as a whole. It is possible, therefore, to discuss the history of the former by following the latter. Since fares on the Canadian North Atlantic were calculated to move in tandem with that of New York-London to avoid any diversion of traffic, it is also possible to use such a series to follow the price movements of fares between Europe, including the British Isles, and Canada. Even after 1978, statistics relating to the level of fares between the US and Europe remain valuable in providing a picture of the movements of fares on the Canadian North Atlantic because competition has prevented any wide divergences occurring between the two markets for any extended period of time.

10.1.1 The 1940s and 1950s

Air travel emerged from World War II as a single class service. During the period of piston-driven propeller aircraft on the North Atlantic, the carriers gradually developed a range of fares. Throughout the period, and until 1963, a discount of 10 per cent remained available on a return ticket. A return ticket was thus normally 1.8 times the one-way fare, i.e. 1.8 x single.

In 1952 the first step was taken to provide a range of fares available throughout the year when the single class fare was replaced by first class and tourist. The problems created for the carriers by the existence of an "off season" had already led to experimentation with the fare structure to encourage travel during times of reduced demand. In 1948 and 1949 a 30 day excursion at 1.33 x single was made available for three months and six months respectively. In 1949, 1950 and 1951 a 15 day excursion at 1.1 x single for North Americans was available from January to March. In 1950 the concept of an east-bound off season of September to March and a west-bound off season of December to June was introduced. The result was that a 1.8 x single fare was available for July and August, a 1.3 x single was available for December-March inclusive, and during the other six months a return fare of 1.57 x single was available (IATA Bulletin no. 15 June 1952, 51). In 1955 a family fare was tried.

In 1958 a third class was introduced, economy. This less expensive fare was accompanied by less service, a "sandwich type" meal rather than the full meal served in tourist, and a reduction in the pitch of the seats. By 1960 the lower economy fare had completely replaced tourist. This had the by-product of making aircraft whose seat configurations were suitable for the North Atlantic unsuitable for service in North America and vice versa.

The entry of turbo-props in December 1957 and of jet turbine aircraft in October 1958 raised the question of what the relationship of fares between jet aircraft and propeller aircraft should be. After the initial Honolulu Composite conference floundered on this question, the matter was settled six months later when it was decided that the basic fare structure set by IATA for the world's trunk routes would provide for two classes, first class and economy, on the basis of the use of jet aircraft. Propeller aircraft tariffs would be discounted by the allowance of lower fares or more liberal service conditions.

During this initial developmental period of civilian aviation on the North Atlantic, American carriers, in particular PAA, were central to the development of new and lower fares. In 1945/6 PAA sought the reduction of the then basic North Atlantic fare of $375US to $275US instead of the $325US fare finally agreed. In 1949 it advocated the creation of tourist class fares. In 1956 it advocated the creation of economy class fares and at levels considerably below those at which they were finally introduced.

It was also in 1956 that the first clash occurred between the CAB and IATA over fares. The IATA Traffic Conference at Miami in the fall of 1955 had proposed the increase of first class fares by 10 percent to take effect October 1 1956. The CAB wished that any such increase coincide with the introduction of a tourist type class of fares. The final

settlement involved the acceptance by the CAB of the 1956 increase of 10 percent, with the fare package to run until March 31 1958, at which time a tourist class of fare was to be introduced. The tourist class fare on introduction could not be less than $232US (Haanappel 1978, 132-133). It was actually introduced at $252US (Table 10.1).

The lowest regular fare available on the North Atlantic during high season rose faster than the U.S. consumer price index during 1948-1951 (Table 10.2) but slightly slower than the Canadian consumer price index. With the introduction of tourist class, the fare index fell dramatically in 1952. It fell again slightly in 1953 and then remained stable until 1958. In 1958 it declined sharply again with the introduction of economy class and did not increase markedly until the spring of 1960. Between 1948 and 1959 the fare index declined from 100 to 77.5 while the US consumer price index rose from 100 to 121.1 and the Canadian consumer price index rose to 130.4 from 100.

The above discussion does not take into account the movement of the exchange rate between the Canadian and US dollar. The North Atlantic fare index used was denominated in American dollars and the Canadian dollar in 1959 had risen to 0.959 against the American dollar from 1.000 in 1948. The North Atlantic fare, therefore, had fallen more between 1948 and 1959 in Canada than in the US. In the interval, the Canadian dollar had fluctuated between 1.100 against the

TABLE 10.1

Fares New York-London 1945-1964

In $US

Year		Basic	First	Tourist	Economy
1945		375			
1946		325			
1947		325			
1948	April	325*			
1949		333*			
1950	April	350			
1951	April	375#			
1952	May		415	290	
1953	April		395	275	
1954	April		400	275	
1955	April		400	275	
1956	April		400	275	
1957	April		400	275	
1958	April		435	315	252
1959	April		440	320	252
1960	May		462	320	257
	July		500		270(Prop. 250/240**)
1961	April		500		270(Prop. 250/240)
1962			500		270(Prop. 250)
1963	May##		475		270(Prop. 250)
	July		475		263(Prop. 243)
1964	April		375		255/210***

* Although Straszheim records these fares for the years 1948 and 1949, the IATA Bulletin states the fares moved directly from $325 to $350 in March 1948.
# In October 1951 the IATA Bulletin records the basic fare moved to $395.
In 1962 IATA raised the price of a return ticket from 1.8 x Single to 1.9 x Single from April 1 1963.
** High season/low season fares for propeller aircraft.
*** High season/low season fares.

Sources: p. 273 of Straszheim (1969), p. 458 of Davies (1964), p. 51 of IATA Bulletin no.15 June 1952.

American dollar in 1949 to 0.959 in 1957 and 1959 (Canada Yearbook 1956, 1121; Department of Finance June 1987, 112).

TABLE 10.2

CPIs vs New York-London Fare Index

1948=100 For All Indices

Year	US CPI Index	US CPI Pt. Ch.	CAN. CPI Index	CAN. CPI Pt. Ch.	Fare Index	Fare Pt. Ch.
1948	100.0	-	100.0	-	100.0	-
1949	99.0	-1.0	103.0	3.0	102.5	2.5
1950	100.0	1.0	106.0	3.0	107.7	5.2
1951	108.0	8.0	117.2	11.2	115.4	7.7
1952	110.4	2.4	120.1	2.9	89.2	-26.2
1953	111.2	0.8	119.0	-1.1	84.6	-4.6
1954	111.7	0.5	119.7	0.7	84 6	0.0
1955	111.3	-0.4	119.9	0.2	84 6	0.0
1956	113.0	1.7	121.7	1.8	84 6	0.0
1957	116.9	3.9	125.6	3.9	84.6	0.0
1958	120.2	3.3	129.0	3.4	77.5	-7.1
1959	121.1	0.9	130.4	1.4	77.5	0.0
1960	123.0	1.9	132.0	1.6	79.1M	1.6
					83.1J	5.6*
1961	124.3	1.3	133.2	1.2	83.1	0.0
1962	125.8	1.5	134 8	1.6	83.1	0.0
1963	127.3	1.5	137.1	2.3	87.7M	4.6
					85.4J	2.3*
1964	129.0	-2.6	140.6	3.5	82.8	-2.6

M = May value
J = July value
* versus previous year

Sources: Straszheim (1969) p.272, Leacy (1983) series K8-18, and Table 10.1 .

10.1.2 The 1960s

During the 1960s scheduled fares were generally held down and, in fact, they declined considerably in 1964. This was due to a combination of technological advances as jets were

introduced, over capacity in the early 1960s, and the development of a challenge to scheduled carriers from the charter market in the mid and later 1960s.

The 1960s opened with a sizeable increase in the economy fare which had remained constant since its introduction in 1958. It then again remained constant until the spring of 1963.

At the beginning of the 1960s, the scheduled airlines on the North Atlantic discovered that, although the introduction of jet aircraft had led to a reduction in unit operating costs, their introduction had created a serious problem of overcapacity. American carriers favoured a reduction in fares to attract traffic to fill the empty seats and European carriers felt the correct option would be an increase in fares. The American viewpoint also resulted in American carriers, particularly PAA, going heavily into the North Atlantic charter market as the 1960s progressed.

In the fall of 1962 at the IATA Composite Traffic Conference at Chandler, Arizona, it was decided to reduce the discount on return tickets from 10 percent to 5 percent world wide. On the North Atlantic this change would affect economy fares but not those for first class. The CAB disapproved the proposed fare increase and the North Atlantic moved into an open rate situation on April 1 1963.

At this time, although the CAB could disapprove IATA fares, it had virtually no control over fares filed individually by foreign carriers. This the European carriers began to do.

PAA and TWA, at the insistence of the CAB, filed the lower pre-Chandler fares. The governments of European countries, however, required PAA and TWA to charge the higher fare. In the case of Great Britain, the travellers arriving were charged the difference and the money was deposited in a trust account for PAA and TWA pending the settlement of the dispute. The British government also threatened to bar PAA and TWA from its airports if they did not comply. The CAB and the American government reluctantly permitted PAA and TWA to apply the Chandler fare.

A special IATA Conference was convened at Montreal to reconsider the matter. It developed a compromise package which reduced the increase to economy fares from 4.6 per cent to 2.3 per cent for mid-July, 1963 (Table 10.2). Then IATA authorized a sizeable fare reduction for 1964 in both first class (-21 per cent) and economy (-3 per cent on the peak fare but -20 per cent on the basic fare). The overall result was that in 1964 the economy fare index was 0.3 points lower than it had been in 1960. In all, since 1959, the air fare index had risen by 5.3 points while the US consumer price index rose by 8.9 points and the Canadian price index rose by 10.2 points (Table 10.2). By 1964 the Canadi-

an dollar had declined to 1.079 against the American dollar (Department Finance June 1987, 112) which meant that in Canadian terms the North Atlantic air fare had risen somewhat more than is indicated in Table 10.2.

Perhaps the most important outcome of the Chandler dispute was that it moved the American Congress and CAB to have a more liberal attitude towards charter carriers. The growth of charter traffic encouraged the IATA carriers to introduce a whole series of innovative fares. Excursion fares were already available in 1960. In 1962 these were joined by group fares. In 1966 inclusive tour fares were available and in 1969 so were contract bulk inclusive tour fares. The result was that between 1960 and 1969 the economy fare fell by 13.4 per cent while the lowest available fare fell by 54.3 per cent (Table 10.3).

The controversy over visual inflight entertainment, which began on its introduction in 1964, was resolved in 1966 by the introduction of a "fee for use" of $2.50US. The controversy had resulted in an open fare situation when the CAB in June 1965 rejected a fee package to which a proposal to ban visual entertainment had been tied. IATA had maintained the status quo for that summer and produced a new fare package in the fall (Haanappel 1978, 135).

The 1960s closed in 1969 with an increase in first class and economy fares. This was the first increase in these

TABLE 10.3

Return Fares New York-London 1960-1969

$US

Year	1st Cl.	Normal Econ.	Econ. Exc.	Econ. Group	Econ. IT	Econ. CBIT
1960	900	485	350			
1961	900	485	350			
1962	900	485	350	300		
1963	902.5	500	350	310		
1964	700	395	300	320		
1965	700	395	300	320		
1966	700	395	300	245	260	
1967	700	395	300	215	230	
1968	700	395	300	215	230	
1969	750	420	300	175	230	160

Source: IATA (1969c) 47.

fares since the 1964 price reduction. It occurred in response to build up in inflationary pressures that occurred in the world economy in the late 1960s.

10.1.3 The 1970s

During the 1970s the scheduled fare structure had to respond to a number of challenges. Inflationary pressures, intensified by the oil crises, increased airlines costs. The growth of charter carriers in the early 1970s, and of Skytrain in the later 1970s, increased competition. The introduction of wide-bodied carriers increased capacity in

the early 1970s at a time when charter carriers were already increasing competition.

As the 1970s opened, there was, as mentioned above, a rise in inflation presures that already had led to a fare increase in 1969 and would do so again in 1970. The situation facing the airlines was not assisted by the arrival of the Boeing-747 in 1970 which led to a great increase in available capacity on the North Atlantic. PAA had placed the first order for 25 Boeing-747s with an option on 10 more on April 15 1966. Currency changes also began to occur to make life more complicated for transatlantic carriers. Fares, however, tended to rise more slowly on the North Atlantic than in some areas (Haanappel 1978, 135).

In 1971 an open fares situation occurred on the North Atlantic. The Belgian government did not approve the fare package for April 1971-March 1972, which maintained the status quo, and instructed its carrier, Sabena, to introduce a low Youth fare of $220US Brussels-New York return. The other carriers on the North Atlantic moved to introduce similar fares of their own, the lowest providing transatlantic return service at $199. IATA held a series of meetings to develop a new package of fares and finally adopted one for the period April 1, 1972-March 31, 1973. The new package provided for youth fares equal to the 22/45 day excursion. A proposal during this period to introduce an APEX fare was defeated by a veto by Lufthansa (Haanappel 1978, 135-136).

The charter market at this time was still receiving a great deal of encouragement from the discrepancy between charter fares and the scheduled fare alternatives. At the end of the 1960s a typical charter fare New York-London was less than half of even the peak 22/45 day excursion fare (Table 10.4).

The July Conference at Montreux in 1972 failed to reach an agreement on the fare package for 1973/74. American carriers when filing individual fares followed the CAB's Statement on International Air Fares of September 27 1971 which had called for movement towards lower normal fares and higher excursion fares designed to cover the full costs of air service. The fares filed by European carriers generally maintained the existing pattern of low excursion fares. In 1972 the US Congress had given the CAB general rejection and suspension power over international air tariffs. Using this power granted in the new Section 100(j) of the Federal Aviation Act, the CAB approved the fares filed by US carriers in January 1973 but then disapproved those filed by nine European carriers, including BOAC.

To avert the looming crisis IATA achieved a new fare package at the London Conference in March 1973. It covered the period April 1 to December 31 1973, providing for a six per cent across the board increase for fares valued in American dollars to reflect the then recent decline in the American currency.

TABLE 10.4

Return Fares New York-London 1969-1977

$US

Fare Type	1969	1970	1971	1972	1973	1974	1975	1976	1977
F. Class	750	782	782	829					
Economy									
Basic	420	452	452	479	430	482	584	584	547
Shoulder	-	-	-	-	484	540	626	626	
Peak	510	552	550	583	590	652	764	764	
Excursion									
14/17-21/28									
Basic	300	322	322	342	349	424	509	541	473
Peak	350	382	382	405	412	496	594	631	
22/29-45									
Basic	250	272	272	288	219	285	363	363	434
Shoulder					240	304	393	432	
Peak	295	332	332	352	313	389	493	527	
Affinity									
Basic	194	197	197	209					
Shoulder	212	217	217	230					
Peak	250	277	277	294					
14/21 ITC									
Basic			237	251	241	300	366	388	
Peak			302	320	304	375	462	490	
APEX									
Basic							295	295	
Shoulder							309	325	
Peak							399	410	
Skytrain									
(Sept.)									236
Sup.APEX									299
Stby/Bud.									256
Av. Charter	144			144	172	199			241

Sources: Adkins et al. (1982) 11, Haanappel (1978) 136, Cooper and Maynard (1971) 24, 36, ICAO Bulletin (May 1971) 21, 26, (May 1976) 41, (May 1977) 43, and Table 10.17.

Note: In 1970 the discounts for First Class and Normal Economy were discontinued. (ICAO Bulletin May 1970, 27 28)

The CAB accepted this package, although it did not simplify the fare structure or improve revenue as called for in its 1971 statement, to avert an open fare situation which it stated would cause travellers and air transport sellers "considerable inconvenience". The CAB's action was successfully challenged in the American court system but the decision did not lead to an abrogation of the initial approval (Haanappel 1978, 136-137).

