**RECENT STATE PROMOTION OF THE CANADIAN AIRCRAFT INDUSTRY :
A CASE OF REACTIVE OR ANTICIPATORY PUBLIC POLICY ?**

by

Wayne E. Saunders, B.A. (Spec.)

A thesis submitted to the Faculty of
Graduate Studies and Research in partial fulfillment
of the requirements for the degree of
Master of Arts
in Canadian Studies

Carleton University

Ottawa, Ontario

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submitted by Wayne Saunders, B.A.

**in partial fulfillment of the requirements for
the degree of Master of Arts**

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ABSTRACT

The aircraft industry is considered to be important to leading and emerging industrial economies. This thesis explores public policy promoting the Canadian aircraft industry over the last four decades. While aspects of the industry have been investigated, a gap in academic analysis exists. No comprehensive examination of state involvement in the industry over this period has taken place. Without this perspective, it is difficult to know if the right steps are being taken to support it.

This thesis builds on Letovsky's examination of the Quebec sector and uses Atkinson and Coleman's concepts of anticipatory and reactive policy. It argues that Canadian state policy supporting the industry has been reactive. The state lacks a strategic policy for the industry other than "support at any cost." This suggests that the state has not followed the most advantageous approach for supporting the industry, as part of its efforts to develop the Canadian economy.

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CHAPTER 1

INTRODUCTION

Government economic plans that have a dramatic impact on the very structure of our economy are seldom the result of a comprehensive formal analysis of a problem. They usually evolve in response to dynamic pressures. The difficulty with policies that emerge from crisis situations is that they may produce more problems than they solve. This type of ad hoc approach to policy-making cannot produce as productive an economy as can a well formulated long-run strategy.¹

Fred Lazar, *Canadian Annual Review ... 1973*

Approach

This thesis explores public policy promoting the development of the Canadian aircraft industry over the last four decades.² While aspects of the industry have been investigated, a gap in academic analysis exists. The study of state involvement in the Canadian aircraft manufacturing industry³ over the entire period is incomplete. Without this perspective, it is difficult to know if the right steps are being taken to support it.

To explore this question, we lay out a theoretical framework for examining Canadian industrial policy. We first explore the range of models available to the public policy analyst and

describe their strengths and weaknesses. The study is based on the work of Atkinson and Coleman, as described in their comprehensive analysis of Canadian industrial policy, *The State, Business, and Industrial Change in Canada*. This work provides a useful way to examine the problem, particularly its exploration of the concepts of reactive and anticipatory policy. These are important ideas, since this thesis also builds on the work done by Letovsky, who used them in his dissertation, "Public Policy and the Quebec Aerospace Sector."

We investigate two key stages in the evolution of the Canadian aerospace industry between 1965 and today. The first stage covers the period from 1965 to 1984. It includes the Trudeau Liberal government's rescue, from near disappearance, of Canada's two major aircraft manufacturing firms, Canadair Ltd. (hereinafter Canadair) and de Havilland Canada (hereinafter DHC). Both companies (now part of Bombardier Aerospace) were struggling to survive during an industry downturn. In a reactive move to save the two, the government chose to nationalize them. The period includes other controversies, such as the Challenger business jet debacle, which illustrate moves consistent with a reactive policy model.

Next, we examine the industry from 1984 to the present. The period begins with the Mulroney Conservative government's sale of Canadair and DHC. This can also be considered a reactive move, due largely to the rise of neo-conservative thinking. The period is characterized by privatization, globalization and a focus on international trade. We look at controversies such as the Chrétien Liberal's decision to terminate the Defence Industry Productivity Program (DIPP); the government's reaction to subsequent industry pressure, namely the creation of the Technology Partnerships Canada (TPC) program; and the debate over the marketing of regional jets, including the World Trade Organization's (WTO) judgement that elements of the TPC program were illegal. Each of these also fits the reactive model.

This thesis focuses primarily, but not exclusively, on Canada's two main airframe manufacturers, as well as related government-industry policy documents generated over the last four decades. It examines key events relating to Canadair and DHC, as well as moves by the state to support the Canadian industry in response to both crisis and non-crisis situations. Therefore, it provides a different viewpoint than the one Letovsky used in his analysis. He examined the Quebec aircraft industry to understand how public policy was affecting the sector. In particular, he studied whether recent policy contributed positively to inter-firm learning. He suggests these recent policy steps were anticipatory. However, this thesis examines state support from a different perspective. This allows a different conclusion to be reached, thus stimulating further debate. It provides a limited yet clear focus, and points to further areas of research.

The primary concern of this study will be to determine whether state industrial policy for this sector has been reactive or anticipatory. Atkinson and Coleman provide the theoretical framework of anticipatory and reactive policy that Letovsky uses. Their study of industrial policy explores the relationship between the state and the economy, providing case studies of four categories of industry. One of their arguments is that Canadian industry has a culture that is hostile to state intervention.⁴ They acknowledge that all governments follow a mix of anticipatory and reactive policies, but conclude that, across the spectrum, Canadian industrial policy has tended to be reactive rather than anticipatory.

Atkinson and Coleman state that "two major alternatives have emerged as ideal-types: anticipatory industrial policy with its emphasis on intrusive policy instruments that are integrated with one another and aimed at structural transformations; and reactive industrial policy, which is organized around the immediate needs of specific firms (often for distress financing) and is devoted to creating a climate attractive to investment."⁵

Reactive policy, in their view, is characterized by *ad hoc* measures applied when necessary, such as protectionism and intervention, and driven by market considerations including market failure. This type of policy approach is usually applied to specific firms. Anticipatory policy, alternatively, follows a more structured development of a whole sector. It is a more "comprehensive approach in which all firms and all sectors are evaluated against a set of criteria engineered at the political/bureaucratic center."⁶ Simply put, reactive policy implies little state planning and short-term action based on a crisis situation. Anticipatory policy involves bureaucratic planning over the longer term. The authors imply that anticipatory policy is preferable, yet conclude that "Canadian industrial policy corresponds almost entirely to the reactive model."⁷ The question is whether or not this observation holds true for the aerospace industry, which they did not study.

Analysis of the aerospace industry is important, for Canada as well as for other countries,⁸ because it is viewed as a strategic, high technology industry. However, Canada's industry is beneficial not solely for its contribution to science and technology. The sector employs 85,000 people.⁹ Sales total \$23 billion, nearly 80% of which are exports.¹⁰ During the period examined in this study, the industry recovered from a serious downturn,¹¹ and its two largest manufacturing concerns were nearly shut down. It subsequently recovered to become the 4th largest in the world.¹² Truitt notes that "Canada is strongly attracted to ... high technology and high value added industries such [as] aerospace" to boost international exports.¹³

Since the industry is important for these reasons, state nurturing of the sector is not surprising. However, the state is faced with an interesting dilemma that creates tension between competing views on intervention. Hayward describes this as a classic independence-control dichotomy whereby the state needs to "find the optimum balance between control and

independence", in other words between state policies and the authority of private industry.¹⁴ A key part of this dichotomy is whether the state should be involved in developing anticipatory policy.

Before going further, it is useful to clarify the concept of state as used in this thesis. Atkinson and Coleman suggest that "Canadians see the state as essentially a complex set of institutions delivering a bundle of services [and] key features ... are its federal structure and parliamentary form."¹⁵ Confusion, of course, results from common and multiple uses of the word government to describe this complex group that develops policy. Moreover, there are a vast number of individuals within these institutions who play a role in developing policy.