The IATA Traffic Conference at Monaco in October 1973 worked out a fare package for January 1 1974 - October 31 1974 which provided for another 6% increase while maintaining the basic fare structure. It was rejected by the CAB and revised by IATA. The youth fare between the United States and Europe was eliminated and promotional fares were increased. The revised package was then accepted by the CAB on December 16 1973.

The package as finally accepted had the effect of diverting some US originating traffic to Canada where youth/student fares continued to be available. The CAB refused to reinstate youth fares in the summer of 1974 despite several proposals by American and foreign carriers (Haanappel 1978, 137-138).

In the spring of 1974 American, Canadian, and ECAC officials met at Paris to agree on guidelines for future rate-making. It was agreed that fares should be cost related,

capacity ought to be brought into line more with demand, and that charter fares ought to be settled on an inter-carrier basis. ABC and TGC fares were also authorized for the North Atlantic to replace affinity charter fares.

During the summer and fall of 1974 IATA convened a number of fare conferences on the North Atlantic. At the first one at Fort Lauderdale (Florida) a fuel-related increase of five per cent was approved for August 1 1974, which duly came into force. During the summer IATA attempted to develop, jointly with charter carriers, a single fare package for the North Atlantic which would include minimum charter fares. This ultimately failed. A group of major charter carriers from both sides of the Atlantic, including Wardair along with Overseas National, Saturn, Capitol, Spantax, JAT, and Transavia (Aviation Daily Sept. 24 1974 215:16, 121), opposed the IATA proposal of a peak season charter fare of between 2.45 and 2.55 cents(US)/km. as too high and had their October counter-proposal of 2.3 cents(US)/km. rejected as too low (ICAO Bulletin May 1975 30:5, 26).

As a result of the failure to obtain an agreement on a single set of North Atlantic fares, an emergency package of fares for the period November 1 1974 - January 31 1975 was developed in October at Geneva. This maintained the existing fare structure, subject to an average increase of 10 per cent. It also provided that the youth student fare from Canada would not be available to holders of American pass-

ports unless they were residents of Canada. The package was approved by the governments and was subsequently extended to March 31 1975 (Haanappel 1978, 138-139).

The fare package agreed upon by IATA in January 1975 for the period April 1 1975 - March 31 1976 made two major changes to the fare structure. It reinstated youth/student fares between the United States and Europe and provided for the introduction of APEX fares, the latter at a somewhat lower level than that suggested in 1974. It was accepted by the governments in its entirety (Haanappel 1978, 139).

IATA succeeded in agreeing upon a fare package for the period May 1 1976 - October 31 1976. It introduced special fares for supersonic air services, the Concorde entered commercial service that year, along with a "Super APEX" fare set at the level of ABC fares between Canada and Europe. The capacity limitation between the United States and Europe for APEX fares was raised from 20 per cent to 25 per cent and the similar limitation between Canada and Europe was removed entirely. Existing fares were raised by up to 10 per cent. Although the package was approved by Canada and Europe, the CAB disapproved the increase in normal fares, and all fares between Miami and London as it felt that National Airlines was making excessive profits on this city pair (Haanappel 1978, 139). The CAB's action resulted in another open fare situation on the North Atlantic. The subarea of the North Atlantic between Canada and Europe

remained open until July 1 1980 (ICAO Bulletin June 1980, 55; June 1981, 67).

A "limited agreement" under IATA's new Traffic Conference structure was made by IATA carriers and accepted by the CAB for April 1 1977 - March 31 1978. It provided fare increases of 1 to 19 percent, moved to a two-season structure, and replaced the 22/45 day excursion with a 14/45 day one (Haanappel 1978, 139). The CAB's Show Cause order of June 1978 led to the withdrawal of the American carriers from IATA.

The important event of 1977 with regard to the fare structure of the North Atlantic was not the limited IATA agreement but the entry into service of Laker's Skytrain in September. Laker's price of $236 for a traveller who flew both directions on Skytrain was 43 percent of the basic economy fare (Table 10.4). His fares, and those of other new entrants into the North Atlantic in the next decade, would force fares to, and even below, break-even levels.

The response of the principal carriers on the North Atlantic was to introduce a variety of fares. PAA introduced budget fares under which the airline would allocate the passenger a specific flight within a certain agreed period. TWA provided standby fares. BOAC introduced a Super Apex fare. The two former were $256US and the latter was $299US. These were announced on August 12 1977 after three days of consultation during which the carriers could not agree on a

single response (Lowenfeld 1981, 5/57). The varied nature of response was symbolic of the difficulty that the major carriers would have in co-ordinating a response to the challenges facing them and, at the same time, it symbolized

TABLE 10.5

Average Revenue per Passenger 1968-1978

IATA North Atlantic Scheduled Passenger Operations

Year	$US	Index	Change	Year	$US	Index	Change
1968	190.9	100,0		1974	224.8	117.8	21.3
1969	190.0	99.5	-0.5	1975	251.8	131.9	14.1
1970	178.0	93.2	-6.3	1976	253.7	132.9	1.0
1971	184.0	96.4	3.2	1977	276.3	144.7	11.8
1972	172.6	90.4	-6.0	1978	273.5	143.3	-1.4
1973	184.3	96.5	6.1				

Source: Taneja (1980), p. 122.

their intention to meet them.

During the period 1968-1977 there was a shift away from first class and normal economy towards cheaper fares. Initially the excursion fare categories benefitted (Table 6, Appendix), but by the end of the decade the shift was clearly towards the new, cheaper, categories being developed through IATA. The average revenue per passenger declined from 1968 to 1972, except in 1971, but then rose consistent-

TABLE 10.6

Average IATA North Atlantic Scheduled Passenger Fares by Type and by Year: 1972-1978

(in $US)

Fare Type	1972	1973	1974	1975	1976	1977	1978
First C./Concorde	404	444	499	562	581	636	698
Total Economy C.	159	170	208	233	233	253	246
Economy normal	246	256	287	315	306	327	346
Excursion total	150	157	191	212	211	236*	247*
14/21 Day	184	197	231	262	266	281	285
22/45 Day	140	148	182	206	209	227*	221*
APEX				184	184	196	201
Super APEX						152	186
GIT	141	146	174	199	201	222	220
Affinity/Incentive	122	128	147	165	173	208	197
Youth/Student	112	129	150	195	213	242	249
Budget						142	175
Standby						133	152
All other fares	141	147	179	197	207	219	215
All promotional f.	139	149	182	205	208	224	215
Average (All Fares)	173	184	225	252	254	276	274

*These figures are reversed in 1977 and 1978 in the source.

Source: Taneja (1980) p.122.
Note: Promotional fares include both excursion fares. GIT, affinity/incentive, and youth/student initially and APEX, Super APEX, budget, and standby when they were added.

ly from 1973 until the end of the decade (Table 10.5). The increase was particularly large in 1974, 1975, and 1977 in response to the price shocks. During the period of rising

prices from 1972 to 1977 the average revenue per passenger rose by 60 per cent. This was slightly larger than the increase in revenue from first class passengers, 57 per cent and considerably larger than the 33 per cent increase in revenue from those flying normal economy (Table 10.6). The peak 14/21 excursion fare rose 53 per cent in the period and that of the 22/45 excursion fare by 62 per cent (Table 10.4).

In 1977/78 there was a slight decline in average revenue per passenger (Table 10.6), although the average revenue in almost every fare type rose. This was due to passengers moving to less expensive fare categories.

In 1978/79, on the American North Atlantic, the normal economy fare rose by five per cent. There was a move to simplify the fare structure by eliminating some fares, youth and affinity group fares, and by combining others, such as the two types of excursion fares. "Unbundled fares", i.e. fares with a basic fare charged for point to point travel with a surcharge for stop-overs or interlining, were also being developed by airlines (ICAO Bulletin June 1980, 55). For the period 1979/80 the normal economy fare showed a sharp rise of 16 per cent (ICAO Bulletin June 1981, 67).

10.1.4 The 1980s

During the 1980s the fare structure on the Canadian North Atlantic evolved through a separate set of agreements to the fare structure on the North Atlantic between the US and Europe. Nevertheless, the Canadian fare structure remained heavily influenced by the evolution of the fare structure between the US and Europe. Despite the bankruptcy of Laker, the many new entrants on the US-Europe routes put considerable downward pressure on fares in that market. In the early 1980s the high price of oil kept costs high but by the mid 1980s the fall in price of oil eased the economic conditions in which carriers operated.

In Geneva in January 1980 a complete fare structure for the Canadian North Atlantic sub-area, excluding Finland, was developed, including first class, economy, excursion, advance purchase, GIT, and youth fares. This formed the basis for an agreement in May which formally closed the sub-area for the period July 1, 1980 - March 31, 1981. This agreement provided for a general 3 per cent increase (ICAO Bulletin June 1981, 67). As a result of changes in the Canadian-American exchange rate, this would have resulted in a total increase of about 1/2 per cent between June 30 1980 and March 31 1981 in terms of the fare when translated into American dollars. In comparison, the average economy fare on the North Atlantic declined 3 per cent between September 1980 and September 1981 in terms of American dollars (ICAO Bulletin July/August 1982, 36).

The Canadian North Atlantic was again closed, i.e. covered by an IATA agreement, for the period April 1 1981 - March 31 1982. At Montreux an agreement had been reached which provided for increases of up to 12 per cent. It was also decided that the surcharge for sleeper seats on the Canadian North Atlantic would be $50Cdn from Eastern Canada and $150Cdn from Western Canada (ICAO Bulletin June 1981, 67). When the changes in the exchange rate are taken into account, the 12 per cent increase is reduced to 9 per cent in terms of American dollars. In comparison, the average economy fare on the North Atlantic in terms of American dollars rose 12% between September 1981 and September 1982 (ICAO Bulletin July 1983, 36).

In September 1981 the "Big Three" on the North Atlantic, PAA, TWA, and British Airways all brought their minimum fares down to $249US (Sampson 1984, 153). Laker was bankrupt by the following February. The cost to the major carriers was enormous, PAA was forced to sell assets of $800 million US. British Airways recorded a loss of 144 million pounds sterling which F. Laker attributed to the results of British Airways's competition with him. British Airways covered this loss only through a government loan (Sampson 1984, 159). TWA suffered as well. Not only did their attempt to drive Laker out of the North Atlantic prove very expensive but their success was also chimerical since fares did not recover after Laker's bankruptcy.

The Canadian North Atlantic remained open from Spring 1982 to Spring 1983. There existed, however, amongst the carriers in this sub-area a consensus in favour of a five per cent increase in fares. Between August 15 1982 and November 16 1982 first class and economy fares London-Montreal rose 10 1/2 per cent (Canadian Transatlantic Fares, C.T.C. (A) NO. 238, original page CN-164 July 12 1982 and correction no. 894 September 17 1982). The Canadian dollar remained relatively stable against the American dollar. In comparison the average economy fare on the North Atlantic in terms of the American dollar rose 13 per cent between September 1982 and September 1983 (ICAO Bulletin July 1984, 33). The First US-ECAC Memorandum took effect in August 1982.

For the period from the Spring of 1983 to the Spring of 1984, the Canadian North Atlantic remained open, although agreement was reached on APEX fares for October 15 1983 - April 30 1984. On June 4 1983 the first class and economy fares Montreal-London rose five per cent and remained stable until November 1984 (Canadian Transatlantic Fares, C.T.C. (A) NO. 238, correction no. 15613 May 10 1983 and correction no. 38931 September 4, 1984). By the end of this period, however, the movement of the Canadian dollar reduced this increase in American dollar terms to zero. In comparison, between September 1983 and September 1984 there was a 5 per cent fall in average economy fares on the North Atlantic in terms of the American dollar.

TABLE 10.7

Fares Montreal-London 1980-1987

$Cdn

Fares	1980 June	1981 Aug.	1982 Sept.	1983 Sept.	1984 Sept.	1985 Sept.	1986 Sept.	1987 Sept.
F.Cl.**	1094	1215	1414	1642	1642	1765	2001	2047
Business**	(			998	998	1075	1218	1246
	(					895		
Full Ec.**	599	665	767				973	995
Other Ec.**	(		687	798	798	857		
	(		676				630	630
Excursion Pk.	938	1116	1263	1467	1467	1397		
Low			1042	1210	1210	1162		
Adv. Pur.Pk.	763	847	1008	1171	1171	866	958	1026
Sh.			805			786	858	919
Low		677	521	935	935	685	759	813
Adv. Bk.Pk.	604	746	834	778*	778*	818*	838#	748#
Sh.	(528	668	762	658*	658*	718*	738#	698#
	(		666				638#	648#
								548#
Low		584	606	538*	538*	618*	538#	498#
Misc. Pk.	703	746	834	898	898			
Sh.		668	762	798	798			
Low			666	698				

** denotes One Way
* denotes plus $20 on weekends
# denotes plus #30 on weekends.

Sources: C.T.C. document (A) NO. 238 and The Official Airline Guide, Worldwide Edition (1980,1981).

Between September 1984 and September 1985 the first class, business, and economy fares between Montreal and London rose by about 7 1/2 per cent as shown in Table 10.7. Movement of the Canadian exchange rate reduced this to two per cent in terms of American funds. The average economy

fare on the North Atlantic rose seven per cent in terms of American currency (ICAO Bulletin June 1986, 36). The Canadian North Atlantic sub-area was partially closed after November 15 1984. A limited agreement, which excluded Finland, West Germany, Greece, and service from France and to Morocco, came into effect for the period up to April 30 1985.

Between September 1985 and September 1986, as shown in Table 10.7, first class and business fares rose by about 13 1/2 per cent. The available economy fare split in two. The new economy fare on which no restrictions were placed rose 13 1/2 per cent from the old fare. The lower economy fare, which permitted only one change of aircraft in either Canada or the UK, fell 26 1/2 per cent from the old fare. An "unbundled" fare of $600 Can. had been introduced in May of that year and shared in the five per cent price rise that occurred on September 27th. Unbundled fares had been offered by individual American airlines on the North Atlantic for a considerable period and had become available out of the United Kingdom to Montreal in May 1983 (Canadian Transatlantic Fares C.T.C. (A) NO. 238, correction no. 15613 May 10 1983).

When the rise of Canadian North Atlantic fares are examined in the light of the movement of the Canadian exchange rate the 13 1/2 per cent increase falls to 11 1/2 per cent. In comparison the average economy fare on the North Atlantic

rose 13 per cent in terms of American funds (ICAO Bulletin July 1987, 41).

The Canadian sub-area remained partly closed for the period May 1 1985 to April 30 1986. As originally framed, the agreement provided for a three per cent increase in fares, up to seven per cent in some European currencies, and had excluded Finland, Greece, Italy, Yugoslavia, and services from France and to Morocco. It was amended in January 1986 to include Greece and to provide for youth, senior citizens, and GIT fares with some APEX fares also being amended. It continued to cover the same period (ICAO Bulletin June 1986, 40).

After the expiry of that agreement, new agreements were reached which covered the period June 1 1986 to March 31 1987. Yugoslavia was excluded. Normal fares were to rise by three per cent, excursion fares were to fall by 25 per cent, and promotional fares were to change by between minus six and plus three per cent. Other changes, including the above mentioned introduction of a restricted economy fare to and from the United Kingdom and changes in currency adjustment factors, were also made. In August 1986 various changes were made to the above, coming into effect August 11th. These included reductions in the available Super APEX of three to 28 per cent (ICAO Bulletin July 1987, 46). In the US sub-area the agreement effective for the period May 14 1986 to March 31 1987 saw a general increase of 10 per cent

with some decreases in eastward promotional fares. Subsequent events saw considerable amendment to, and reduction, in promotional fares.

In November of 1986 two limited agreements were made, excluding Portugal and Yugoslavia, which resulted in the Canadian North Atlantic remaining closed for the period April 1 1987 to March 31 1988. Under this agreement another adjustment in currency factors took place. The result in local currencies was that fares from Canada varied from APEX which remained at the status quo to normal fares which rose seven per cent. Fares to Canada varied from promotional fares remaining stable to normal fares rising up to 5 per cent (ICAO Bulletin July 1987, 46).

Looked at as a whole, a number of trends dominated the 1980s. The first is that promotional fares increased at a lower rate than did normal fares. In fact, the lower a peak fare was in 1980 the less it had increased by 1987. First class fares rose 87 per cent, economy fares rose 66 per cent, advance purchase fares by 34 per cent, and advance booking fares by 24 per cent (Table 10.7). The second is that Canadian normal fares improved relative to American normal fares through to 1986 (Table 10.8). The revenue in $US per km for the normal economy fare in 1980 for Montreal-London was 118 per cent of that for New York-London. In 1986 it had fallen to 91 per cent of that for New York-London. By 1988, however, it had recovered to approximate equality.

TABLE 10.8

A Comparison of the Fares Montreal/New York-London

(5,564 km. vs 5,428 km.)

DATE		FARE			RATIO
		New York $US	Montreal $Cdn	$US	Mon. / N.Y.
June 1980	F.Class	1,094	1,094	936	0.86
	Econ.(H)	445	599	512	1.15
Aug. 1981	F.Class	1,430	1,215	1,013	0.71
	Econ.(H)	552	665	555	1.01
Dec. 1984	F.Class	1.929	1,714	1,324	0.69
	Business	1,149	1,043	806	0.70
	Economy	676	895	691	1.02
	Ec. (Y1)		832	643	0.95
Apr. 1986	F.Class	1,988	1,765	1,270	0.64
	Business	1,180	1,075	774	0.66
	Economy	696	857	617	0.89
Feb.1988	F.Class	2,280	2.047	1,601	0.70
	Business	1,354	1,246	975	0.72
	Economy	754	995	778	1.03

Source: C.T.C.(A) No. 238 Canadian Transatlantic Fares Correction nos. 13678, 15613, 38931, and The Official Airline Guide, Worldwide Edition (various).
Note: Y1 included because in preceding and succeeding correction nos. no Y fare was provided.

When the proportion of travellers on the whole North Atlantic by fare categories are compared for 1980 and 1986 the results are not surprising. The category using APEX and Super APEX fares had increased and first class, economy, and excursion categories had all decreased (Table 7, Appendix).

People using categories other than the above were approximately the same, 19.3 and 19.6 percent respectively, in both years.

It is interesting to note that Canadian domestic fares were lower than North Atlantic fares over comparable distances at the end of the 1970s and start of the 1980s when there was such strong downward pressure on North Atlantic fares. A Transport Canada study noted that for both December 1979 and October 1980 "domestic Canadian fares are . . . consistently lower than international fares". On the North Atlantic this was shown to be true both for full economy and for discount fares (Transport Canada 1981, 231, 239).

10.1.5 Summary

In conclusion, during the period 1946-1978 Canadian fares can be followed through the movement of fares on the North Atlantic as a whole. After that they evolved to some extent independently of those between the US and Europe, but have not moved greatly out of line with those fares. During the 1950s the fares used by the bulk of travellers tended to decline as new fare categories were introduced. The 1960s saw several disputes over fares and the continued creation of new fare categories to respond to the challenge created by charter carriers. The 1970s saw the disputes over fares become more difficult to solve because of the conflict between upward pressure on fares from rising costs and down-

ward pressure from the challenge of charter carriers. The entry of Laker and other new carriers on the North Atlantic increased the downward pressure on fares. The fares only really began to recover in 1986. During the 1980s Canadian economy fare has tended to reflect that on the American North Atlantic though it was noticeablely lower in 1986. First class and business fares have been noticeably lower in the Canadian market.

10.2 ROLE OF CANADIAN CARRIERS IN IATA FARE DISPUTES

Canada's carriers, in particular Air Canada, have been a very active force for low fares on the North Atlantic. This was particularly true during the 1960s and 1970s.

Not until Air Canada acquired its jet aircraft in 1960 did it become fully technologically competitive with all carriers on the North Atlantic and able to become a strong force for lower fares. During the period preceding the introduction of jet aircraft the carrier most responsible for the development of new fares was Pan American Airways which was already the largest single carrier on the North Atlantic and which had immediate access to the newest developments of American civil aviation technology.

In 1962 the Canadian carriers, supported by the Canadian government, joined with American carriers in opposing the increase of five per cent in the other fares which was to

accompany the introduction of an affinity group fare at 62 percent of the economy fare. (Baldwin 1975, 185). As recounted above, this conflict at Chandler Arizona ultimately resulted in the acceptance by Canada and the United States of the fare increase.

In 1963 an IATA fare conference was held in Salzburg to produce a permanent agreement following the Chandler dispute. At this conference Air Canada, as the culmination of a three-year effort to reduce fares (Baldwin 1975, 189), proposed a one-way economy fare of $180 in high season and a low season fare of $145. With a five per cent discount each direction, the return fares would have been $342 and $275.50 respectively. PAA proposed a return fare of $320 using jet aircraft with high density one class seating, 190 seats on a Boeing-707 or DC-8, and with no cabin service provided. European carriers, which had met earlier at Bonn and Stockholm to develop a unified position, opposed both these positions as being too extreme. The CAB and American carriers later moved to a position relatively close to that of the European carriers with the one way economy fare to be reduced to $230 from $263 and with an excursion fare to be set at $300 return on New York-London. Air Canada, however, remained committed to its initial position. Two other carriers were also opposed to the general consensus, but for different reasons. El Al and Aerlinte wanted to maintain certain special group fares that they offered which were

opposed by the other carriers because their conditions were more liberal than was customary. El Al's "group flight" from New York to Tel Aviv, for example, not only offered stopping-off privileges at various intermediate points but also did not require a common affinity amongst its users.

At Nassau in December 1963 all carriers, except Air Canada, El Al, and Aerlinte, agreed to reduce first class fares by 21 percent and to create a high season economy three per cent lower than the then current economy fare and a low season economy 21 percent lower than that economy fare, i.e., on New York-London the economy fare would go from $263 to $255 high season and $210 low season. Rather than continuing the negotiation procedure, the carriers subscribing to the new package moved to file the new fares with their respective governments. This presented the dissenters and their governments the choice of agreeing to this package or carrying out separate negotiations with the government of each country that the dissenters served. The result was that in April 1964 a mail vote unanimously accepted the fare structure (Straszheim 1969, 136).

In 1968 there had been a move, opposed by the small national prestige carriers, to reduce excursion fares in the face of growing charter competition. In 1969 Alitalia moved to reduce its Rome-New York excursion fare by 25 per cent. BOAC, PAA, TWA, and Aer Lingus moved almost immediately to match it. In all some 175 revised fare proposals were

received by IATA. The most dramatic proposal came from Air Canada which advocated the dropping of the affinity rule for scheduled group fares and proposed flying any 50 people who "turned up in a group at the airport" for a fare of £102.35. The final agreement was fairly close to the original proposal from Alitalia. A set of excursion fares was created on the New York-London route of £104 winter/ £110 shoulder/ £123 summer. Thus, even after this reduction, excursion fares remained about 2 3/4 times charter fares in winter and twice charter fares in summer (Cooper and Maynard 1971, 34).

In 1969 the reputation of Air Canada as a scheduled carrier in favour of lower transatlantic fares was well established. K. G. J. Pillai in his 1969 book The Air Net: The Case Against the World Aviation Cartel recounted one story attributing a failure of the Traffic Conference to reach a fare agreement to Air Canada's "rigid stand for lower fares" (Baldwin 1975, 185).

In 1971, Air Canada, concerned about the charter market's growth, embarked on a dramatic strategy to secure a major reduction in excursion fares. In early 1970 the firm had developed a plan to avert the situation which had occurred in 1963 when the threat of being by-passed had forced it into line with the other IATA carriers. It reached a temporary agreement with the Irish national carrier, Aer Lingus Teoranta, that, if Air Canada was by-passed, Air Canada would adopt the proposed low fares itself and fly only to

Ireland. It could tap the entire North Atlantic low fare market since it would offer a very desirable alternative to the affinity charters which would be the only commonly available alternative. Passengers could then fly onward to other destinations in Europe on Aer Lingus Teoranta's scheduled services.

When it entered the Traffic Conference, Air Canada's proposal targeted the 21-45 day excursion fare. Air Canada felt this fare provided an alternative for 80 percent of charter travellers to charter services. Its proposal would have allowed it to reduce that fare on Toronto-London in summer from $400 to $250 and in winter from $350 to $200. Air Canada secured the greater part of the decrease it desired. Excursion fares were finally set at $300 peak, $232 for a new shoulder season (May, June, September, October), and $210 low season on Toronto-London (Baldwin 1975, 187-188). The three tier concept was a new development of the final agreement at Geneva in December 1971. As noted above, 1972 saw the lowest average fare paid by IATA travellers ever, and there was also a major move of North Atlantic travellers towards scheduled carriers.

Air Canada was not the only carrier to have attempted to secure a dramatic change in fares on the North Atlantic to compete with charter carriers at the series of conferences held in 1971. BOAC, with which Air Canada had a pooling agreement, introduced the APEX fare concept for serious con-

sideration and at the Montreal conference secured the agreement of all but one airline, Lufthansa. When the conference met again in September at Amsterdam and Lausanne, opposition to APEX had increased and the introduction of the fare category was delayed ultimately until 1975. Lufthansa was also seeking a new structure for air fares. It wanted a three tier system of the "normal" fares, a low 14/28 day excursion fare, and a special youth fare for those under 21.

At Monaco in October 1973 a fare package was worked out which included provisions to increase the low economy fare by six per cent, the shoulder economy fare by two per cent, both excursion fares by 10 per cent in the low season and seven per cent in the shoulder and peak seasons, and the youth/student fare by 12 per cent. The US CAB refused to accept these provisions and insisted on the abolition of the youth/student fare, a much higher increase in the 22/45 day excursion fare, and no increases in the economy fare. Although the IATA Fare Conference amended its proposal to include the desires of the CAB on Europe-US, the original package went into effect between Canada and Europe.

In 1979 Air Canada introduced a new marketing strategy into international scheduled aviation when it had its first "Seat Sale" on the North Atlantic. This concept of targeting periods with low demand with a special "sale" of the vacant seats at marginal cost was a very valuable addition to the options of both consumers and scheduled carriers faced with charter competition.

John B. Baldwin argues that, although the non-scheduled carriers played a role in Air Canada's 1963 and 1971 moves to reduce fares on the North Atlantic, the explanation of the timing of the airline's actions lies in changes in aviation policy that increased domestic competition which pressed the airline to examine the North Atlantic for profit opportunities. In 1958 CPA received its first transcontinental flight and in 1968 it had received permission to expand its transcontinental operations to 25 per cent of the market, which it accomplished by 1970. In 1959 Air Canada had begun seeking lower fares on the North Atlantic culminating in the 1963 effort on fares and in 1971 it made its second major effort to reduce fares.

At the beginning of the 1960s there were severe problems for Air Canada on the North Atlantic which provided the company with compelling reasons to seek reductions in North Atlantic fares to increase scheduled traffic. Air Canada's expansion to new terminals in Europe beyond Prestwick/London had the effect of enhancing Canada's status in international affairs and in Europe's capitals, but meant that even a bare minimum of frequencies resulted in the route system being over-served, particularly in winter when the number of flights could not be reduced in line with the reduction in traffic volume without seriously impairing the service. Air Canada's management was well aware that the problem would become much more serious when the larger, faster DC-8s replaced the Super-Constellations then in use (McGregor

1980, 115). In addition, there was the danger of a further dilution of traffic if CPA achieved its goals of expanding its services to Europe.

Then, in the opening years of the 1960s, Air Canada went into charter service on the North Atlantic as a "competitive measure". By 1963 and 1964 it would form almost 1/3 of the company's total North Atlantic traffic, but at considerably reduced fares. In the hope of reversing the trend and coaxing some of this traffic back to scheduled service through a lower scheduled fare, Air Canada, in the words of its then president G. R. McGregor, "kept pressure on IATA until agreement was reached on a much lower fare level for scheduled services." The airline found, however, that the result was not the diversion of charter traffic but the development of an "entirely new segment of business". An upswing in the Canadian economy in 1965 led to a traffic boom which exceeded all expectations and left the company temporarily short of capacity when system passenger traffic rose 13 per cent and Atlantic traffic rose 33 per cent in the one year (McGregor 1980, 150).

By 1970 it was evident that a state of crisis existed for scheduled carriers on the North Atlantic. The charter market had grown on the North Atlantic as a whole from 15.8 per cent of the market in 1964 to 26.2 per cent in 1969 (Table 1, Appendix). In the Canadian North Atlantic market the growth was from 15.8 per cent of the market to 25.6 per cent

TABLE 10.9

Ratio of Passenger Revenues to Passenger Costs

IATA Carriers On the North Atlantic 1968-1978
In $US

Year	Passenger Revenues	Passenger Operating Expenses	Passenger Economic Costs	PR/PEC
1968	1,004	932	1,088	0.92
1969	1,142	1,079	1,262	0.90
1970	1,286	1,284	1,522	0.84
1971	1,389	1,488	1,763	0.79
1972	1,646	1,687	1,999	0.82
1973	1,854	1,857	2,180	0.85
1974	2,112	2,229	2,575	0.82
1975	2,232	2,334	2,740	0.81
1976	2,495	2,537	3,031	0.82
1977	2,858	2,877	3,355	0.85
1978	3,443	3,568	4,122	0.84

Source: Taneja (1980), 128.

(Table 3, Appendix). In addition, the industry's deficiency in earnings on the whole North Atlantic between passenger revenues and passenger economic costs had risen by 50 per cent in 1969, from $84 million US in 1968 to $120 million US, and would double in 1970 to $236 US million (Table 10.9).

Although it had committed two DC 8s exclusively to charter work in 1969 (P. Smith 1986, 305), Air Canada was almost entirely committed to the scheduled market. In 1969 it held only 11 per cent of the charter market on the North Atlantic

carrying 64,000 people compared to the 294,000 scheduled passengers it carried on the North Atlantic (Tables 6.4 and 7.9). It had also seen its load factor drop 2.3 points on the North Atlantic in 1969 to only 51.5 per cent (Table 6.5). It did not require events in Canada to direct its attention to the North Atlantic and, indeed, was only one of three major airlines to put forward dramatic new proposals in 1971 regarding the Atlantic fare structure.

Wardair, on at least one occasion, has played a pivotal role in the evolution of the North Atlantic fare structure. This occurred at the joint conference of IATA and charter carriers at San Diego in September 1974.

On September 11 1974 a fairly complex formula had been tentatively agreed by all concerned. Charter rates were established for operations between the US and Europe and between Canada and Europe for the low, shoulder, and peak seasons. Between the US and Europe the rates varied depending on the seating of the aircraft, four sizes were defined, and whether traffic was originating in the US or Europe. During high season, the proposed minimum rates varied between 3.75¢US per seat-mile for aircraft with over 430 seats and 4.1¢US for aircraft with less than 230 seats for traffic originating in the US, 0.15¢US less in each category for traffic originating in Europe. Between Canada and the US, the minimum was 4.1¢US per seat mile or 2.55¢US per seat km. for any type of aircraft (Aviation Daily September 24, reverse pages).