Therefore, this thesis characterizes the state as including a range of public institutional and individual actors involved in the development of public policy: various federal governments of the day, including parliament and other related political organizations, such as the Cabinet and Privy Council Office as but two examples; the federal bureaucracy including the range of ministries, departments and organizations within it; powerful political individuals including, among others, Prime Ministers and individual Cabinet ministers; and provincial governments, including all or its related political and bureaucratic institutions.¹⁶

Some aspects of the Canadian aircraft industry have been studied and are discussed below. However, a gap in academic analysis exists. A general review of policy developed by these various actors over the last four decades has not been done. This material is important for us to understand, especially considering the fact that states, including the Canadian state, have "rejected traditional free trade theory and have attempted to "create" comparative advantage for their respective [aerospace] firms."¹⁷ Therefore, examining this material makes for an interesting exploration since understanding past issues will help provide better information on which future

policy decisions can be made. This will help the industry to continue to develop and grow, thus benefiting Canadian society and economy.

Letovsky's work is a comprehensive analysis of state policy that investigates both federal and provincial technology support programs designed to stimulate industry development in the Quebec sector. Many of these were instituted in the late 1980s and 1990s. He suggests anticipatory policy has been applied somewhat successfully and, hence, the state's role has been meaningful.¹⁸ His contention is that inter-firm relationships fostered by these anticipatory policies have contributed to the sector's growth. His suggestion is that, despite the "current ascendancy of the "sound finance" school of economics," such policy tools can benefit all high technology sectors.¹⁹ This is a valid conclusion that supports the value of innovative anticipatory policies.

However, through no fault of his study, Letovsky's work might lead some to arrive at the conclusion that the state is introducing enough of the right policies to ensure proper development of the industry in Canada. Other events over the last four decades suggest that, when examined from a different perspective, state policy can be seen to have been largely reactive. Three such examples have been the nationalization of specific firms, spending billions of dollars to save technology and jobs, and inconsistently applied involvement of state agencies to foster international sales, each of which will be discussed in detail in subsequent chapters.

The state and/or state-supported agencies have produced a variety of documents over the past four decades that are of particular interest for analyzing Canadian aircraft industry public policy and will contribute to this study. One important document is the 1970 Science Council study titled *Aeronautics – Highway to the Future* (the Green Report). The Council studied the industry to investigate ways of improving both long-range planning and research and

development. It advocated a more anticipatory style of state support to industry. Also of particular interest is the 1978 *Report by the Sector Task Force on the Canadian Aerospace Industry* (the Lowe Report). It illustrates that industry took a leading role in developing new directions for the sector, including suggesting the framework in which the state and industry could work together strategically. While the two parties worked together to create success, state public policy either reacted to, or often simply ignored, industry input. The 1983 study, *Aerospace in Canada – Outlook and Strategy* (the Lumley Report), demonstrates a similar pattern of the state being led by industry under the auspices of its independent lobbying organization, the Air Industries Association of Canada (AIAC, now the Aerospace Industries Association of Canada). Even the recent Industry Canada framework document supporting the TPC program cannot be described as entirely anticipatory, appearing to be largely a menu of technologies to be supported, rather than a strategy.

Certain academic studies examine specific aspects of the aircraft industry, but typically only as part of a larger study of policy or behaviour patterns. For example, Laux and Molot²⁰ describe state ownership and difficulties with the Challenger business jet program. Borins and Brown²¹ investigate state financial investment in both Canadair and DHC in their study of government enterprise. Stanbury²² also discusses the same firms in his larger study of privatization by the Mulroney government. While useful, these studies only examine the programs or firms in the context of a wider examination, and the focus is not on the aircraft industry *per se*.

Fortier's dissertation "Intervention gouvernementale et industrie aéronautique l'exemple canadien, 1920-1965" provides a mostly historical analysis of state intervention in the aircraft industry. While comprehensive, it only covers the period up to 1965 and follows a standard

historical treatment. However, it provides contextual background. It also helps illustrate that the policy environment during the period under study in this thesis is quite different.

Other recent studies of government policy and the industry also tend to be limited. MacDonald's examination of DIPP²³ provides a good overview of the program and its effect on the aircraft industry. His economic evaluation of the program during the 1980s and early 1990s shows that the program had a limited financial return. This is revealing, since it demonstrates that the state's interest in the program was less about its ability to make money through investment and more related to creating jobs and providing funds to help research and development. He points out that DIPP was clearly a policy tool aimed at cooperative defence industrial work, not solely a tool aimed specifically at the aircraft industry. Bustillo²⁴ provides a top-level examination of moves by firms in various sub-sectors of the industry in the recent past, but avoids any discussion of state impact or policy. Finally, Teraraho's analysis²⁵ argues the case for relying on the market to drive the future evolution of the industry. The possibility of state participation is essentially dismissed.

Popular or commercial works in the area are primarily historical and tend to be related to specific aircraft types, although recently there has been some examination of the major aircraft manufacturing firms.²⁶ The weakness of these volumes is they tend to be sponsored by, or done in collaboration with, a company. They are comprehensive and informative but not oriented to a critical examination of public policy in the sector.

What has been lacking, therefore, is an overall examination of public policy relating to the aircraft industry in Canada covering the last four decades. This study, therefore, is an attempt to do this and fill the gap in our understanding.

Definition of the Aircraft Industry

Before proceeding further, it is important to explore and clarify terminology. Different sources use a variety of terms to describe the sector being studied in this document. For example, the terms aerospace industry and aircraft industry tend to be used synonymously. Letovsky points out that this causes some confusion. Even more confusion results with reference to the term aeronautics industry, which is based on a U.S. government definition used by the General Accounting Office.²⁷

Industry Canada defines the term aircraft industry as:

those establishments classified by Statistics Canada into Standard Industrial Classification (SIC) 3211, the Aircraft and Aircraft Parts Industry. As such, the industry includes establishments primarily engaged in manufacturing aircraft and aircraft assemblies, engines, equipment and parts, as well as establishments primarily engaged in the repair of aircraft and aircraft engines and parts.²⁸

This classification includes companies involved in manufacturing airframes, aircraft assemblies, engines, pontoons and propellers, as well as related parts and repair services. However, it does not include parts used on aircraft, such as navigation equipment, electronic equipment, aeronautical instruments, nor the servicing or maintenance of aircraft being used by air transport companies. Bluestone, Jordan and Sullivan describe the U.S. aircraft industry in a way consistent with the SIC 3211 definition.²⁹ However, other Canadian government or industry agencies use a variety of terms, including the aeronautics industry, the aerospace industry or the aerospace manufacturing industry, in the documents examined in this thesis.³⁰

Letovsky notes that the term aerospace industry is used widely and implies "firms engaged in the "aircraft industry", as well as firms who produce space- and missile-related items, together with firms offering equipment related to the production, operation and maintenance of

aircraft.”³¹ However he prefers to use the cleaner term “aircraft industry”, which focuses on what he sees as firms that build aircraft or provide parts or services related to it but excludes space and missile systems.

This thesis will also use the term aircraft industry to ensure consistency with Letovsky. This makes sense since the cases examined in this study relate largely to the two main airframe manufacturing companies in the country, Canadair and DHC, or to other airframe builders. Some of the documents to be examined, such as the Green, Lowe and Lumley Reports, cover materials that, strictly defined, are not part of the aircraft industry. However, the implications are small since they are, in large part, examining issues related to the aircraft industry. Use of the term aircraft industry is also consistent with the terminology used in the Agreement on Trade in Civil Aircraft, part of the General Agreement on Tariffs and Trade (GATT), which refers to civil aircraft, engines, components, parts and sub-assemblies of aircraft and related ground flight simulators.³²

Comparative Examples

One other area of background information worth considering before entering into a study of the Canadian aircraft industry sector is the situation in other countries.³³ It is important to understand how the state in these other countries supports its indigenous aircraft industry. Generally, the state always plays a role and has some form of industrial policy. These policies range from indirect to direct support, and are often quite intrusive. Examination of what steps these countries follow also aids in our understanding of the various steps the Canadian government has taken over the past four decades in response to internal forces and crises in the

Canadian aircraft industry. This helps us discern whether state support in this country more closely follows the reactive or anticipatory model. Additionally, understanding what other countries have done helps us understand what steps can be taken to develop a policy that corresponds more closely to the anticipatory model. Understanding these perspectives contributes to our understanding of what policy directions might be followed to enhance state support in this country.

Particularly important is the experience of two dominant players in the global market, the United States and Britain. The U.S. example is interesting since its government has a long history of providing direct and indirect support to its industry. In fact, calls for greater support from the state have been growing in that country over the last few years. As well, it is important to look at the grouping of newly industrialized countries (NICs) that have selected the aircraft industry as being of strategic interest in developing an advanced economy. In these countries, the state plays a significant role in supporting the strategic development of their aircraft industry. State support tends to be extensive, being based on both direct and indirect methods conforming to a more intrusive form of anticipatory policy.

United States

The aircraft industry has been, and remains to this day, important to the U.S. For example, in 1968 (around the time this study begins) aircraft sales were valued at over \$22 billion.³⁴ By the 1990s, this figure had reached over \$75 billion and ranked sixth overall in total sales among all U.S. industries.³⁵

In fact, many analysts agree that the industry is far more important to the country than what the economic figures indicate. Pattillo suggests that it a “national resource, not only for its production capability but also as a storehouse of technological and scientific skills.”³⁶ Bluestone, Jordan and Sullivan note that it is important as a major contributor to the U.S. trade balance, often being in the number one position.³⁷ Steckler adds that it is vitally important for job creation and the value-added impact of its products.³⁸ Yet, perhaps Seitz describes the situation best, stating the industry “holds a unique position in the nation’s industrial structure – in its contribution to trade, its coupling with national security, and its symbolism of U.S. technological strength.”³⁹

The U.S. industry dominates globally for a number of reasons. Seitz argues this was due to factors such as a strong manufacturing base built up during the Second World War, coupled with a productive relationship between the government and industry, size and diversity, aggressive technology development and the impact of geography on the air transport industry.⁴⁰ Bluestone, Jordan and Sullivan add that this global success resulted largely from the industry having a very strong domestic base with the armed forces and large air transport firms providing significant sales opportunities. They note that the government always played an important role in the industry. Not only is it the effective purchaser of military aircraft, but it has tremendous influence on commercial sales as well. They state that “the sale of commercial jets to foreign airlines is tied inextricably to political decisions.” In fact, they characterize the U.S. industry as largely a monopsony – an industry with only one primary customer.⁴¹

Despite the fact that the U.S. aircraft industry is dominant worldwide, this does not mean that it has not been subject to both military and civil aircraft market volatility. There was a sharp downturn in defence purchases in the aftermath of the Viet Nam war, a negative trend that also

affected the Canadian industry. Bluestone, Jordan and Sullivan suggest the decline at this time was due to the combined effect on the commercial and defence markets arising from anti-war sentiment, environmentalists battling against supersonic technology for civil airliners, and a rise in international competition.⁴² Seitz argues the decline was due to “the impact of deregulation on domestic air transport, the emergence of foreign competition, internationalization of aircraft manufacture, and growing involvement of foreign governments in the industry.”⁴³

International competitive forces challenged the U.S. industry significantly, since the country relied on such a strong domestic base. Bilstein notes that this allowed firms to remain competitive since U.S. airlines and the government were major purchasers. International sales were secondary.⁴⁴ But internationalization forced change during the late 1970s and throughout the 1980s. Pattillo adds that, in the commercial sector, collaboration within the European industry created a situation where there was “effective competition for the American industry for the first time.” There was also the impact of such non-market forces as the need to use locally manufactured components, job creation, technology transfer and balance of payment issues to consider during the sales process.⁴⁵ Seitz adds that another factor forcing the industry to change was new GATT rules.⁴⁶ Further stress on the industry came as a result of the end of the Cold War. A U.S. National Academy report stated that, by the early 1990s, “leadership [was] being challenged as U.S. aircraft primes and a broad range of suppliers face[d] depressed commercial markets, cuts in defense spending, and intense international competition.”⁴⁷ Pattillo adds that deficit reduction efforts by the government contributed to a situation where the industry was once again struggling.⁴⁸

Throughout both strong periods and declines, however, the influence of the government on the U.S. industry was of vital importance. Bluestone, Jordan and Sullivan conclude that the

aircraft industry would not exist without state support, since it financed plant construction, purchased equipment and provided working capital.⁴⁹ Both Bilstein and Steckler note that state procurement has been significant.⁵⁰ Each of these authors is pointing out that government support was, and remains, critical. Pattillo concludes more forcefully that the U.S. government “never adopted a formal industrial policy [for the sector], and such a policy was strongly opposed by doctrinaire free enterprise advocates. Yet defence policy, for which technology and hardware were provided by the private sector, constituted a de facto industrial policy.”⁵¹

This evidence indicates that the U.S. industry, while strongly oriented to the free market, still benefits immensely from government support, largely based on an unwritten industrial policy that provides both direct and indirect support. This has been a consistent pattern over time and continues into the modern period. During the stressful 1990s, the U.S. National Academy report concluded that success could only continue to be achieved if industry and government worked together to change strategic direction. In fact, they argued for strong state action, highlighting that “government-industry partnering in the development and implementation of a long-term strategy is essential. While the major responsibility lies with the U.S. aircraft industry itself, the government must do more to create a favourable overall environment. Currently, neither a coherent policy nor the needed institutional mechanisms exist.”⁵²

The argument for greater support from the U.S. government continues to grow. The *Final Report of the Commission on the Future of the United States Aerospace Industry*, released in November 2002, concludes the country needs a new national aerospace policy supported by “a government-wide framework that implements this policy.” The recommendations include, among many others, that the government help foster public-private partnerships between itself,

industry, labour and academia; streamline government processes; develop a coordinating council within the White House; and foster defence sales abroad.⁵³ The report is a call for further action of an anticipatory type.

United Kingdom

While the U.S. example of government support to the aircraft industry might be referred to as a covert policy, the same cannot be said for the U.K. Hayward's study, despite being somewhat dated, still provides a useful look at the character of the industry-state relationship in Britain. It is a useful example to explore since it has, like the U.S. case, long historical roots and remains among the top rankings in sales worldwide.⁵⁴

Collaboration between the state and industry has been a consistent theme in the U.K. since the First World War. In fact, Hayward argues that the relationship between the two was so strong that industry came to be overly dependent on the government.⁵⁵ Due to a downturn in the industry following the Second World War, the situation was marked by a deliberate policy to help industry recover. For example, he notes that, even when later governments attempted to facilitate more private investment and firm-led initiatives, "aid was still provided for some advanced projects and a 'buy British' doctrine was maintained as a basis for public sector procurement."⁵⁶ As is the case in the U.S., the industry in Britain benefits from defence procurement, with profits from those programs often being used to finance civil aircraft development.