On September 12 Wardair, along with three of the major US charter carriers, Capitol Airways, Saturn Airways, and Overseas National Airways, withdrew their agreement on the grounds that the charter rates were too high (Aviation Daily September 12, 58). They later gained support of other carriers involved in charter operations including Spantax, JAT and Transavia (Aviation Daily September 24, 121). They made a counter-proposal of 2.3¢US per km. but this was rejected by the scheduled carriers (ICAO Bulletin, May 1975, 26).

As noted above, after the failure of the carriers to reach an agreement, governments moved to set minimum charter rates. The eventual ECAC wholesale rate for 1975 came in at 2.33¢US (ICAO Circular 128AT/37, 144-145), close to the value proposed by the dissidents. Unlike the IATA San Diego proposal it provided a single minimum fare and this fare was intermediate between proposed values of 2.45 for DC-8s/Boeing-707s and 2.25 for Boeing-747s. The CAB's "recommended" wholesale rates were 2.1¢US for aircraft with over 229 seats and 2.55¢US for aircraft with less than 230 seats. This was the same minimum fare for DC-8s/Boeing-707s as in the San Diego agreement but a lower one for Boeing-747s. This attempt by the CAB to regulate charter fares was, however, successfully challenged in the American courts, as noted above, and the experiment was not repeated. Wardair's advertised high season retail Toronto-London fare works out to be 2.97¢Cdn per km. (Table 10.18) or about

2.55¢Cdn wholesale. The Canadian dollar was at about par with the US dollar in 1974/1975 so Wardair's fare was same as it would have been under the IATA San Diego proposal.

Although in the short run only some carriers and aircraft, in particular European carriers operating DC-8s/Boeing-707s, won an immediate right to charge lower charter fares as a result of the action by Wardair and the other charter carriers, in the long run the effects were profound. The setting of charter fares remained independent of any role by IATA, and in the United States it also became practically independent of any government input. Charter fares were, therefore, free to go to as low a level as charter carriers could maintain, and, indeed, within a few years they fell low enough to drive many charter carriers out of the market, though not Wardair.

On the Canadian North Atlantic a specialist low cost scheduled carrier, such as Laker Airways or People's Express, did not emerge. The true counterpart of Laker Airways, etc., in Canada was Wardair. It developed what amounted to a regular low cost transatlantic passenger service while not stepping beyond the legal structure of non-scheduled traffic and while remaining profitable overall.

In conclusion, Air Canada has in particular been a force on the North Atlantic for lower fares and its motivations were primarily related to events on the North Atlantic and

not to events within Canada. Wardair has also played a key role in maintaining low fares on the North Atlantic.

10.3 FARES AND COSTS

The North Atlantic market brought financial difficulties to the carriers operating on it from the later 1960s until the mid-1980s. Already in the late 1960s the ratio between passenger revenues and passenger costs was only about 0.9 (Table 10.9). By 1971 it was a financial disaster having

TABLE 10.10

North Atlantic Revenues and Costs

1980-1984

Category / Year	1980	1981	1983	1984
Number of Airlines	49	48	46	46
Average Flight Stage	4,217	4,320	4,006	3,802
Average Number of Seats	309	310	318	322
Average Passenger Load Factor	66	68	68	68
Average Revenue (cents US) per Passenger KM.	5.4	5.6	5.8	5.6
Average Pas. Cost (cents US) per Passenger KM.	6.3	6.4	5.9	5.5
Revenue/Cost Ratio	0.86	0.88	0.98	1.02

Source: Table III.1 in ICAO Circular 171-AT/64, "Regional Difference in Fares, Rates, and Costs for International Air Transport."

fallen below 8.0. It recovered slightly but remained below 0.85 until after 1978. By 1980 and 1981 it had recovered to above .85 and in 1983 and 1984 it had risen to approximately 1.0 (Table 10.10). It was not until the percentage of travellers going by charter on the North Atlantic had fallen significantly to below 15 percent that recovery really began (Tables 7.6 and 10.10).

It is interesting, but not necessarily significant, that the year of Skytrain's demise, 1981, showed a noticeable improvement. It had been Skytrain and the scheduled carriers' response to it that had helped to transform travel patterns back to what they had been before the mid 1960s in terms of the choice between scheduled and non-scheduled carriers.

TABLE 10.11

North Atlantic Fuel and Oil Prices

Cents US/Liter

Year	1980	1981	1983	1984
Price	27.0	28.5	23.1	21.6

Source: IV.4 in ICAO Circular 171-AT/64

When the break-even point was finally reached on the North Atlantic in 1983, the average load factor on the North Atlantic was approximately 69 percent. This load factor had been reached in 1981 but it took the fall in oil prices to reduce the break-even load factor to this level (Table

TABLE 10.12

Variation of Revenue/Cost Ratio Amongst Airlines

On the North Atlantic

Year Cost/Revenue Ratio.	1977	1980	1981	1983	1984
Ratio below 0.7	6	15	8	1	1
" 0.7-0.9	5	6	12	11	11
" 0.9-1.1	5	6	6	12	12
" 1.1-1.3				3	5
" above 1.3	-	-	-	-	-
Average Ratio	.90	.85	.85	1.0	1.0
Number of Airlines	16	27	26	27	29

Source: Table III.3 in ICAO Circular 171-AT/64 and Taneja (1980) p.133.

10.11).

Even in 1977, when the revenue/cost ratio had improved somewhat from the bleak days of the early and mid 1970s, about 1/3 of 16 airlines on the North Atlantic which responded to an ICAO study were close to breaking even (Table 10.12). In 1980 and 1981, 27 and 26 airlines

respectively responded to the ICAO. In 1980 the number of airlines in total which were close to the break even point had remained close to the figure in 1977, six instead of five, comprising a little under one quarter of the respondents. The number with a ratio between 0.7 and 0.9 was also close to the same in 1980, again six instead of five, again a little under one quarter of the respondents. Over half of the respondents had a revenue/cost ratio below 0.7. In 1981 the 0.2 cents increase in revenues per passenger km., compared to the 0.1 cents increase in costs per passenger km. (Table 10.10), was sufficient to move a considerable number of airlines from under a truly disastrous ratio of under 0.7 to one between 0.7 and 0.9. It did not, however, help any to move up out of the 0.7-0.9 group. In the relatively prosperous years of 1983 and 1984, a small group of airlines, three in 1983 and five in 1984 were doing appreciably better than their peers and made a clear profit. The group below a ratio of 0.7 had fallen to only one. It is interesting to note, however, that still over a third of the carriers operating had a revenue/cost ratio below 0.9. The continued presence of a large number of carriers on the North Atlantic clearly continues to be due to something other than profit.

The operating cost of narrow-bodied long-distance airliners remained appreciably higher than that for wide-bodied aircraft in terms of seat/kilometers as the mid 1980s

TABLE 10.13

Wide-Bodied vs Narrow-Bodied Aircraft

A Comparison of Operational and Cost Data

Year Category	1980	1981	1983	1984
Narrow Bodied Avge. Seating	161	163	164	163
N.B. US Cents per seat Km.	3.0	3.0	2.5	2.4
Wide Bodied Avge. Seating	331	327	329	328
W.B. US Cents per seat Km.	2.4	2.4	2.1	2.0

Source: Table IV.1 in ICAO Circular 171-AT/64

approached (Table 10.13). The difference, however, had fallen from 25 percent higher per seat km. in 1980/81 to 20 percent in 1983/84. This is of great importance to the new Canadian non-scheduled carriers operating narrow-bodied aircraft. Because most travellers appear to prefer wide-bodied aircraft the new charter carriers must use price competition when they are competing on routes with other charter carriers, like Wardair, which use wide-bodied aircraft.

In June 1983 Regent, a travel agency in Toronto, ran a series of advertisements in the Globe and Mail announcing wide-bodied charter fares for Toronto-London from $639Cdn. and DC-8 charter fares for Niagra Falls-Gatwick from $499 to $599Cdn. In June 1984 Worldways, a narrow-bodied Canadian charter carrier, had ads in the Globe and Mail announcing

charter fares of $579, $599, and $629Cdn. to London at the same time as Wardair was advertising wide-bodied charter flights from Toronto to London (Stanstead) for $698Cdn. leaving during the period July 9-August 16. Because the difference in aircraft operating costs have declined the new carriers have a better chance of making up the difference by saving in other areas, such as the use of airports and times with lower charges, and in marketing.

In conclusion, revenues did not keep up to costs during the period that scheduled airlines were faced with competition from charter carriers on the North Atlantic. Profitability only tended to recover when the pressure from the charter market and the price of fuel oil fell. The decline in the price of fuel after the early years of the 1980s has made the Canadian charter market more competitive by assisting the new narrowed bodied carriers which entered in the 1980s.

10.4 ALTERNATIVES TO SCHEDULED TRANSATLANTIC AIR SERVICE.

This section will look at the evolution of scheduled fares in relation to that of the two alternative choices to scheduled air service, ocean liners and charter air services.

After the introduction of civilian aviation on the North Atlantic, the lower priced alternative to scheduled air ser-

vice, excluding opportunity costs and all externalities, was

TABLE 10.14

Scheduled Air Fares and Tourist Sea Fares

On the North Atlantic, 1948-1963
In $US

Year	Tourist Sea Fare (Cunard)	Lowest Major Air Fare
1948	165	325 (Basic)
1949	165	333 (")
1950	170	350 (")
1951	170	375 (")
1952	170	290 (Tourist)
1953	170	275 (")
1954	170	275 (")
1955	170	275 (")
1956	187	275 (")
1957	197	275 (")
1958	197	252 (Economy)
1959	207	252 (")
1960	222	270 (")
1961	222	270 (")
1962	226	270 (")
1963	231	263 (")

Source: Staszheim (1969), 272-273.

the ocean liner. Not until the appearance of the tourist fare in 1952 (Table 10.14), did the share of the liner in North Atlantic traffic begin to decline from the 2/3 share that it held in 1948 (Table 3.4). In 1958, when the economy fare was introduced, the share held by liners fell below 50 percent for the first time by dropping a remarkable 7.5

points in a single year. By 1963 it would fall to only a little above 20 percent. The fifty or so dollar difference after 1957 was clearly insufficient to compensate for the difference in time in transit.

The replacement of the liner, as the low-cost alternative to scheduled air service, was charter or non-scheduled air service. In 1958 the economy return fare for New York-London was $454 but charter fares, for those who could obtain access to them, were available for $250 to $300 and were thus 55-66 per cent of the normal economy fare. By 1961, when an economy fare New York-London return was $486, charter fares were still about $260 and thus only about 53 per cent of the normal economy fare (Goldklang 1961/2, 99).

Although charter fares were financially attractive, access to them was restricted to those who belonged to an organization able and willing to organize an excursion and charter an aircraft. They were often further restricted by the government policy of various states to protect their scheduled carriers. Until 1963, for example, the United State's CAB followed a rule of thumb restricting the charter operations of carriers on the North Atlantic to 10 per cent of the total for scheduled carrier's passenger miles. It was only in 1963 the CAB began granting long term, e.g. five year certificates, to charter carriers (Straszheim 1969, 133).

In Canada, the initial impetus to develop the charter market came from foreign carriers. Charter traffic in 1961 amounted to 42,453 single direction passenger trips (Table 7.3) About 80 per cent of those flights were made on foreign carriers, as shown in Table 7.8. A healthy US-Europe charter industry in which they had reasonable access was of great importance to those carriers during the developmental years of the industry when the Canadian market might well

TABLE 10.15

Average Charter Revenue Per Passenger

On the Canadian North Atlantic 1961-1969 (return)
$Cdn

Year	Average Revenue
1961	250
1962	250
1963	228
1964	237
1965	246
1966	246
1967	236
1968	218
1969	188

Source: Saarty (1969) p. 292, and Edwards (1970) p. 41.

have been too small to attract them on its own.

TABLE 10.16

Non-Scheduled Yields per Passenger Km.

On the Seven Major US Carriers on the North Atlantic 1968-1973

Year	Average Yield	Lowest Carrier Yield	Highest Carrier Yield	Average x 11,128 km.
1968	1.54¢	1.39¢	1.71¢	$171
1969	1.49¢	1.26¢	1.72¢	$166
1970	1.45¢	1.28¢	1.70¢	$161
1971	1.39¢	1.24¢	1.58¢	$155
1972	1.35¢	1.15¢	1.52¢	$150
1973	1.46¢	1.27¢	1.60¢	$165

Source: IATA Circular 128-AT/37 Air and Freight Transport, 146.

The tremendous development of the charter industry on the North Atlantic during the 1960s was encouraged by the reduction in charter fares that occurred during this period (Tables 10.15 and 10.16). In 1969 London-New York charter fares were available at £60 ($144US) compared to a scheduled economy return fare of £175 ($420). It was thus 34 per cent of the economy fare. A similar proportion held true for London-Toronto, £65 being 36 per cent of the economy fare of £183, and for London-Los Angeles, with £95 being 32 per cent of £293 (Cooper and Maynard 1971, 24). Between Montreal and London in 1969, charter fares during the high season in Canadian dollars ranged between $169.12 (Caledonian Airways) to

$207.31 (Air France) with full economy being equal to $491. In the off season, charter fares ranged between $151.21 (Air France) and $190.07 (BOAC) when the full economy fare was $399). Charter fares were still lower than the cheapest form of bulk fare offered by scheduled carriers and were half of the excursion fare available (Table 10.3).

The 1969 charter fare of $166, shown in Table 10.16, was lower than the 1961 $260 charter fare stated above, but the price trend during this period does not seem to have been uniformly downward. The average charter fare, at least on the Canadian North Atlantic, appears to have been rising between 1963 and 1966, and then in 1966 began a downward trend (Table 10.15). The year 1966 also coincides with moves by IATA to become more competitive on the North Atlantic by seriously reducing their economy group fare and introducing an economy inclusive tour fare. IATA's moves to match charter fares by providing special fares with various restrictions was countered in the final analysis by the continuing willingness of the charter carriers to accept lower and lower fares. A downward movement in fares lasted until 1972 when major changes occurred in the structure of the market with the introduction of ABC and TGC (Travel Group Charter) charters (Table 10.16).

After 1972 charter fares began to rise (Tables 10.16 and 10.17). In 1973, of course, the first oil shock hit and all airfares began escalating. By 1976 minimum retail prices

TABLE 10.17

Minimum US Transatlantic Charter Rates

1972-1976
$US

Year	Price per Seat-kilometer Wholesale	Price per Seat-kilometer Retail	Description
1972	1.10	1.30	Representative low charter rate for PAA Atlantic
1973	1.25	1.55	Representative low travel group charter rate filed with CAB
1974	1.55	1.80	Ibid.
1975	2.33 (2.10-2.55)	2.70	ECAC minimum rates (CAB guidelines for different equipment types issued Oct.1974)
1976	2.45	2.87	ECAC minimum rates

Source: ICAO Circular 128-AT/37.pp. 144-145.

for charter fares on the American North Atlantic had risen by 85 percent. During the same 1973-1976 period the minimum retail Winnipeg-London charter fare had risen 57 per cent Canadian and 60 per cent US (Table 10.19), and the peak Toronto-London charter fare had risen by 54 percent in Canadian and 67 percent in American funds (Table 10.18). The peak economy fare had risen by 29 percent and the short peak excursion fare by 53 percent and the long peak excursion

TABLE 10.18

The Evolution of Peak Season Charter Fares

Toronto-London 1973-1981

Year	Fare $Cdn	Index in $US	Service Operator
1973	239	100	Wardair Intervac
1974	299	127	" "
1975	339	140	Laker Sunflight
1976	369	157	" "
1977	369	145	" "
	(388 Fri)	(157 Fri)	
1978	409	150	" "
	(429 Fri)	(158 Fri)	
1979	409	146	Wardair
1980	614	220	"
1981	748	261	"

Source: Toronto Globe and Mail advertisements.

fare by 68 percent on the North Atlantic (Table 10.4). Canadian peak charter fares during the initial period of oil price inflation thus moved more or less in line with, or a little under, excursion fares. It is also noticeable that the minimum fare on the Canadian North Atlantic was higher than the representative low travel group rate filed with the CAB in 1973, but was lower than the minimum ECAC rate in 1976.