Up to the late 1960s, the connection between the state and the industry grew constantly, particularly with regards to civil aircraft development for international markets. Public funding

of new projects grew from 10 per cent to 75 per cent⁵⁷, state-owned airlines were mandated to buy from domestic industry, and government-run labs performed R&D for the industry. Perhaps the most notable event of the period was the cooperative venture program between the U.K. and French governments to develop the supersonic commercial jetliner Concorde. British industry participation in the program, which eventually proved to be a technological wonder but a commercial failure, received massive state support in the range of £800-2000 million.⁵⁸

Despite all this direct and indirect support, the U.K. industry was also not immune to downturns in the market.⁵⁹ The industry, the state and the general public became acutely aware of this in the early 1970s, just as the U.S. industry did, with the bankruptcy of leading aircraft engine manufacturer Rolls Royce.⁶⁰ Hayward argues that tension between both the state and industry at this time increased significantly, due to conflicts over funding, aircraft project decisions and strategic direction.⁶¹ Moreover, public criticism over “the extravagance with which public money ha[d] been invested ... weak control exercised over costs .. and the absence of an immediately evident return to the economy” led to calls for public ownership.⁶²

The first step in this process was the nationalization of Rolls Royce “in the national interest.”⁶³ This happened despite the fact that the Conservative government of the time was typically stepping away from direct involvement in industry in general. It considered the aircraft industry to be a special case. The problem was that, even as the government reacted by stepping in to save the engine manufacturer, it was still “groping towards a policy for civil development, based on a mixture of domestic and international projects.”⁶⁴ The industry was up against the same international forces that posed a challenge to the U.S. industry. However, their answer was different. The government nationalized the whole industry into one entity, became involved in determining which aircraft programs would be completed, cancelled or shelved, and attempted to

determine an overall strategy for the sector.⁶⁵ Public ownership continued until the Thatcher Conservative government came to power and privatized the consolidated aircraft manufacturing firm British Aerospace (BAe) in 1981.⁶⁶

Hayward's analysis demonstrates that the linkage between the aircraft industry and the state in the U.K. has been historically strong. He argues that "the British aerospace industry as a whole has depended on Government," with the state becoming involved in areas right down to the "minutiae of design, development and production."⁶⁷ As well, he adds that the state remains directly or indirectly involved despite whether the industry is owned by public or private interests since strong institutional links between the two exist.⁶⁸

The U.K. case is particularly interesting not only because state involvement has been so obvious. It is also useful to see that the government, despite not having a clearly stated policy, has a history of reacting to crisis situations to support its aircraft industry for reasons beyond commercial purposes. As Hayward summarizes:

[i]t has become very clear that the reasons why successive Governments have supported [the aircraft industry] go well beyond the application of simple commercial criteria ... Indeed, the rationale for assisting ... has been consistent with the thesis that Governments can and should intervene ... to promote broader economic and social values ... which, for structural or behavioural reasons, the market has failed to attain.⁶⁹

Newly Industrialized Countries

The U.S. and U.K. are just two of the advanced industrial countries that, along with the former U.S.S.R. (now Russia and former allied nations), dominated the world's aircraft industry in the post-Second World War period. However, as Todd, Simpson and Humble argue, the period from the 1960s until the 1980s marked the emergence of indigenous aircraft industries by

many newly industrialized countries (NICs) in response to economic domination by the advanced nations and the rise in Japanese competitive success based on technological innovation.⁷⁰ These emerging nations aimed to build upon their resource-based economies. One of the ways for the governments of these countries to accomplish this was to diversify into high technology industrial sectors, including the aircraft industry.

The model that most of the NICs adopted was that applied successfully by the Japanese. In fact, many of the emerging countries could rely on a similar experience. They all had some experience with an existing, but modest, aircraft industry that “relied mostly on licensed production and co-production agreements based on some technology transfer” or on emerging design capacity. Countries such as China and Taiwan are among those that made significant defence expenditures on large numbers of military aircraft. Indonesia and Brazil explored expansion largely along the commercial aircraft path.

Additionally, the government in each of these countries are strongly interventionist or only too happy to implement solutions similar to the Japanese. A U.S. National Research Council (U.S. NRC) report describes the Japanese model as one in which the government has largely been involved in the industry in that country by providing direct and indirect financial assistance, particularly through the state bureaucracy known as the Ministry of International Trade and Industry (MITI). The government also encouraged R&D, international projects and support from their defence research institute.⁷¹

This model of industrial development, therefore, was one “backed by financially strong and committed governments”⁷² using a coordinated plan of action to achieve success. At the root of it was a targeting of specific sectors as an instrument for development, and aerospace was

chosen as one path since it is based on “technology intensive design and production ways and means”, drives innovation, and is seen as helping attain a positive trade balance.⁷³

Although the aircraft industries of the advanced industrial nations remain the leaders in sales and technology development worldwide today, the impact of the emerging countries can be seen as a real threat. In fact, the U.S. NRC perceived the situation to be significant enough to argue that the U.S. industry had to adapt by developing a strong strategy supported by greater state involvement. Their report emphasized that conditions were such that “leadership in global competition will increasingly go to the firms emphasizing high-quality, low-cost manufacturing”, which the Japanese and other NICs have tended to emphasize.⁷⁴

The emergence of the Brazilian industry is one that is particularly relevant to this study. The industry began in the 1960s as a goal of national policy, with the twin goals of “domestic production of aircraft in order to gain technical capabilities and ... to realize foreign exchange through saving in imports ... and genuine export earnings.”⁷⁵ What this means is that the country first built military and civil aircraft for its own closed market, and then began to export products at an increasing rate over time. The growth in sales of small, propeller-driven commercial aircraft into the U.S. market was enough of a threat to U.S. manufacturers that the American government tried to stop imports “on the grounds that [they were] excessively financed by state coffers and, therefore, [were] competing unfairly.”⁷⁶ The U.S. lost the court challenge. Subsequently, the Brazilian industry went on to produce small jet-driven commercial aircraft that compete today with Canadian-built regional jets. This battle has also been subject to an international trade conflict.

It is clear from these examples that all states support their aircraft industry. One variant of this support is exemplified by the U.K. example, which corresponds highly to the reactive model. Alternatively, state policy may correspond more closely to variants of an anticipatory policy model, ranging from the highly intrusive examples demonstrated by the NICs, to a more supportive type characterized by the U.S. framework policy approach.

This thesis argues that the Canadian example demonstrates a pattern more consistent with the U.K. example. It suggests, therefore, that the Canadian state needs to consider new alternative approaches to policy making to overcome the tendency to support the industry at any cost. Instead, new and innovative policy approaches are needed. As de la Mothe, Dufour and Lipsey suggest, this includes policies that foster comparative advantage and that lead to the creation of institutions that help drive economic growth.⁷⁷ This is consistent with the suggestions contained in the recent U.S. aerospace industry policy document discussed earlier, including building consensus and establishing institutional structures to coordinate the efforts of all actors involved.

NOTES TO CHAPTER 1

¹ Fred Lazar, "The National Economy: Industrial Strategy," in *Canadian Annual Review of Politics and Public Affairs 1973*, ed. John Saywell (Toronto and Buffalo: University of Toronto Press, 1974), 330-331.

² The material studied in this thesis is that which relates only to the aircraft manufacturing sector specifically. To limit the extent of the study, we have consciously chosen not to include certain framework policy related to the broad area of science and technology (S&T) and which has an impact on all S&T activity including the aircraft industry. This is not to suggest that these policy initiatives are not important to the way we think about S&T, the new knowledge economy and the concept of comparative advantage. They are all oriented to the strategic approach to economic development. There are many sources which cover this material, but for an sample see the following:

- Ministry of State for Science and Technology. *Innovaction: The Canadian Strategy for Science and Technology*. Ottawa: [Ministry of State for Science and Technology], 1987.. This report outlined a "practical coherent federal agenda for innovative action" in an effort to promote science and technology in Canada. Five key areas of focus were emphasized including the enhancement of government-university cooperation; building Canada's industrial base; improving government management procedures; supply skilled human resources; and increasing public awareness of the importance of S&T.
- Alan M. Rugman and Joseph R. D'Cruz, *New Visions for Canadian Business: Strategies for Competing in the Global Economy*, Commissioned by Kodak Canada Inc. (Toronto: Kodak Canada Inc., 1990). See Chapter 4 (page 35) in particular, where the author's discuss the debate over approaches to industrial policy in Canada. Also see Chapter 5 (page 46) where the author's recommend a restricted role for the state but one where "policies [are] designed for the *long-term*, not for the next election." This author's italic emphasis.
- Richard E. Caves, Michael E. Porter, A. Michael Spence, with John T. Scott, *Competition in the Open Economy: A Model Applied to Canada* (Cambridge, MA, and London, 1980). This is a detailed study of the manufacturing sector of the Canadian economy, in particular on how industrial firms are organized and perform in a small, open economy.
- Michael E. Porter *Canada at the Crossroads: The Reality of a New Competitive Environment*, A Study Prepared for the Business Council on National Issues and the Government of Canada (Ottawa: Business Council on National Issues and Minister of Supply and Services, 1991). Porter notes the importance of the aircraft and aircraft parts industry to Canada. He ranks it among this country's innovation-driven industries. See page 20. Porter also notes the importance of a re-defined relationship between business and the state. Overall, he suggests that the state has a key role to play to improve Canadian industrial competitiveness and also that business must improve the way it works with government. See page 83 and 85-88 in particular.
- Michael E. Porter, *The Competitive Advantage of Nations* (New York: The Free Press, a Division of Macmillan, Inc., 1990). An in-depth study of the ideas behind national competitive advantage. The author suggests four broad attributes that help shape industrial success and these taken together in a system "create the context in which a nation's firms are born and compete." He argues that success will improve when this system is balanced optimally. See pages 71-73 in particular. Porter asserts that the state has a role to play stating "Government has an important

influence on national competitive advantage” including in the development of public policy that affects the four determinants of advantage. See pages 126-128 in particular.

³ This thesis is limited specifically to the aircraft manufacturing industry, particularly the large aircraft manufacturing firms. We have purposely not covered aircraft engine manufacturers or specific aspects related to second- and third-tier firms in the sector. Additionally, this thesis does not consider the space industry as part of what is being discussed herein. However, for those interested in this subject, and discussion of government support for it, see Ron Freedman and Jeffrey Crelinsten, “Canada in Space,” in *Science and Technology in Canada*, ed. Paul Dufour and John de la Mothe (Harlow, Essex, U.K.: Longman Group UK Limited, 1993), 181-209.

⁴ Michael M. Atkinson and William D. Coleman, *The State, Business, and Industrial Change in Canada*, The State and Economic Life Series (Toronto, Buffalo, and London: University of Toronto Press, 1989), 8.

⁵ Atkinson and Coleman, 23.

⁶ Atkinson and Coleman, 25.

⁷ Atkinson and Coleman, 30.

⁸ For example see Keith Hayward, *Government and British Civil Aerospace: A Case Study in Post-War Technology Policy* (Manchester: Manchester University Press, 1983). Hayward gives various reasons why the U.K. supports its industry; however, the rationalization for support is similar in most countries.

⁹ The 85,000 figure is an official estimate by the Aerospace Industries Association of Canada for 2002. The last available year for which firm data is available is 2001, when there were 84,000 employees in the sector. This was down from over 90,000 in 2000. In light of events affecting the industry at the time of this study, including downsizing at Bombardier Aerospace, the actual total for 2003 may well be somewhat lower than 85,000 figure. Aerospace Industries Association of Canada, “Canadian Aerospace Industry Performance – 2001;” available at www.aiac.ca/sitesearch/industry/industryfacts_figures.html; accessed 22 April 2003.

¹⁰ For further details see Aerospace Industries Association of Canada, “Canada’s Aerospace Industry;” available at www.aiac.ca/sitesearch/industry/Subsectorindex.html; accessed 22 April 2003.

¹¹ The downturn in the aircraft manufacturing industry covered the period roughly from the cancellation of the Avro Arrow program in 1959 until 1974. However, employment levels in the industry overall declined by over 400 jobs per year between 1952 and 1974. Of particular interest to this study is the fact that the “Canadian airframe primes (Canadair and de Havilland) were not well-positioned to weather the downturn associated with the global recession of the early 1970s. Employment at Canadair fell from 10,000 in 1968 to approximately 1,000 by 1974. Real GDP for the sector fell by “an average annual rate of 0.64%.” See Industry Canada, Aerospace and Automotive Branch, *Sector Competitiveness Frameworks – Aircraft Industry (Background Analysis)* (Ottawa: Industry Canada, 1995), Section 4, Part A – An Historical Perspective, 1-5; available at <http://strategis.ic.gc.ca/SSG/ad03632e.html>; accessed 11 October 2002. Also see Department of Industry, Trade and Commerce, *Canadian Aerospace*

Manufacturing Industry, Sector Profile, Discussion Paper (Ottawa: Department of Industry, Trade and Commerce, 1978), 22, for a graphic illustration of the decline, particularly between 1967 and 1972. Employment levels fell from 48,000 to under 30,000 in five years. Production value declined from over \$1.3 billion to \$800 million between 1967 and 1975.

¹² Aerospace Industries Association of Canada, "Canadian Aerospace Industry Performance – 2001."

¹³ J. Frederick Truitt, "Emerging Sources of Competition in the International Commercial Aircraft Manufacturing Industry: Canada and Some Questions of Corporate Strategy and Industrial Policy", draft dated August 1, 1984 (Seattle: University of Washington, Graduate School of Business Administration, 1984), 28-29.

¹⁴ Hayward, 8-9.

¹⁵ Atkinson and Coleman, 56.

¹⁶ This characterization helps us in two main ways. First, it remains consistent with Atkinson & Coleman's definition referred to in the previous note. It also remains consistent with theoretical models of policy analysis which consider coherent groups as 'individuals' and individual actors as an entity or organization. See the description of the 'Rational Model' in Chapter 2 of this study for example.

¹⁷ Robert Letovsky, "Public Policy and the Quebec Aerospace Sector," Ph.D. dissertation (Concordia University, 1999), 13.

¹⁸ Letovsky, 181.

¹⁹ Letovsky, 14.

²⁰ Jeanne Kirk Laux and Maureen Appel Molot, *State Capitalism: Public Enterprise in Canada* (Ithaca, NY and London: Cornell University Press, 1988), 88-94 in particular.

²¹ Sanford F. Borins and Lee Brown, *Investments in Failure: Five Government Enterprises That Cost the Canadian Taxpayer Billions* (Toronto: Methuen, 1986), 17-18, 53-66, and 123-127 in particular.

²² William T. Stanbury, "Privatization and the Mulroney Government, 1984-1988," in *Canada Under Mulroney: An End-of-Term Report*, ed. Andrew B. Gollner and Daniel Salée (Montreal: Véhicule Press, 1988), 119-157.

²³ Bob MacDonald, "The Canadian Aerospace Industry and the Impact of Federal Assistance," Executive MBA research report (Concordia University, 1988).

²⁴ Ignacio Bustillo, "A Strategic Analysis of the Canadian Aerospace Industry," MBA research paper, Faculty of Commerce and Administration (Concordia University, 1993).

²⁵ Maximilien N. Tereraho, “Étude exploratoire de l’émergence du marché comme mode d’organisation dans l’entreprise privatisée: l’expérience de Canadair,” Ph.D. dissertation (Université du Québec à Montréal, 1997).

²⁶ Three examples are of particular interest. The history of Canadair is covered in Ron Pickler and Larry Milberry, *Canadair: The First Fifty Years* (Toronto: CANAV Books, 1995). Two histories have been devoted to de Havilland Canada. See Fred W. Hotson, *The de Havilland Canada Story* (Toronto: CANAV Books, 1983) and Fred W. Hotson, *de Havilland in Canada* (Toronto: CANAV Books, 1999).

²⁷ Letovsky, 62.

²⁸ Industry Canada, Aerospace and Automotive Branch, *Sector Competitiveness Frameworks – Aircraft Industry (Background Analysis)* (Ottawa: Industry Canada, 1995), Section 1, Part A – Industry Definition, 1; available at <http://strategis.ic.gc.ca/SSG/ad03632e.html>; accessed 11 October 2002.