Canadian North Atlantic charter fares remained quite stable from 1976 through 1979. They rose dramatically in 1980 and 1981, with the Winnipeg-London fare rising by 61 per

TABLE 10.19

Minimum Retail Charter Fares

Winnipeg-London (Wardair) 1973-1981

Year	Fare $Cdn	Revenue per km. ¢US
1973	209	1.65
1974	249	2.01
1975	289	2.25
1976	329	2.64
1977	349	2.60
1978	379	2.63
1979	407	2.75
1980	546	3.69
1981	656	4.33

Source: Winnipeg Free Press advertisements.
Note: In 1973 the revenue per km. was identical for the equivalent Wardair charter fare out of Toronto advertised in the Toronto Globe and Mail.

cent in 1981 from 1979 and the Toronto-London peak fare rising by 83 per cent, both calculated in terms of Canadian funds (Tables 10.18 and 10.19).

There had been two major environmental changes during this period. The tremendous rise in fuel costs in 1979 and the large shake-out of European and American charter carriers that occurred at the end of the 1970s as discussed in Section 7.2. The market share of Canadian carriers as a whole had reached 86 percent in 1980 and Wardair's share had

reached 54 per cent (Table 7.11). If this price increase included an attempt to exploit market share it did not wholly succeed, as events were to prove that these price

TABLE 10.20

Normal Economy Fares 1978-1986

For Average North Atlantic City Pair Distances

Date	Fare $US	Distance km.	Cents km.	Percent Change $US	Percent in Selling Currency
Sept. 1978	532	7,200	7.39		
Sept. 1979	557	7,200	7,75	5%	
Sept. 1979	546	7,000	7.80		
Sept. 1980	631	7,000	9,01	16%	
Sept. 1980	643	7,300	8.81		
Sept. 1981	623	7,300	8.53	-3%	
Sept. 1981	616	7,200	8.56		
Sept. 1982	690	7,200	9,58	12%	17%
Sept. 1982	675	7,000	9.64		
Sept. 1983	759	7,000	10.84	13%	20%
Sept. 1983	784	7,100	11.04		
Sept. 1984	748	7,100	10.54	-5%	5%
Sept. 1985	800	7,100	11.27	7%	
Sept. 1986	907	7,100	12.78	13%	5%

Source: Various issues of the ICAO Bulletin.

increases were not sustainable in the market place.

Between 1973 and 1978 the average normal economy fare had risen by 35.1 per cent, the long excursion fare had risen 49.3 per cent, the Toronto peak charter fare had risen by 50 per cent in American funds, and the Winnipeg minimum charter fare had risen by 59 per cent (Tables 10.4, 10.18, and 10.19). Between 1978 and 1981 the average normal economy fare rose by 16 per cent (Table 10.20), a figure which bears no relationship to the Toronto charter increase of 74 per cent, and Winnipeg charter increase of 65 per cent, all measured in American funds.

In 1981 there was a large fall in Wardair's load factors for ABC service on the North Atlantic, from 85 to 77 per cent. In 1982 the fall continued to 74 per cent. In 1983 it recovered to 86 per cent. It is not possible to establish any clear connection in this to the price increase in 1980-81 since the load factor's declines and recovery coincided to large changes in capacity offered, but the evidence is suggestive (Statistics Canada 1980- 1983g). It is also of interest to observe that 1981 marked the tentative entry of a new Canadian carrier, Worldways, into the Canadian North Atlantic Market whose market share would jump to over 10 per cent in 1982.

As stated above, the price increase of 1981 was not sustainable. In 1982 Worldways advertised a high season fare to London from the Toronto area of $599 for narrow-bodied service. Regent Holidays announced a fare to London from

the Toronto area of $599 for narrow- bodied service and British Air Tours, a BA subsidiary, offered wide-bodied service at $699, both in high season (Toronto Globe and Mail 1982).

During the mid 1980s the fare situation for charter service from Toronto continued to see wide bodied-service offered initially for high season at something over $700 and narrow-bodied service by carriers below $600. The actual level of fares, however, was considerably reduced by the presence of large fare reductions through seat sales, often done clearly in competition with another carrier. In 1986, for example, a price war broke out between British Air Tours and Wardair that saw fares for the month of June eventually cut from Wardair's initial $598 to $399.

In 1983 Wardair had cut $100 from its initial June fare. In 1984 it cut $140. In 1985 British Air Tours cut $90 from its initial peak fare for L-1011 service from $828 to $738. In 1987 Wardair had a sale which reduced its peak fare from $748 as initially advertised to $636.

In the spring of 1988 the fare structure to London from the Toronto area saw Air Canada offering for high season an economy fare of $2,310 return, a special economy fare of $1,436, and a Super-Apex at $788 ($838 on weekends). Wardair's fare was $748, Suncrest offered a Boeing-747 fare at $729, and Nationair was offering a fare from Hamilton, near Toronto, to London at $598.

Charter fares really have not changed in the last eight years. They are currently marginally below special scheduled fares for wide-bodied charter, with narrow-bodied charter flights being available at fares noticeably below those for wide-bodied service.

One final development in charter fares in the 1980s that should be noticed is the emergence in large centres like Toronto of "Last Minute Booking" clubs or firms. These buy up space on charter flights that is empty at the end of the "topping up" period permitted charter carriers. This is then resold to the public at very low prices. In 1986 the Last Minute Club offered return fares, Toronto-London, to its "members" starting at $169 (Globe and Mail July 2 1986, C4). In 1987 it offered its "members" a return fare from London at $299 while the travel firm, Kipling Travel, offered a "faresaver" return fare to London at only $419 (Globe and Mail July 1 1987, C2). In 1988 Kipling Travel was offering "faresaver" return fares, Toronto-London, at $359 (Globe and Mail June 15 1988, A11).

In conclusion, scheduled air service overcame its rival, the ocean liner, when the cost advantage of sea travel eventually fell behind the opportunity cost of the extra time involved in a sea passage, apparently something over fifty dollars at the time. The great difference between scheduled and charter air fares was sufficient for charter services to become a strong rival of scheduled service even when the

conditions that had to be fulfilled to permit a passenger to use charter services were quite stringent. At the end of the 1970s the difference tended to close, at the cost of the scheduled industry's revenues not keeping up with its expenses. The Canadian charter services have had to accept a relatively stationary level of air fares during the last eight years in order to maintain their importance as an alternative to scheduled services. In addition the new narrow bodied carriers find they must offer a sizeable fare differential to compete with scheduled services.

10.5 CONCLUSIONS

The structure in which scheduled fares are established on the Canadian North Atlantic has stood the test of time remarkably well and is little changed from what it was forty years ago. It is now split off from the American North Atlantic but continues to evolve more or less in tandem with it. Canadian fares in at least some categories, however, have tended since the division to be somewhat lower. One of Canada's carrier's in particular, Air Canada, has been a consistent supporter of lower fares to develop the North Atlantic scheduled market. Economic forces are clearly not the predominant force behind airline participation on the North Atlantic because over a decade of consistent losses on the North Atlantic has not reduced the number of participants in the market to any extent. The great efforts of the United States government to secure lower scheduled fares through de-regulation on the North Atlantic did secure lower

scheduled fares, but not lower scheduled fares that were in any sense economic from the point of view of the cost structure of most of the carriers then participating on the North Atlantic. The major forces that were working towards the re-establishment of economic fares on the North Atlantic in the mid 1980s were the decline of the threat from charter carriers and a decline in oil prices. In the competition between scheduled air travel and its two main alternatives, price has been of crucial importance. The opportunity cost of the longer time in crossing is what doomed the Atlantic liner. The great difference in price between scheduled and charter carriers is what established charter as a meaningful alternative to scheduled services even in the face of great restrictions on the availability of charters. Once the difference between the two was ameliorated at the end of the 1970s charter collapsed on the American North Atlantic but has survived on the Canadian North Atlantic where charter carriers have been forced to accept relatively constant prices for the last decade. The new charter entries into the Canadian North Atlantic relying as they do upon narrow-bodied aircraft must offer a price differential in order to compete. They have benefitted disproportionately from the fall in oil prices and will suffer disproportionately should oil prices again rise. Chapter XI will now review Canadian policy and the performance of Canadian carriers on the North Atlantic.

Chapter XI

A REVIEW OF CANADIAN POLICY AND CANADIAN CARRIER PERFORMANCE IN THE LIGHT OF THE HISTORICAL EVIDENCE

This chapter will undertake a critical review of Canadian government policy and the performance of Canadian carriers in the context of the North Atlantic market during the period 1947-1986. It will comment briefly on the changes introduced into government policy at the close of the period during 1985/1987.

11.1 CANADIAN PUBLIC POLICY

The existence of two major scheduled carriers in Canada resulted from the creation of TCA by the Canadian government and the refusal of the government to create a single carrier either by expropriating the CPR's carrier CPAL/CPA, or by selling TCA/Air Canada to the CPR. By 1965 both carriers were operating on the North Atlantic. In 1965 Transport Minister Pickersgill, after consulting with the two airlines, instituted a strategic policy when he divided the world between them. Air Canada got northern Europe, except the Netherlands, and the Caribbean. CPAL got the Pacific, Latin America, the Netherlands, and southern and southeastern Europe. Pickersgill's intention was to ensure that Canada's carriers devoted their attention internationally to

competing with foreign carriers rather than each other. The division was also intended to assist the carriers in long-range planning.

The initial division has twice undergone substantial revision. In 1973 Transport Minister Marchand re-allocated national markets somewhat in favour of Air Canada but within the framework of a continuation of the division of the world. Recently in 1987, a further modification was made under government auspices between Air Canada and CAI, the successor to CPA, for a route exchange under government auspices. Both carriers as a result are in a position to build an around the world system at such time as all the necessary bilaterals are in place and the economics permit.

The division of the world into "zones of interest" made the resources of both Canadian carriers available to help develop the pattern of Canadian services to Europe. Not only was the route network of Canadian carriers into Europe and beyond thus developed to its greatest practical extension under prevailing economic conditions, but the networks of both carriers within Canada served to provide access from within Canada to Europe. Consumers received a wider choice and, on each transatlantic route served, the Canadian carrier was free to consider how best to employ Canadian resources to develop its services without having perhaps to divert resources to counter competition from another Canadian carrier. This is not to say that the system was without

its problems from time to time or that the route allocation was necessarily optimal at any particular time, given the system of bilaterals in effect. Neither Air Canada nor CPA, for example, were able to use the fifth freedom rights which Canada had obtained, in the 1950s and at the beginning of 1960s, for operations between France and Italy. However, the system appears to have been, on balance, very successful.

The presence of only one Canadian carrier on each transatlantic route simplified the reaching of agreements between Canada's carriers and their opposite numbers to co-ordinate their activities. Scheduled passengers could thus be provided with the most efficient and attractive service possible under the price constraints and resources were not wasted through the duplication of services. The decision of the Canadian government to permit pooling allowed Canadian carriers legally to make such agreements and thus to save resources in ways that carriers operating between the United States and Europe could not, since the CAB would not permit pooling even if the carriers could reach an agreement.

The Canadian government in its bilateral negotiations has provided its carriers with access to those markets which it proved economic for them to serve, while generally restricting foreign access to Canadian markets as much as possible to support the route systems of its carriers. It opened Toronto to the major foreign carriers only grudgingly and in the face of very strong pressure from foreign governments,

and only very recently to minor foreign carriers. It was even more loath to open western Canada to major foreign carriers and did so only in exchange for fifth freedom rights which have been, and will continue to be important to the expansion of services by Canadian carriers in the 1980s and 1990s.

In the North Atlantic market, Air Canada and CPA concentrated their efforts in the scheduled market, but used the charter market to the extent that they possessed excess capacity from time to time. During the 1960s the Canadian government perceived that Canadian participation in the charter market had been unduly limited. Given the differing economics of scheduled and charter operations, it felt that a larger share of the market could be obtained for Canadian operators by encouraging the development of Canadian specialists in charter operations. It continued to restrict the entry of charter carriers into the scheduled market and to support the development of one or more specialized charter carriers free of restrictions like that of the US CAB which, at the beginning of the 1960s had in place its "5% Rule" to restrict charter carriers to a small proportion of the total market to protect its scheduled carriers.

The absence of government restrictions on the expansion of charter carriers permitted Wardair to grow to the point that it carried over 60 per cent of the Canadian North Atlantic charter market. It was Wardair's size that permit-

ted Wardair to operate a balanced system of year round operations and to weather bad years which forced other carriers out of the North Atlantic charter market. Wardair's role was crucial to the survival of the Canadian charter market in the black years of the second oil crisis and this charter market created effective competition for the carriers in the scheduled market.

It appears that Canadian government policy has provided effective support for both Canadian producer and consumer interests. Travellers have been able to access the systems of Canadian carriers to a wide range of European centres by both scheduled and charter means. The carriers have been allowed to specialize to support the most economic development of their systems. The benefits of pooling have been permitted to both travellers and the airlines. Furthermore, this development of the North Atlantic system was done without the financial subsidization of the carriers.

11.2 CANADIAN CARRIER PERFORMANCE

The performance of Canadian scheduled carriers under these policies of the Canadian government was generally good to excellent. Their performance with respect to load factor levels, and thus to profitability, has been at least average and sometimes excellent. In addition, their ability to obtain and hold market share has been noticeably superior to that of the general level achieved on the North Atlantic by

North American carriers. Important in this has been the ability of Canadian carriers to pool with European services and the fact that Canadian carriers have maintained their service standards both on-board and after while that of some American carriers, e.g. PAA, have deteriorated over the years.

Canada's scheduled carriers have generally remained technologically competitive on the North Atlantic. In 1947 TCA introduced into service the Canadian development of the DC-4, the North Star, which was intended to combine the best of the British and American technology of the war years and which proved to be basically comparable with the other piston aircraft being introduced in the North Atlantic market following the end of the Second World War. Both CPAL, after its entry in the North Atlantic market, and TCA kept basically competitive as improvements in propeller aircraft were introduced. CPAL, along with BOAC, led in the introduction of turbine aircraft (the turbo-prop Britannia) on the North Atlantic. TCA introduced turbo-jet aircraft at about the same time as did most of the scheduled carriers on the North Atlantic, as it later did the wide-bodied Boeing-747. CPAL/CPA was slightly behind other carriers in placing both jet aircraft and wide-bodied jet aircraft on the North Atlantic. Both carriers acted to modernize their fleets in response to the oil crisis and changes in engine noise regulation and Air Canada and CPA's successor have both again

acted to modernize their fleets in response to the technological developments of the 1980s.

Of Canada's scheduled carriers, it was the publicly owned Air Canada that was, in particular, a strong advocate of lower scheduled fares on the North Atlantic. On several occasions in the 1960s and 1970s, Air Canada took a leading role in efforts to secure lower fares at IATA traffic conference meetings. It also led led in the introduction of the "Seat Sale" concept into the North Atlantic market.

Canadian carriers have consistently moved to adopt any changes in marketing introduced into the North Atlantic market. For example, on the introduction of tourist class service, TCA obtained permission to convert its North Stars for tourist class service simply by removing the lounge from its aircraft and thus was enabled to offer a superior version of tourist class service. Air Canada, CPA, and Wardair all introduced special sales organizations to deal with the introduction of the ABC. Both Air Canada and CPA adopted the recent innovations in marketing including "business class" and frequent flyer programs. They also moved jointly to obtain improved access to the computer systems used now almost universally to make reservations for travellers by creating the Gemini Group.