²⁹ See Barry Bluestone, Peter Jordan, and Mark Sullivan, *Aircraft Industry Dynamics: An Analysis of Competition, Capital, and Labor* (Boston: Auburn House Publishing Company, 1981), 3, 5. They describe the term as comprising firms that “manufacture thousands of individual products, ranging from enormous airframes and immense jet turbines to a myriad array of parts and fixtures.” This includes aircraft manufacturers “engaged in manufacturing or assembling complete aircraft [and] establishments primarily engaged in research and development on aircraft,” aircraft engine and engine parts manufacturers; and “establishments primarily engaged in manufacturing aircraft parts and auxiliary equipment” including R&D related to this area.

³⁰ For example, the Science Council report examining aeronautical research and development uses the term aeronautics. This is because the study is not limited to civil and military aircraft produced by the aircraft manufacturing industry. It also explores aircraft structures, materials, aerodynamics, propulsion, systems, equipment, human engineering and real-world civil and military aircraft operations. However, its primary focus is on R&D that backs up the field of applied science. See J.J. Green, *Aeronautics – Highway to the Future: A Study of Aeronautical R&D in Canada*, Background Study for the Science Council of Canada, Special Study No. 12 (Ottawa: The Queen’s Printer, 1970), 16-19. The Lowe Report is doubly misleading. The main document refers to the Canadian aerospace industry, while a supplementary document uses the term aerospace manufacturing industry. The definition used is that of an industry which “has specialized capabilities for the design, research and development, production, marketing and in-plant repair and overhaul of aircraft, aero-engines, aircraft and engine sub-systems and components, space related equipment and air and ground based avionic systems and components.” Therefore, it includes the elements discussed in SIC 3211, as well as electronic/navigation equipment and space equipment classified under other standard codes. See Department of Industry, Trade and Commerce, *Canadian Aerospace Manufacturing Industry, Sector Profile, Discussion Paper* (Ottawa: Department of Industry, Trade and Commerce, 1978), 1. The Lumley Report does not clearly define these terms. However, the document clearly relates to aircraft manufacturing, space activities including satellites, engine building, parts manufacturing, aircraft repair and overhaul, electronic simulators, civil and defence aircraft, avionics and electronics. It, therefore, includes items in the SIC 3211 definition, but also considers avionics, space and the real-world operations of users in the defence and civil air transport field. See Department of Industry, Trade and Commerce, *Aerospace in Canada – Outlook and Strategy*,

Report of the Advisory Committee on Aerospace Development to Hon. Edward C. Lumley, P.C., M.P. (Ottawa: Department of Industry, Trade and Commerce, 1983), 1-2.

³¹ Letovsky, 63.

³² World Trade Organization, *Agreement on Trade in Civil Aircraft* (World Trade Organization, 1986), 182; available at www.wto.org/english/docs_e/legal_e/final_e.htm#civil; accessed 29 July 2002. For a slightly different definition see Daniel Todd, "The Internationalisation of the Aircraft Industry: Substance and Myth," International Labour Organization World Employment Programme Working Paper no. 29 (Geneva: International Labour Organization, 1989), 7. Here the author states: "The aircraft industry is really not a discrete industry but an assemblage of several that share an interest in producing aircraft and the aero-engines that power them. It also, perforce, embraces the diverse suppliers of aircraft and aero-engine parts and equipment. The US Department of Labour attempted to describe the functions undertaken by the assemblage (better known as the aerospace industry) and concluded that they entailed the manufacture of aircraft, missiles, aero-engines and propellers, along with the propulsion, guidance and other systems needed to make these vehicles fully operational. The Aerospace Industries Association of America (AIAA), the industry's trade body in the USA, has elected to construe its own definition of the broader, aerospace sector, namely that activity engaged in research, development and manufacture of aircraft, missiles, space launch vehicles and spacecraft in the first place; production of propulsion, guidance and control systems for the aforementioned in the second; and, finally, the procurement of whatever airborne and ground-based equipment is deemed necessary for the test, operation and maintenance of aircraft and spacecraft."

³³ Although the primary rationale behind this section is to allow for an overall understanding of issues such as importance of the industry to a particular country and the general direction of public policy, it is also worthwhile to place the Canadian industry in comparison from an analytical point of view:

- Briefly, Canada's industry is the 4th largest in the world. Annual sales amount to \$23 billion and it employs 84,000 people. The largest portion of production by the industry is exported, standing at \$18 billion (nearly 80%) of which \$15 billion (85% of the export total) goes to the United States. From the standpoint of sophistication, the industry ranks highly. For example, it has firms with full system design and manufacturing capability, as well as over 400 second-tier (those that produce sub-systems) and third-tier (those that supply parts, components and specialized services) firms.
- The industry accounts for about 4% of world exports of aircraft, engines and parts (for comparison the U.S. accounts for approximately 45%; U.K. for 20%; Germany and France about 10% each).
- The primary focus of the industry is on civil production. Over 90% of sales are of commercial products. The industries' products are aimed at specific niche markets. Among the first-tier prime manufacturers (Bombardier, Bell Helicopter, Pratt & Whitney Canada) the products include business jets, small regional commuter aircraft, civil helicopters and small aircraft engines. In these niche markets, Canadian firms maintain strong competitive positions (for example Bombardier is the leading producer of regional/commuter aircraft and a significant player in the business jet market; Pratt & Whitney is the leading producer of small gas turbine engines). Smaller firms produce aircraft subsystems, components, parts and carry out repair and overhaul of aircraft.
- Employment levels break down as follows: Quebec (49%); Ontario (31%); Manitoba (9%); British Columbia (5%); Nova Scotia (3%); Alberta (3%).
- Note that all numbers here are for the year 2001, except for those relating to world export share, which are averages for the years 1980-1992.

- For further information on the 2001 numbers see Aerospace Industries Association of Canada, “Canadian Aerospace Industry Performance – 2001” and Aerospace Industries Association of Canada, “Canada’s Aerospace Industry.” The information on world export share is from Industry Canada, Aerospace and Defence Branch, *Aircraft and Aircraft Parts: Highlights*, Sector Competitiveness Frameworks series (Ottawa: Minister of Supply and Services, 1996), 4.

³⁴ Bluestone, Jordan and Sullivan, 3. To be precise, this number represents the value of aircraft shipments in 1968 dollars. This number and those that follow are primarily intended to give an impression of the size of the U.S. industry. There is some inconsistency between what the overall numbers represent, size the various authors define the industry differently. For example, in the case of Bluestone et al, the value represents only aircraft shipments. The figure given by the Aerospace Industries Association (U.S.) (see following note) includes space-related production so is somewhat inflated.

³⁵ National Research Council (U.S.), *High-Stakes Aviation: U.S.-Japan Technology Linkages in Transport Aircraft*, Committee on Japan, Office of Japan Affairs, National Research Council (Washington, D.C.: National Academy Press, 1994), 96. These are based on 1992 dollars. By 2002 the whole aerospace industry in the U.S. combined for \$148 billion (in current year dollars) in sales (\$31 billion of this is related to the space industry). The export total was \$57 billion, which represents 39% of the total. Employment was a year average of 712,000. For these latest figures see Aerospace Industries Association (U.S.), “Year End Statistics – 2002”; available at www.aia-aerospace.org/stats/yr_endr/yrendr2002_text.pdf; accessed 30 December 2002. See also the comment in the preceding note re the relative inconsistency in numbers.

³⁶ Donald M. Pattillo, *Pushing the Envelope* (Ann Arbor, Michigan: The University of Michigan Press, 1998), 350.

³⁷ Bluestone, Jordan and Sullivan, 7.

³⁸ Herman O. Steckler, *The Structure and Performance of the Aerospace Industry*, Publications of the Institute of Business and Economic Research, University of California Series (Berkeley and Los Angeles: University of California Press, 1965), 32-35.

³⁹ National Research Council (U.S.), *The Competitive Status of the U.S. Civil Aviation Manufacturing Industry: A Study of the Influences of Technology in Determining International Industrial Competitive Advantage*, Chairman, Frederick Seitz, Prepared by the U.S. Civil Aviation Manufacturing Industry Panel (Washington: National Academy Press, 1985), 1.

⁴⁰ Seitz, 4.

⁴¹ Bluestone, Jordan and Sullivan, 9-10. The fact that the U.S. ties politics and purchasing decisions of civil aircraft together remains strong even today. For an excellent recent example see “Taiwan May Split Jet Order” *Globe and Mail* (Toronto), 30 September 2002.

⁴² Bluestone, Jordan and Sullivan, 45-46.

⁴³ Seitz, 2.

⁴⁴ Roger E. Bilstein, *The American Aerospace Industry: From Workshop to Global Enterprise*, Twayne's Evaluation of Modern Business Series (New York: Twayne Publishers, 1996), 220-221.

⁴⁵ Pattillo, 313-315.

⁴⁶ Seitz, 150.

⁴⁷ *High Stakes*, 1.

⁴⁸ Pattillo, 2.

⁴⁹ Bluestone, Jordan and Sullivan, 11.

⁵⁰ Bilstein, 220-221. Also see Steckler, 197-204.

⁵¹ Pattillo, 351.

⁵² *High Stakes*, 5-7.

⁵³ Aerospace Industries Association, *Final Report of the Commission on the Future of the United States Aerospace Industry* (Arlington, VA: Aerospace Industries Association, 2002), xi-xii; available at www.aia-aerospace.org/issues/commission/commission_report.pdf; accessed 5 January 2003.

⁵⁴ The countries with the four largest aerospace sectors are the U.S., U.K, Russia and France. Canada typically ranks around 5th largest worldwide. See *Sector Competitiveness Frameworks*, Section 2, Part A – Industry Structure, 4.

⁵⁵ See Hayward, 5. He states that in the U.K. industry “many new factors have accumulated in recent years, the combined effect of which had been to dilute the classical advantages of private enterprise. The industry is dependent to an increasing extent upon Government policy, Government decision-making, and Government money [and the industry] is dominated by issues ... beyond its control.”

⁵⁶ Hayward, 2.

⁵⁷ Hayward, 2.

⁵⁸ Hayward, 2-3.

⁵⁹ While the industry was affected deeply by the 1971 bankruptcy of Rolls Royce, problems also came from other external sources. For example, see Hayward, 159, for a description of how the civil aircraft industry in the U.K. was directly affected by the “energy and economic crises following the Yom Kippur war in October 1973.” He notes that airlines cut back orders and “the HS146 [airliner] was a direct casualty of the energy crisis and its aftermath.” The project was cancelled in 1974.

⁶⁰ For a complete exploration of the Rolls Royce bankruptcy see Hayward, 99-123.

⁶¹ For one example, see the discussion of the debate on future commercial aircraft programs for the U.K. industry in the 1970s in Hayward, 152-186. In particular see 180-181, where Hayward discusses the attempt on the part of BAe to resist the government's decision to impose an aircraft development program on the company. The Chairman of the firm was "highly sensitive to any threat to BAe's commercial autonomy" and perceived the government's effort to establish a collaborative international program as a threat to "industrial and technological expertise which ... would entail a loss to the nation."

⁶² Hayward, 4.

⁶³ Hayward, 5.

⁶⁴ Hayward, 159.

⁶⁵ Hayward, 171-186. The idea of industry becoming overly dependent on government aid, to the detriment of the sector, is an issue currently being raised in Canada as well. A recent newspaper report on Export Development Canada loans to foster sales in the aircraft sector notes that "[b]efore he left his post as EDC chairman in December 2001, Patrick Lavelle warned of the "dependence" of certain industries on government aid." See "EDC Exposure to Aerospace Tops \$9.3B" *Ottawa Citizen* (Ottawa), 10 April 2003.

⁶⁶ Hayward, 5, 197.

⁶⁷ Hayward, 3.

⁶⁸ Hayward, 5.

⁶⁹ Hayward, 210.

⁷⁰ Daniel Todd, Jamie Simpson, and Ronald Humble, *Aerospace and Development: A Survey* (Winnipeg, MB: The University of Manitoba, Department of Geography, 1985), 1-2.

⁷¹ *High Stakes*, 32. For a further in-depth exploration of Japanese policy see the entire section from 15-35.

⁷² *Sector Competitiveness Frameworks*, Section 6, Part C – Supply Side Issues, 1.

⁷³ Todd, Simpson and Humble, 2.

⁷⁴ *High Stakes*, 9.

⁷⁵ Todd, Simpson and Humble, 111. For a more in-depth overview of the early development of the Brazilian aircraft industry see Renato Dagnino and Domicio Proença Junior, "The Brazilian Aeronautics Industry," International Labour Organization, World Employment Programme Working Paper no. 23 (Geneva: International Labour Organization, 1989). See also Daniel Todd, "The Internationalisation of

the Aircraft Industry: Substance and Myth,” International Labour Organization World Employment Programme Working Paper no. 29 (Geneva: International Labour Organization, 1989), 43-47.

⁷⁶ Todd, Simpson and Humble, 113.

⁷⁷ John de la Mothe, Paul Dufour, and Richard Lipsey, “The End of Geography: Science, Technology and the Future of Canada,” in *Science and Technology in Canada*, ed. Paul Dufour and John de la Mothe (Harlow, Essex, U.K.: Longman Group UK Limited, 1993), 269.

CHAPTER 2

THEORETICAL FRAMEWORK

There are a number of ways a state can develop, or involve itself in, industrial policy aimed at the aircraft industry. The three examples previously described illustrate the range of options available. In the U.K., policy has generally been reactive. In the NICs, state involvement has been anticipatory and highly intrusive. The U.S. example can also be described as anticipatory, but one where the state is less intrusive and provides a supporting framework. These are useful because they form a spectrum against which we can compare the Canadian example. The question now becomes, how do we study state support of the Canadian aircraft industry sector over the last four decades? What theories are available to us? Which option is the most relevant and useful way to draw conclusions about the nature of state involvement in the sector?

The choice of theory is important. Perhaps the key reason is that it is useful to study the sector from a viewpoint consistent with earlier studies of industrial policy in general, and the aircraft industry specifically. The framework also allows us to achieve other goals. It helps us understand the difference between stated rhetoric about policy and the reality as demonstrated by state actions. Also, it is a way to discern patterns that will assist us in comparing Canadian

intervention to state intervention in the U.K., U.S. and NICs. Finally, it provides information that may suggest where changes and improvements can be made in future policy development.

This chapter lays out a framework for the study. It begins with an overview of the standard models of public policy analysis, including an overview of their respective strengths and weaknesses. The chapter continues with a description of the framework that will be used in this study. The framework is one developed by Atkinson and Coleman to investigate a number of key Canadian industrial sectors in four categories of development.¹ Their model allows us to investigate whether federal policy is anticipatory or reactive. Letovsky used the same framework to study the Quebec aircraft industry sector. Since this thesis builds on Letovsky's work, choosing the same model ensures consistency. The chapter also provides a brief overview of the nature of industrial policy development in Canada. This includes such items as why it is debated, recent changes in the nature of the debate, and other related issues. This helps us understand issues relating to state intervention in industry in this country. Finally, there will be a brief discussion of Letovsky's work and conclusions about the Quebec sector. It is one of the few studies of state policy directed at the aircraft industry done recently, suggesting that anticipatory policy has been applied meaningfully. This thesis builds on Letovsky's work, but offers a different conclusion.