Wardair has been an outstanding success in the charter markets. Canada continues to have a strong charter market

with the addition of new smaller carriers which are still expanding at a time when the charter market has practically disappeared elsewhere on the North Atlantic. It has been a market dominated by Canadian operations.

In conclusion, the Canadian governments during the four decades from 1947 to 1986 put in place a relatively coherent set of policies on the North Atlantic which allowed the major Canadian carriers an opportunity to perform well. These carriers have, indeed, performed well during most of the period under those policies.

11.3 CURRENT DEVELOPMENTS

In relating the results of this review to recent developments which affect Canadian participation in the North Atlantic market, it is noteworthy that the "division of the world" policy has been continued. Canada's two major scheduled carriers have been allowed to work out route exchanges under government auspices. As a result the global development aspirations of Air Canada and Canadian Airlines International have been furthered and the international competitive strength of Canada's airlines has been increased.

Canadian airline operations have been very successful in the Canadian North Atlantic market under the system of a single designation of scheduled carriers on all transatlantic routes, with specialist charter carriers kept free of

scheduled obligations for concentration on opportunities in the charter market. The move to permit Wardair to enter the scheduled North Atlantic market, along with other scheduled markets, would seem to be of questionable wisdom. Its transformation into a scheduled carrier in several markets can not help but reduce the flexibility that was one of the strengths of this carrier in the past. It also moves from being the largest charter carrier in the Canadian North Atlantic market to becoming the smallest scheduled carrier in that market. In addition, this is happening just as the period of transition to a successor to Max Ward can not help but be approaching. With the absorption of British Caledonian by British Airways, Wardair loses a major carrier with whom it shared a computer reservation system and it is outside the Gemini Group. Its relatively small size compared to Air Canada and CAI, and the timing of the move, may prove too much for it too withstand in the next few years.

On the other hand, Wardair had probably reached the limits of practical expansion in the markets with which it was traditionally involved, the North Atlantic charter and the "Fun in the Sun" charter markets. As a proven operator, the granting of permission to it to enter the scheduled market between Canada and the UK may be the best method of providing it with an opportunity for continuing economic health and development. Wardair has been marked by entrepreneurial spirit and has consistently endeavoured to diversify into as

many markets as possible, and to grow as large as possible. This is another attempt to again diversify, and by diversifying to grow.

The presence of a specialized, technologically advanced, carrier in the charter market has served Canada well. The movement of Wardair increasingly into the scheduled market leaves a gap since the two emerging replacements, Nationair and Worldways, predominantly still use older aircraft. The efforts of these carriers to modernize their fleets should be regarded favourably. They should also be encouraged to concentrate their efforts primarily in the charter market.

The recent moves to allow more than one designated Canadian carrier to operate on dense transatlantic scheduled routes should not be extended any further. After a period of several years to allow carriers to adapt to the new environment, and to allow the new entrants to recover some of their entry costs, if they can, the decision to double designate should be carefully re-evaluated in the light of its observed effects on the overall competitive position and performance of Canadian carriers versus foreign carriers on the North Atlantic. In the interval, Canadian carriers should be encouraged to develop new routes throughout the world rather than seek entry to a route already served by a Canadian carrier.

The at least partial privatization of Air Canada is unlikely to have any short run implications for the North Atlantic market. In the light of the competitive and public interest performance of Air Canada as a crown corporation, the new enterprise that Air Canada will become will be hard pressed to achieve a favourable comparison. It may, however, become a characteristically Canadian compromise, a successful institutional change in the light of changing conditions.

The emergence of Canadian Airlines International Ltd. has drawn on the financial and management strength of a successful Canadian regional carrier, Pacific Western Airlines, and the experience of CPA in international markets. The new airline should improve overall Canadian international air transport performance.

Chapter XII

CONCLUSION

This thesis has examined Canada's participation in the North Atlantic commercial air passenger transport market since that participation began in 1947. In doing so it has used an historical analytical approach based in an industrial organization analysis.

Chapter II outlined the organization of international aviation, the differences between scheduled and non-scheduled operations, and the role of international agreements and institutions. Chapter III studied the evolution of the Canadian North Atlantic market: the main trends in travel, the entry and exit of scheduled carriers in the market, the development of the different scheduled fare categories, and the main components of the market. Chapter IV studied the evolution of the technology of long-distance civil aviation and the technological choices made by Canada's carriers for their North Atlantic operations. Chapter V analyzed the evolution of Canadian government policy, its role in the negotiations at the end of World War Two which determined the subsequent structure of international aviation, the evolution of Canada's bilateral air agreements that opened Europe and beyond to Canadian carriers and Canada to foreign carriers, and the policy towards the allocation of overseas

destinations to Canada's carriers. Chapter VI examined the expansion of Canadian carriers into Europe, the development of pooling on the Canadian North Atlantic, and the performance of Canadian carriers. Chapter VII outlined the evolution of the charter market on the Canadian North Atlantic, what its traffic patterns have been, the role in the market taken by Canadian carriers, and the emergence of ITC travel and its implications for the North Atlantic. Chapter VIII followed interrelationships between the Canadian North Atlantic market and other markets in which Canadian carriers operate. Chapter IX outlined the evolution of the institutional structure in which the fares for the Canadian North Atlantic market are made. Chapter X then studied the evolution of scheduled fares, compared this evolution with that of costs on certain key occasions, examined the particular roles of Canadian carriers in influencing the evolution of fares, and commented on the evolution of charter fares. Chapter XI evaluated Canadian policy and Canadian carrier performance in the light of the historical evidence and the previously presented economic analysis.

After the Second World War, the North Atlantic as a whole became the largest intercontinental passenger transport market in the world, and the Canadian North Atlantic became the largest intercontinental market in which Canada participated. During the 1950s, falling air fares and improving levels of air passenger comfort and convenience overcame the

effect of the price differential that existed in favour of sea passage and a major modal shift occurred from sea to air travel. The Canadian North Atlantic market enjoyed generally rapid and sustained growth until the mid-1970s. Since the mid-1970s, traffic has tended to stagnate and only grew about 20 per cent during the entire last decade from 1976 to 1986.

The demand for air passenger transport on the North Atlantic has been met through two different markets which have had quite different cost structures, the charter market and the scheduled market. The direct costs of aircraft operation for any particular aircraft type are similar in both markets but the charter carriers in the past could save on indirect costs as they were less involved in marketing than the scheduled carriers, and also could maintain higher load factors and carry more seats on the same sized aircraft.

Technological change played an important role on the Canadian North Atlantic in the increase in passenger traffic because it prevented the real cost of transatlantic transportation from rising significantly from the end of the Second World War until the oil crises of the 1970s transformed the structure of input prices. It accomplished this while at the same time providing improvements in comfort, speed and range. The cost and price increases associated with the oil crises corresponded to the end of rapid growth on the

North Atlantic. The technological advances in fuel economy resulting from the research of the last decade have not provided the expected cost decreases because in the late 1980s oil prices had fallen from their peak at the end of the 1970s and the begining of the 1980s. They do, however, contribute to keeping down unit costs and will be important if oil prices return to high levels.

There have been major changes in the composition of demand during the period 1947 to 1986. Immigration, from being of significant importance at the end of the 1950s, has lost virtually all of its importance. During the 1970s European visitors to Canada became much more important than previously as a source of traffic and on occasion made up close to half of the market. The changes in the location of demand from one side of the Atlantic to the other were intimately connected to the movement of inflation rates and exchange rates, as well as the fact of the recovery of European incomes from the ravages of the Second World War. Under current conditions, however, the increase in European demand for transport to Canada has proven unable to make up for the decrease in Canadian demand for transport, when effective prices move against Canadians. The prospect of a strong rate of growth in traffic on the Canadian North Atlantic requires a relatively low rate of inflation and a strong currency in Canada versus Europe.

Since the charter market re-emerged on the Canadian North Atlantic at the beginning of the 1960s as a method of transatlantic travel for tourists, it has tended to be relatively more important on the Canadian North Atlantic than the charter market has been on the North Atlantic as a whole and it has proven to be more durable, remaining of considerable importance at the end of the period studied. The charter market re-emerged because of a combination of favourable circumstances, technological change brought onto the second hand aircraft market a large number of long-range aircraft, a large price differential existed between the cost of charter operation and the level of scheduled fares, and the political climate on the North Atlantic was favourable to the expansion of charter operations.

Canada has benefitted from having more than one scheduled national carrier because the two initial flag carriers were managed by men with different business philosophies, the one more cautious and the other more daring, which complemented each other by providing different responses to opportunities. Both Canada's scheduled carriers demonstrated flexibility in response to changing economic conditions and a strong desire to remain technologically competitive where both possible and advisable. They have remained competitive in meeting new innovations in marketing and Air Canada was responsible for the introduction of the "Seat Sale" concept. Both have tended to perform at least as well as the average with regard to load factors and have often performed much

better. They have jointly ensured that a larger share of the Canadian North Atlantic market is carried by Canadian carriers than US carriers have achieved between Europe and the United States. Pooling has been an important competitive tool of Canadian carriers.

Canadian carriers led by Wardair have come to dominate the charter market and thus have played a important role in keeping the charter market an important challenge to scheduled carriers. On the Canadian North Atlantic Wardair played the same role that the low-cost scheduled carriers like Laker's Skytrain played in the American North Atlantic market, providing reliable low-cost access to Europe on a regular basis. The growth of ITCs transformed the structure of the charter market and played an important role in developing the year round operations which allowed Canadian charter carriers, particularly Wardair, to weather the oil crises and the response of the scheduled market to their challenge on the North Atlantic. As in the case of the scheduled carriers, remaining technologically competitive also has been vital to Wardair's success. After Wardair took on many of the attributes of a scheduled carrier with regards to marketing and regularity of operation, a new generation of Canadian charter carriers of the more traditional form have emerged to engage in price competition with Wardair. These new carriers, however, operate older, less fuel efficient aircraft and are at risk should there be a return to higher petroleum prices.

The operations on the North Atlantic of all three of Canada's major carriers have been intimately affected by, and have strongly influenced, other portions of their systems. Air Canada used its services to the Caribbean during its peak season in the winter time as a means of using personnel and equipment released from service on the North Atlantic during the winter low season in that market. Wardair used the demand for winter holidays in the Caribbean, Florida, Hawaii, etc. as a means of employing equipment during the winter that was used on the North Atlantic during the summer. CPA used its operations to Oceania and South America both to support its entrance onto the North Atlantic and as the means of using during the winter equipment required during the summer for its services to Europe.

The IATA system of Traffic Conferences remains the system for setting scheduled fares on the Canadian North Atlantic. One of Canada's scheduled carriers, TCA/Air Canada, played a particularly active role in agitating for lower scheduled fares to meet the competition of the charter market during the 1960s and 1970s and in 1979 it introduced the concept of the "Seat Sale" into intercontinental aviation. Wardair, by keeping the charter market an effective challenge to scheduled operations on the Canadian North Atlantic, has been a powerful force holding down fares. After the division of the North Atlantic sub-areas into two independent entities, Canadian fares have not shown any tendency to rise above

those on the apparently more competitive American North Atlantic, if anything they have tended to be lower, at least in the more highly priced fare categories. The strong competition between scheduled and charter operations has held down the fares of both during the 1980s.

Overall the Canadian government provided Canada's carriers with an environment in which it was possible for them to perform well and they responded to that opportunity.

The Canadian North Atlantic market has evolved to its current size and shape in response to the presence of a strong demand for such a service, the institutional structure which was put in place internationally, the evolution of the technology of long-range civil air transport, the policies of the Canadian government, and the decisions of Canadian and foreign carriers.

Canadian government policy during the period 1947-1986 effectively supported Canadian interests and Canadian carriers have shown an impressive level of strength and range in performance. The past interactions between the Canadian government and Canadian carriers suggest a good continuing basis for policy in support of Canadian public interest in the North Atlantic market.

Appendix A

TABLES

TABLE A.1

Air Traffic on the North Atlantic 1947-1978

In Thousands

	Scheduled			Charter			Total
Year	IATA	Other	Total	IATA	Other	Total	
1947							209
1948	240			12			253
1949	267			6			273
1950	312			6			317
1951	330			12			342
1952	432			16			448
1953	507			17			523
1954	550			31			581
1955	652			40			692
1956	785			50			835
1957	968			51			1,019
1958	1,193			99			1,292
1959	1,367			173			1,540
1960	1,761			168			1,929
1961	1,919			256			2,176
1962	2,272			315			2,587
1963	2,422	67	2,489	414	55	469	2,958
1964	3,069	95	3,164	482	112	594	3,758
1965	3,611	128	3,739	480	198	678	4,417
1966	4,198	146	4,344	503	303	806	5,150
1967	4,987	166	5,153	517	510	1,027	6,180
1968	5,287	165	5,422	495	753	1,256	6,678
1969	5,997	183	6,192	780	1,411	2,128	8,320
1970	7,201	262	7,484	817	1,684	2,459	9,943
1971	7,532	268	7,823	1,059	2,181	3,181	11,004
1972	9,503	294	9,880	1,329	1,976	3,255	13,135
1973	10,029	300	10,360	1,671	2,085	3,691	14,051
1974	9,395	302	9,697	1,170	1,992	3,162	12,859
1975	8,863	296	9,159	1,305	1,954	3,259	12,418
1976	9,836	320	10,156	1,660	2,018	3,678	13,834
1977	10,342	357	10,699	1,602	2,818	4,423	15,122
1978	12,590	608	13,199	1,174	2,483	3,627	16,826

Source: From 1963 the totals for charter and scheduled service are from IATA (1986b), the remaining figures are from various issues of IATA's World Air Transport Statistics.
Note: The sub-totals may differ from the totals where they are from different sources.
Note: Figures exclude Miami gateway traffic.

TABLE A.2

Air Traffic on the North Atlantic 1978-1986

In Thousands

Year	Scheduled	Charter	Total
1978	13,710	3,670	17,381
1979	15,828	2,759	18,587
1980	16,650	1,925	18,575
1981	17,236	1,779	19,015
1982	16,352	2,177	18,529
1983	17,311	2,354	19,665
1984	19,488	2,490	21,978
1985	20,961	2,178	23,139
1986	19,724	1,359	21,083

Source: IATA's North Atlantic Passenger Reports, various issues.
Note: Figures include Miami gateway traffic.

TABLE A.3

Canadian North Atlantic Traffic 1961-1986

In Thousands

Year	Scheduled Traffic Can.	Scheduled Traffic IATA	Charter Traffic Can.	Charter Traffic IATA	Total Traffic Can.	Total Traffic IATA
1961	315		42		357	
1962	342		68		410	
1963	346		113		460	
1964	436/	425	159/	163	595/	588
1965	542/	536	175/	170	717/	706
1966	698/	683	219/	212	917/	895
1967	937/	916	266/	252	1,204/	1,168
1968	911/	888	354/	352	1,265/	1,240
1969	939/	959	593/	575	1,532/	1,534
1970	1,150/	1,142	653/	648	1,803/	1,790
1971	1,123/	1,155	771/	769	1,894/	1,924
1972	1,596/	1,618	720/	728	2,316/	2,346
1973	1,888/	1,860	833/	834	2,721/	2,694
1974	2,080/	2,115	765/	802	2,845/	2,917
1975	1,982/	1,992	961/	959	2,943/	2,951
1976	2,105/		938/		3,043/	
1977	2,182/		931/		3,113/	
1978	2,268/	2,250	876/	883	3,144/	3,133
1979	2,411/	2,407	876/	902	3,287/	3,309
1980	2,272/	2,260	762/	776	3,034/	3,036
1981	2,189/	2,187	765/	780	2,954/	2,967
1982	2,099/	2,066	877/	875	2,976/	2,941
1983	2,126/	2,140	915/	897	3,041/	3,037
1984	2,405/	2,431	947/	752	3,352/	3,183
1985	2,633/	2,649	1,062/	771	3,695/	3,420
1986	2,738/	2,691	921/	555	3,659/	3,245

Sources: The right hand totals of each column are Canadian government figures and the left totals are IATA figures. The Canadian totals are from Stat. Can. series 51-201, 51-202, 66-202, and 87-401 for the years up to and including 1977, except the charter totals for 1961-1968 which are from Saarty (1969) and that for 1969 from Edwards (1970). After 1977 they were obtained directly from Ottawa. The IATA totals are from IATA (1976d) to 1975 and thereafter from various issues of IATA's World Air Transport Statistics <u>and</u> North Atlantic <u>Passenger</u> <u>Report</u>.

TABLE A.4

Motives of Canadian Visitors to Europe

Percentages Travelling for Recreation or to Visit Friends and Relatives

	UK ONLY			UK & EUR.			EUR. ONLY		
	RT	VF	R&V	RT	VF	R&V	RT	VF	R&V
1956	19.8	66.9	86.7	44.4	27.6	72.0	21.8	54.2	76.0
1957	16.1	73.5	89.6	45.8	27.0	72.8	22.9	57.6	80.5
1958	16.6	73.7	90.3	51.9	29.7	81.6	26.3	59.9	86.2
1959	24.2	66.6	90.8	52.4	29.4	81.8	28.5	57.0	85.5
1960	16.7	74.6	91.3	52.3	33.1	85.4	18.8	69.5	88.3
1961	20.0	72.2	92.2	52.6	31.5	84.1	24.5	63.8	88.2
1962	18.6	75.3	93.9	51.3	33.8	85.1	25.4	62.4	87.8
1963	19.8	72.9	92.7	53.6	31.2	84.8	29.6	58.7	88.3
1964	21.5	71.0	92.5	53.0	32.5	85.5	27.2	63.0	85.2
1965	27.5	65.3	92.8	58.1	29.0	87.1	28.8	60.5	89.3
1966	31.5	61.1	92.6	56.8	27.4	94.2	29.2	58.7	87.9
1967	-	-	-	-	-	-	-	-	-
1968	38.4	54.0	92.4	62.3	25.3	87.6	35.3	51.8	87.1
1969	36.7	55.9	92.6	60.8	23.1	83.9	37.2	47.4	82.6
1970	36.9	54.6	91.5	61.4	19.9	81.3	39.5	44.9	84.4
1971	40.6	52.0	92.6	62.0	17.2	79.2	47.9	35.4	83.3
1972	42.3	50.5	92.5	68.7	17.4	86.1	43.5	45.1	88.6
1973	44.0	46.9	90.9	66.0	17.8	83.8	48.5	36.8	85.3
1974	38.5	50.6	89.1	58.9	22.7	81.8	49.0	35.8	84.8
1975	41.0	48.0	89.0	54.8	24.0	78.8	44.4	40.5	84.9
1976	42.1	44.8	86.7	57.4	19.0	76.4	40.7	40.9	80.6
1977	44.4	46.9	91.3	58.6	22.7	81.3	44.6	38.9	84.5
1978	42.5	46.4	87.9	54.9	23.3	78.2	43.3	39.6	82.9
				* * *					
1979	18.2	58.8	77.0	30.4	26.3	56.7	28.1	45.0	73.1
1980	14.2	63.2	77.4	33.2	24.7	57.7	25.3	45.2	70.5
1981	14.0	66.3	80.3	35.0	27.0	62.0	24.5	47.2	71.7
1982	16.2	62.0	78.2	41.1	23.4	64.5	29.3	43.1	72.4
1983	20.1	59.2	79.3	39.8	26.7	66.5	30.1	42.8	72.9
1984	18.8	60.7	79.5	40.2	22.8	64.8	33.5	39.9	73.4
1985	25.3	54.8	80.1	47.1	22.7	69.8	38.1	37.4	75.5

Source: Statistics Canada Series 66-201
Note: After 1978 the questionnaire changed. A category was added for persons wishing to state they were travelling for more than one purpose.

TABLE A.5

Motives of European Visitors to Canada

Percentages Travelling for Recreation and to Visit Friends and Relatives

Year	FROM UK RT	FROM UK VF	FROM UK R&V	FROM CONTINENT RT	FROM CONTINENT VF	FROM CONTINENT R&V	FROM BOTH RT	FROM BOTH VF	FROM BOTH R&V
1959			77.1			73.6			
1960			79.8			74.0			
1963	7.4	78.8	86.2	6.3	77.0	83.3			
1964	8.7	75.9	84.6	11.5	59.3	70.8			
1965	10.1	76.3	86.4	11.4	60.8	72.4			
1966	9.8	77.4	87.2	12.8	58.2	71.0			
1968	6.3	79.5	85.8						
1969	6.3	78.4	84.7						
1970	4.7	78.4	83.7						79.0
1971	4.3	79.7	84.0						79.7
1972	28.7	57.7	86.4	33.4	43.4	76.8	31.1	50.1	81.2
1973	30.9	59.0	89.9				36.0	49.2	85.2
1974	33.7	53.8	87.5				35.3	47.4	82.7
1975	35.8	50.7	86.5				37.3	45.1	82.4
1976	34.5	53.7	88.2				38.3	47.2	85.5
1977	15.9	71.7	87.6				21.8	60.7	82.5
1978	19.6	69.4	89.0				19.6	58.6	82.9
					* * *				
1979	12.8	57.1	69.9				19.4	49.2	68.6
1980	14.5	55.7	70.2				20.2	48.1	68.3
1981	16.5	56.2	72.7				21.3	48.2	69.5
1982	16.1	56.6	72.7				20.9	48.5	64.6
1983	15.8	57.3	73.1				20.0	49.1	69.1
1984	13.8	56.8	70.6				19.0	49.0	68.0
1985	12.1	58.5	70.6				17.5	48.7	66.2

Source: Statistics Canada series 66-201.
Note: After 1978 the questionnaire was changed. A category was added for persons wishing to state they were travelling for more than one purpose.

TABLE A.6

IATA North Atlantic Carriers' Passenger Fare Types
1964-77

In Percentages

FARE \ YEAR	1964	1965	1966	1967	1968	1969	1970
First Cl.	8.0	8.0	8.2	7.6	7.3	8.0	6.6
Economy	54.1	54.7	48.3	46.1	43.1	36.4	25.9
Excursions:							
14/17-21/28	19.4	22.8	26.3	26.3	24.3	26.6	17.9
22/29-45							21.1
GIT & CBIT				5.9	9.7	13.3	11.2
Affinity	4.2	2.7	3.6	4.9	6.0	6.6	7.7
Other	14.3	11.8	13.6	9.2	9.6	9.1	9.6

FARE \ YEAR	1971	1972	1973	1974	1975	1976	1977
First Cl.	6.0	4.8	4.8	5.4	5.4	5.4	5.7
Economy	24.0	17.5	18.3	23.2	24.1	24.2	25.8
Excursions:							
14/17-21/28	15.7	8.7	8.0	8.3	7.4	6.9	7.0
22/29-45	17.8	28.8	33.1	34.1	28.8	25.5	18.2
APEX					6.8	11.1	16.9
GIT & CBIT	11.1	11.8	9.8	9.1	8.8	8.4	8.5
Affinity	7.6	5.5	3.7	4.1	3.5	2.9	1.6
Youth	7.5	13.1	10.8	4.2	3.8	3.6	3.2
Other	10.3	9.9	11.5	11.6	11.5	12.0	13.2

Source: various issues of IATA's World Air Transport Statistics.

TABLE A.7

IATA North Atlantic Carriers' Passenger Fare Types
1978-86

In Percentages

Year / Fare	1978	1979	1980	1981	1982	1983	1984
Concorde	1.4	1.2	1.4	1.3			
First Cl.	4.7	4.8	4.7	4.6	5.2	4.7	4.4
Economy	22.0	20.2	20.9	20.4	22.3	20.0	18.9
Excursions:							
14/17-21/28	4.8						
22/29-45	13.1	14.1	13.5	13.5	13.7	11.5	10.5
APEX	18.9	19.4	22.1	18.5			
Super APEX	8.3	17.2	18.2	23.6	41.3	46.9	48.9
GIT + CBIT	5.4	4.2	3.8	2.9	3.6	3.4	3.8
Budget	3.3						
Standby	2.7	6.0	5.5	4.4	3.3	1.7	1.4
Affinity	1.0	0.9	0.9	1.8			
Youth	1.9	1.1	1.0	1.0			
Other	12.6	10.9	8.1	8.0	10.6	11.8	12.1

Year / Fare	1985	1986
First Cl	3.9	4.1
Business	9.8	10.4
Economy	9.5	9.3
Excursion	8.9	9.5
APEX/S.APEX	51.9	46.1
GIT & CBIT	3.4	4.0
Bud. & Stby.	1.0	1.0
Other	11.7	15.6

Source: various issues of IATA's World Air Transport Statistics.

TABLE A.8

Index of Exchange Rates Facing Canadian Travellers

1971 = 100

Year / States	1972	1973	1974	1975	1976	1977	1978
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0
UK	100.4	99.4	92.7	91.5	72.1	75.2	88.7
France	107.2	123.1	111.0	129.7	112.8	118.1	138.3
FRG	107.2	130.4	130.5	142.5	135.2	158.1	196.2
Italy	103.9	105.3	92.1	95.5	73.4	73.8	82.3
Spain	105.8	117.9	115.8	121.5	101.2	96.6	102.4

Year / States	1979	1980	1981	1982	1983	1984	1985
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0
UK	100.7	110.2	98.4	87.5	75.7	70.1	71.7
France	150.2	123.9	125.9	102.9	88.7	81.1	83.6
FRG	220.5	222.2	183.4	175.3	166.7	157.4	161.2
Italy	86.3	83.7	64.9	55.9	49.8	45.2	43.9
Spain	119.6	112.1	98.4	77.2	59.1	60.9	60.7

Sources: Stats. Can. series 66-201 and 87-401.

TABLE A.9

Consumer Price Indices 1972-1985

1971=100

Year / States	1972	1973	1974	1975	1976	1977	1978
Canada	104.8	112.7	125.0	138.5	148.9	160.8	175.2
UK	107.1	117.0	135.6	168.6	196.4	227.6	246.8
France	106.2	114.0	129.6	144.9	158.2	173.2	189.1
FRG	105.5	112.8	120.7	127.9	133.7	138.9	142.5
Italy	105.7	117.9	139.5	163.2	190.6	223.0	250.2
Spain	108.5	115.0	139.9	163.6	192.6	239.7	287.0

Year / States	1979	1980	1981	1982	1983	1984	1985
Canada	191.2	210.6	236.9	262.5	277.6	289.7	301.3
UK	279.5	329.8	369.1	391.6	419.3	438.9	466.5
France	209.3	237.1	268.9	300.6	328.6	353.9	374.6
FRG	148.5	156.7	166.0	174.6	180.1	184.9	188.9
Italy	287.2	347.8	415.6	484.6	555.7	614.7	667.5
Spain	332.2	383.6	439.6	502.9	563.6	627.7	682.7

Sources: Stats. Can. series 66-201 and 87-401.

TABLE A.10

Index of Effective Prices in Selected Countries

Facing Canadian Travellers (1971=100)

Year / States	1972	1973	1974	1975	1976	1977	1978
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0
UK	102.6	103.2	100.6	111.4	95.1	106.4	124.8
France	108.6	124.5	115.1	135.7	119.8	127.2	142.3
FRG	107.9	130.5	126.0	132.0	121.4	136.6	159.6
Italy	104.8	109.4	102.8	112.5	94.0	102.3	117.5
Spain	109.5	126.5	129.6	143.5	130.9	144.0	167.7

Year / States	1979	1980	1981	1983	1983	1984	1985
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0
UK	147.2	172.6	153.3	133.5	114.2	106.2	110.0
France	164.4	139.5	142.9	117.7	104.9	99.1	103.9
FRG	171.3	165.3	128.5	116.7	108.2	100.5	101.1
Italy	129.5	138.2	113.9	103.2	99.7	95.9	97.3
Spain	207.7	204.2	165.9	148.0	119.9	132.0	137.5

Source: Stat. Can. series 66-201 and 87-401.
Note: To obtain the Index of Effective Prices facing Canadians in Y, multiply the Consumer Price Index for Y by the Exchange Rate Index and divide by the Canadian Consumer Price Index.

TABLE A.11

Tourism on the Canadian North Atlantic

In Thousands

Year	Canadian Tourists To Europe	Canadian Tourists To Africa	Directly Arriving Tourists From Europe	Directly Arriving Tourists From Africa
1958	111.9		32.5	
1959	135.6		35.1	
1960	157.8		40.4	
1961	186.2			
1962	209.8			
1963	221.6			
1964	264.0		92.3	0.9
1965	295.4		108.1	1.5
1966	335.0		123.0	1.5
1967	299.6			
1968	372.6			
1969	503.6			
1970	612.0			
1971	642.2			
1972	667.9		347.1	8.1
1973	827.0	21.6	449.0	11.4
1974	823.0	22.2	493.0	14.1
1975	851.6	27	522.6	13.6
1976	919	25	589.5	17.8
1977	1,068	26	545.3	16.4
1978	1,013	29	598.0	18.2
1979	935	23	706.7	19.2
1980	788	25	714.6	20.1
1981	743	24	740.1	21.8
1982	761	27	683.0	25.0
1983	894	21	601.9	25.2
1984	1,058	33	623.0	22.7
1985	1,235	37	609.1	22.5

Sources: Stat. Can. series 66-201; 66-202; and 87-401.

TABLE A.12

Per Cent of Canadian Travellers Visiting Europe

Excluding Those Visiting the USA, 1958-1986

Year	Per Cent
1958	68.2
1959	66.8
1960	65.5
1961	67.2
1962	67.5
1963	64.8
1964	67.3
1965	65.6
1966	66.4
1967	57.4
1968	61.0
1969	59.1
1970	55.6
1971	53.7
1972	58.4
1973	64.0
1974	62.7
1975	60.0
1976	58.1
1977	60.1
1978	56.0
1979	53.2
1980	49.7
1981	50.3
1982	51.1
1983	51.0
1984	52.6
1985	53.7
1986	49.5

Source: Stat. Can. 66-201.

BIBLIOGRAPHY

Adkins, D. L., Langelan, M.J., and Trojanowski, J. M. (1982), Is Competition Workable in North Atlantic Airline Markets?, International Economic Analysis Group, Bureau of International Aviation, Civil Aeronautics Board.

Air Canada (various years), Annual Report.

Air Transport Association of America (1967-1971) Air Transport Facts and Figures.

Ashley, C. (1963), The First Twenty Five Years, a study of Trans Canada Air Lines, Toronto: Macmillan.

Bain, D. M. (1987), Canadian Pacific Air Lines, Its History and Aircraft, Calgary: Kishorn Publications.

Baldwin, John R. (1975), The Regulatory Agency and the Public Corporation, The Canadian Air Transport Industry, Cambridge, Mass.: Ballinger Publishing Company.

Boeing (July 1970), Air Canada Systems Analysis, 1972, 1973, 1974, A9-4895.

Brooks, P.W. (1963), The Modern Air Liner, its origins and development, London: Putman.

---. (1963), The World's Airliners, London: Putman.

Cameron, H. D. (1963), Air Transport Review - pointers for future growth and prosperity, Canadian Aviation, 36:6, 16-18.

Canada, Canadian Transport Committee (various years, 1970-1986a), Air Transport Committee Decisions.

---.---. (various), Annual Report.

---. Department of Citizenship and Immigration, (various years), Annual Report.

---. Department of Finance (June 1987), Quarterly Economic Review Annual Reference Tables.

---. Department of Manpower and Immigration (various years), Annual Report.

---. Department of Transport (various years), Annual Report.

---. House of Commons (various years), Debates.

---.---. (various years, 1946-1957), Sessional Committee On Railways and Shipping Owned, Operated and Controlled by the Government.

---.---. (various years, 1958-1963), Sessional Committee on Railways, Airlines, and Shipping Owned and Controlled by the Government.

---.---. (various years, 1941-1965), Standing Committee on Railways, Canals, and Telegraph Lines.

---. Statistics Canada (1945-1969a), Civil Aviation, (monthly), catalogue no. 51-001.

---.---. (from 1970a), Transcontinental and Regional Air Carrier Operations, (monthly) catalogue no. 51-001.

---.---. (from 1970b), Air Carrier Operations in Canada, (quarterly), catalogue no. 51-002.

---.---. (from 1970c), International Air Charter Statistics, (quarterly), catalogue no. 51-003.

---.---. (1955-1969d), Canadian Aviation Preliminary Annual, (annually), catalogue no. 51-201.

---.---. (1945-1969e), Canadian Aviation Annual, (annually), catalogue no. 51-202.

---.---. (1970-1981f), Air Carrier Financial Statements, (annually), catalogue no. 51-206.

---.---. (from 1982f), Canadian Civil Aviation, (annually), catalogue no. 51-206.

---.---. (from 1975g), International Air Charter Statistics, (annually), catalogue no. 51-207.

---.---. (from 1946h), Travel between Canada and Other Countries, (annually), catalogue no. 66-201.

---.---. (1972-1977j), Travel,Tourism and Outdoor Recreation - A Statistical Digest, (annually), catalogue no. 66-202.

---.---. (from 1977/78k), Travel and Recreation - A Statistical Digest, (bi-annually), catalogue no. 87-402.

Canadian Pacific (various years), Annual Report.

Canadian Pacific Airlines (various years), Annual Report.

---. (1986b), Fly Around the World, Pamphlet.

Caves, R. E. (1962), Air Transport and its Regulators, Cambridge, Mass.: Harvard University Press.

Chuang, R. Y. (1971), International Air Transport Association, Netherlands: A. W. Sijthoff International Publishing Company.

Comings, C. and Wittington, H. (1987), Charter Airlines of Canada, Air World, 39:2, 18-19, 25.

Cooper, M. H. and Maynard A. K. (1971), The Price of Air Travel, Westminster: The Institute of Economic Affairs.

Davies, R. E. G. (1964), A History of the World's Airlines, London, New York, Toronto, Oxford University Press.

Doganis, Rigas, (1985), Flying Off Course, The Economics of Airlines, London, Boston, Sydney: George Allen and Unwin.

Edwards, L. (1965), Air Transport Review - Canadian carriers charting new peaks in passenger and cargo, Canadian Aviation, 38:6, 18-21, 57-58.

---. (1966), Air Transport Review - major carriers exceeding all expectations in traffic boom, Canadian Aviation, 39:6, 16-19.

---. (1967), Air Transport Review - regional airlines embark on equipment buying spree, Canadian Aviation, 40:6, 14-15, 48-49.

---. (1968), Air Transport Review - mounting costs and political indecision hamper carriers, Canadian Aviation, 41:6, 20-24.

---. (1969), Air Transport Review - regionals gaining strength - building up turbine fleets, Canadian Aviation, 42:6, 12-16.

---. (1970), The Air Transport Industry - watch those regionals, Canadian Aviation, 43:7, 14-15, 40-41.

Feldman, J. M. (1987), Canadian Airlines International, Canada's new major, Air Transport World, September 1987, 28-29, 32-34.

Fitzpatrick, G. L. and Modlin, M. J. (1976), Direct Line Distances, American edition, New Jersey and London:The Scarecrow Press Inc. Metuchen.

French, C. (1987), The Sky's The Limit, Report on Business Magazine, August, 16-23.

Friedman, J. J. (1976), New Air Transport Policy for the North Atlantic: Saving an Endangered System, New York: Atheneum Publishers.

Gidwitz, B. (1980), The Politics of International Air Transport, Lexington, Mass: Lexington.

Gillen, D. W., Oum, T. H., and Tretheway, M. W. (1985), Canadian Airline Deregulation: Assessing Effects and Prospects, Vancouver: Centre for Transportation Studies, University of British Columbia.

Goldklang, J. M. (1962), Transatlantic Charter Policy, Journal of Air Law and Commerce, vol.28, 99-136.

Green, W. and Swanborough G. (1982), An Illustrated Guide to the World's Airliners, New York: Arco Publishing Inc..

Haanappel, P. P. C. (1984), Pricing and Capacity Determination in International Air Transport: a legal analysis, Deventer, Boston: Kluwer Law and Taxation Publishers.

---. (1978), Ratemaking in International Air Transport, an analysis of international air fares and rates, The Netherlands: Kluwer.

Harbridge House, Inc., Simat, Hellieson & Eichner, Inc. and Kirkland, Ellis, & Rowe (1975), U.S. International Aviation Policy at the Crossroads: A Study of Alternative Policies and Their Consequences, 2 volumes, Washington, D.C.: Office of External Research, Bureau of Intelligence and Research, Department of State.

Harris, R. F. (1978), Air Transport Regulation, in G. Bruce Doern, ed., The Regulating Process in Canada, Toronto: Macmillan of Canada.

Hemphill, E. (1961), Air Transport - Decisive days ahead for regional carriers Canadian Aviation, 34:6, 8-13.

Hudson, K. (1972), Air Travel, A Social History, Totowa: Rowman and Littlefield.

International Air Transport Association (1973a), Agreeing Fares and Rates, A Survey of the Methods and Procedures used by the Member Airlines of the International Air Transport Association, first edition.

---. (various years b) North Atlantic Air Passenger Report.

---. (various years c), World Air Transport Statistics.

---. (1976d), Appendix to the North Atlantic Charter Study.

International Civil Aviation Organization (various years, a), Civilian Aircraft on Register, Montreal.

---. (various years, b), Fleet-Personnel, Montreal.

---. (various years, c), Traffic By Flight Stage, Montreal.

---. (various years, d), Traffic-Flow, Montreal.

---. (1983e), Manual on the Establishment of International Air Carrier Tariffs, Montreal.

---. (1985f), Regional Differences in Fares, Rates, and Costs for International Air Transport, ICAO Circular 171-AT/64.

---. (Sept. 1981g; Sept. 1982g; Sept. 1983g; Sept. 1985g), Survey of International Air Transport Fares and Rates, ICAO Circulars 168-AT/63; 176-AT/66; 182-AT/70; 198-AT/76.

---. (1969h), Civil Aviation in 1968 - A Special Report, ICAO Bulletin, 24:5, 5-41.

---. (1970h), International Civil Aviation in 1969 - A Special Report, ICAO Bulletin, 25:5, 15-50.

---. (1971h), Civil Aviation in 1970 - A Review of Significant Developments in Air Transport During the Last Year, ICAO Bulletin, 26:5, 13-47.

---. (1972h), The ICAO Annual Report: International Civil Aviation - 1971, ICAO Bulletin, 27:5, 17-53.

---. (1973h), International Civil Aviation in 1972, ICAO Bulletin, 28:5, 23-62.

---. (1974h), ICAO Annual Report - International Civil Aviation 1973, ICAO Bulletin, 29:5, 19-58.

---. (1975h), ICAO Annual Report - International Civil Aviation 1974, ICAO Bulletin, 30:6, 15-57.

---. (1976h), The ICAO Annual Report - International Civil Aviation 1975, ICAO Bulletin, 31:5, 19-59.

---. (1977h), ICAO Annual Report - International Civil Aviation 1976, ICAO Bulletin, 32:6, 15-57.

---. (1978h), International Civil Aviation, the ICAO Annual Report, 1977, ICAO Bulletin, 33:5, 23-67.

---. (1979h), Annual Report: International Civil Aviation - 1978, ICAO Bulletin, 34:6, 23-69.

---. (1980h), Annual Report: International Civil Aviation - 1979, ICAO Bulletin, 35:6, 21-68.

---. (1981h), Annual Report: International Civil Aviation - 1980, ICAO Bulletin, 36:6, 21-6 .

---. (1983h), Annual Report: International Civil Aviation - 1982, ICAO Bulletin, 38:7, 21-67.

---. (1984h), Annual Report: International Civil Aviation, ICAO Bulletin, 39:7, 13-61.

---. (1985h), Annual Report: Internation Civil Aviation, 1984, ICAO Bulletin, 40:7, 19-65.

---. (1987h), Special Report: International Civil Aviation - 1986, ICAO Bulletin, 42:7, 25-74.

International Conference of Tourism and Air Transport (1978), World Tourism Organization and IATA.

Kahn, A. E. (1978), The Changing Environment of International Air Commerce, Air Law, 3:3, 163-174.

Kamp, J. (1976), Air Charter Regulation, A Legal, Economic and Consumer study, New York: Praeger.

Kelly, C. J. (1963), The Sky's the Limit, the history of airlines, New York: Coward-McCann.

Keith, R. (1972), Bush Pilot with a Brief Case, The Happy-Go-Lucky Story or Grant McConachie, Toronto: Doubleday Canada; New York: Doubleday.

Keyes, L. S. (1964), The Making of International Air Fares and the Prospects for Their Control, Journal of Air Law and Commerce, 30, 173-192.

---. (1973), The Transatlantic Charter Policy of the United States, Journal of Air Law and Commerce, 39, 215-248.

Krenz, G. and Hilbig, R. (1982), Aerodynamic Concepts for Fuel Efficient Transport Aircraft, ICAS Proceedings, 800-811.

Lazar F. (1984), Deregulation of the Canadian Airline Industry: A Charade, Canada, Porter Books.

Leacy, F. H. ed. (1983), Historical Statistics of Canada, second edition.

Littlejohn, R. (1964), Air Transport Review - seeking long-term remedies for Canadian carriers' ills, Canadian Aviation, 37:6, 18-20, 41.

Lowenfeld, A. F. (1981), Aviation Law: cases and materials|, 2nd edition, New York; M. Bender.

Lowenfeld, A. F. and Mendelson, A.I. (1978), Economics, Politics, and Law: Recent Developments in the World of International Air Charter, Journal of Air Law and Commerce, 44, 479-508.

Lowenheim, F. L. and Langley, H. D. (1975), Roosevelt and Churchill: Their Secret Wartime Correspondence, Saturday Review Press.

MacDonald, I. S. (1982), New Technologies for the Next Generation of Commercial Transports - Real or Imaginary, Congress on the International Council of the Aeronautical Sciences Proceedings, vol. 1 and 2, 1310-1320.

McGill Centre for Research of Law and Space Law (1980), Legal, Economic, and Socio-Political Implications of Canadian Air Transport.

McGregor, G. R. (1980), Adolescence of an Airline, Montreal: Air Canada.

Main, J. R. K. (1967), Voyageurs of the Air, Ottawa: Queens Printer.

Marx, F. (1981), Non-scheduled air services: A survey on North Atlantic routes, Air Law, 6:3, 130-152.

Mutti, J.and Murai, Y. (1977), Airline Travel on the North Atlantic, Is Profitablity Possible? Journal of Air Transport Economics and Policy, 11:1, 45-53.

O'Connor, W.E. (1971), Economic Regulation of the World's Airlines, A Political Analysis, New York, Washington: Praeger Publishers.

---. (1978), An Introduction to Airline Economics, New York: Praeger Publishers, 1978.

Official Airline Guide, Worldwide Edition, Oak Brook, Illinois: Reuben H. Donnelley, (various issues).

Roy, R. and Cofsky, D. (1984), A Productivity Study of Canadian Air Carriers, Canadian Transport Commission, Research Branch Economic and Social Research Directorate, Report No. 1984/04E.

Saarty, D. A. D. (1969), Future of the Air Charter Market?, Papers - Tenth Annual Meeting Transportation Research Form, 289-302.

Sampson, A. (1984), Empires of the Sky, The Politics, Contests and Cartels of World Airlines, New York: Random House.

Scherer, F. M. (1980), Industrial Market Structure and Economic Performance, Second Edition, Chicago: Rand Mc.Nally Publishing Company.

Schumpeter, J. A. (1934), The Theory of Economic Development, Cambridge, Mass.: Harvard University Press.

Smith, H. L. (1950), Airways Abroad, the story of American world air routes, Madison: University of Wisconsin Press.

Smith, P. (1986), It Seems Like Only Yesterday, Toronto: McClelland and Stewart.

Smith, A. B. and Toms, J. N. (1978), Factors Affecting Demand for International Travel to and from Australia Canberra: Australian Government Publishing Service.

Stevenson, G. (1987), The Politics of Canada's Airlines from Diefenbaker to Mulroney, Toronto, Buffalo, London: University of Toronto Press.

Straszheim, Mahlon R. (1969), The International Airline Industry, Washington, DC: The Brookings Institution.

---. (1978), Airline Demand Functions in the North Atlantic and their Pricing Implications, Journal of Transportation and Economic Policy. 2:12, 179-195.

Stroud, J. (1962), Annals of British and Commonwealth Air Transport, 1919-1960, London: Putman & Company Limited.

Taneja, N. K. (1978), Airline Traffic Forecasting, Lexington, Mass.: Lexington Books.

---. (1981), Airlines in Transition, Lexington, Toronto: Lexington Books.

---. (1980), U.S. International Aviation Policy, Lexington, Mass.: Lexington Books.

TCA (various years), Annual Report.

Tompkins, G. N. (1982), The North Atlantic - Competition or Confrontation, Air Law, 7:1, 48-63.

Transport Canada (February 1981), Economic Regulation and Competition in the Domestic Air Carrier Industry, discussion paper for the Interdepartment Committee on Competition and Regulation in Transportation, Ottawa.

Urquhart, C. ed. and Buckley, K. A. assist. ed. (1965), Historical Statistics of Canada, first edition Cambridge: University Press and Toronto: The Macmillan Co. of Canada.

Vondrachek (1969), North Atlantic vs. Transcontinental Air Transport Services: Cost Analysis, Unpublished MBA thesis, University of British Columbia.

Wardair (various years), Annual Report.

Wassenbergh, H. A. (1978), Innovation in International Air Transportation regulation (the U.S. - Netherland's agreement of 10 March 1978), Air Law, 3:3, 138-162.

---. (1981), Aviation Policy and a New International Legal Order, Air Law, 6:3, 169-179.

Watson, J. D. (1961), Air Transport - weighing up the way ahead, Canadian Aviation, 34:6, 14-15.

---. (1963), Air Transport Review - our problems will persist and maybe intensify unless . . . , Canadian Aviation, 34:6, 14-15.

Wheatcroft, S. (1956), The Economics of European Air Transport, Manchester: Manchester University Press.

---. (1964), Air Transport Policy London; M. Joseph.

Wheatcroft, S. and Lysman, G. (1987), Air Transport in a Competitive European Market, Report no. 3, The Economist Intelligence Unit, Canadian Institute for STI, NRCC.

Wiktor, C. L. (1982), Canadian Treaty Calender 1928-1978, London, Rome, New York: Oceana Publications Inc. 1982.

Wittington, H. (1987), Battle for Billions, Canadian Aviation, 1987 May, 32-36.