Lenses for Public Policy Analysis

There are four main variants of public policy analysis, each of which will be described. These are the rational, pluralist, Marxist, and organizational models. An extension of the organizational framework is the institutional model, which will be used in this study and,

therefore, described in greater detail. Each theoretical framework provides the analyst with a perspective from which to focus on policy initiatives and attempts to make sense of them. Each offers something towards analysis and, despite their inherent individual faults, helps contribute to understanding. Anderson argues just this point when he states:

each [of the models] focuses attention on different aspects of politics and policy making and seems more useful for some purposes or some situations than others. Generally, one should not permit oneself to be bound too rigidly or too dogmatically to a particular model ... It is my belief that the explorations of political behaviour, rather than the validation of a given theoretical approach, should be the main purpose of political inquiry and analysis.²

Overall, none of the theoretical models is perfect. Each has particular strengths and weaknesses based on the assumptions from which they have been developed. This thesis uses Atkinson and Coleman's institution model. It is useful for studying industry and industrial policy, and ensures consistency since Letovsky used it in his study of the Quebec aircraft industry sector.

Rational Model

This framework relates to the political interaction of individuals and their influence on policy development. While typically referred to as the rational model, authors use a variety of terminology. Pal refers to it as the rational actor form; Brooks the public choice model; and Jenkins names it rational comprehensive. Doern and Phidd suggest that the rational and public choice types are similar with minor differences, although it is agreed they are related and have other variants including game theory and public choice theory.

The rational model is largely based on microeconomic theory. This suggests the existence of an economic, or rational, individual (*homo economicus*) who operates under

generally liberal values and a belief in individual choice, efficiency and institutional fairness. The model, therefore, is based on an idealized concept of the rational individual striving to achieve maximum reward or satisfaction in a policy development situation characterized by negotiation. Individuals in this case can refer to actual individuals, including single politicians and/or bureaucrats. It can also include organizations characterized as having a single, overarching character or identity. These can include state organizations such as bureaucracies, as well as non-governmental players such as interest groups, voters and the media. The model assumes that each of these players in the idealized, economic game is striving to attain maximum gain for themselves.

The negotiations, or interactions, between these parties take place within a system of rules. Typically, this includes identification of a problem, discussion of alternative policy options, negotiation and selection of the final course of action. If the basic ground-rules of the system are incorrect, however, economic inefficiency results. Also, where inadequacies in the implementation of a solution occur, the model has a built-in correction mechanism to improve policy over time.

Overall, the rational model is based on the concept of a perfect or ideal situation. However, there is general agreement that this framework fails for that very reason. Brooks, for example, argues that its assumption about state behaviour is faulty since both politicians and bureaucrats are power-seeking individuals. Therefore, policy does not evolve from a truly logical process but from one marred by strategic manoeuvring. Whether at an individual or an organizational level, the motive is personal gain.³ Pal also faults the model since it does not take into account a variety of influences on individuals coming from external sources. Not all individuals are the same. In the real world, they are distinct due to economic status, as well as

cultural, gender, and other factors. Moreover, he notes “[i]ndividuals do not have clear and transitive preference orders, they do not always act out of naked self-interest, and they rarely have a clear or true idea of their situation.”⁴ What he is saying is that there are no truly ideal, rational players. Decisions in the real world are simply not made the way the model suggests.

Overall, therefore, the model rests on a series of idealized assumptions about the behaviour of individuals based on liberal economic theory. The approach, based highly on the tenets of the scientific method, suggests all actions are perfect. The reality that all actors in the policy process are different, and are also influenced by many external factors, indicates the significant weakness of the approach.

Pluralist Model

The second dominant framework is based on the concept of groups working together to develop policy within a political atmosphere. Again, authors refer to it by various names including the pluralist, incremental bargaining, incremental-pluralist, or incremental models. In this study, the term pluralist will be used.

The pluralist model clearly contrasts with the rational model. In fact, theorists developed it largely because they suggested the rational model did not represent the real world. Therefore, they looked to understand how decisions were really made. There was recognition that state policy making involved complexity. Internally, the government consisted of a wide range of competing groups and structures, including the bureaucracy. On top of this, there were the external players including interest groups, media and consulting organizations among many others. For all of these actors in the policy debate, competition is seen as a generally

collaborative and interactive process attempting to reach a mediated agreement. However, the process is also characterized by dynamic factors including crisis response and incomplete information. Overall, then, the pluralist model implies structural group dynamics within a real operating environment and dealing with a multitude of political issues. Jenkins succinctly contrasts the rational and pluralist model as being “the ideal versus the real, the economic versus the political.”⁵

Another key characteristic of the pluralist model is that it assumes the policy making process is an on-going one. The various groups that interact do so not to make an ideal policy that is for now and forever. Policy is essentially a living entity in a changing environment and thus creates the need to continually change it. This is done over time in small steps towards, but never achieving, the ideal. One implication of this is that the resulting policy at any one point is less than perfect but acceptable to all groups, or the majority of them, since it is based on balancing interests. All interested players can win or lose certain aspects of the negotiation.

The general consensus about the pluralist model is that it is a good representation of democracy. A range of government and non-government interests are involved in developing policy. Groups outside the state have power and influence. The government in power cannot ignore these players since it is interested in remaining in power and must appease them in the interest of future support. As well, during development of policy, a range of ideas and values of groups, and the individuals in the groups, can be presented and used to influence the policy that is developed.

However, as with the rational model, there are underlying assumptions of the pluralist model that open it up to criticism. First, not all possible policy options are debated in the real world. Often, only a small number of options is presented to the groups for debate. Other more

creative or radical approaches remain unexplored. Thus, there is a tendency to remain closer to the status quo than to the avant-garde. Doern and Phidd argue that this results from the desire of actors to avoid risks while still reaching consensus.⁶ As well, while the model assumes all groups have equal influence, Brooks suggests there is actually a hierarchy with unequal power distribution. Business interests with money are closer to the top; the poor are near the bottom. On top of this, other factors come into play including gender, region and ethnicity.⁷

Generally, the pluralist model is strong for its assumptions that a range of interests are involved in the policy making process, thus pointing to support for democracy. Reasonable, incrementally positive policy change will result. However, the real world policy process operating in this fashion is inherently conservative. There is no risk, options are limited to ensure consensus, only small adjustments are made, and not all players are equally represented in the process. Pal argues, however, that despite the process being “messy, halting, [and] narrow” it remains the model that best represents what is seen in the real world.⁸ However, Doern and Phidd disagree, noting a major failing of the model is its inability to explain how and why more radical policy reform has taken place.⁹

Therefore, the overall weakness of this model is that it assumes that all groups are equal and have the same access to the public policy decision-making process. Hence, it is grounded on a view of equality of access that reality indicates is not the case.

Marxist Model

A third framework for analysis, although not a dominant one, is the Marxist model. It is also referred to as the class-corporatist model and seen to be one of several variants classified as

relating to structural determinacy. This concept relates policy outcomes directly to societal structures.¹⁰ The Marxist variant assumes political interaction reflects class division within society. It is a useful model since it helps a policy analyst investigate larger patterns of behaviour, particularly issues of power inequality resulting from income differences.¹¹ This is helpful since this lens provides results that the traditional or pluralist models overlook.

Generally, the theory begins with the fact that all advanced capitalist societies are divided by class. This spectrum ranges from the more powerful business interests down to the weaker working class. Due to financial and access issues, these classes do not have equal ability to influence either the state or policy conflicts. The state is seen as primarily responsible for interest mediation between the various classes. It balances social issues, while concurrently attempting to advance the economy through capital accumulation. Therefore, in the process of policy development, business interests remain the player with the most influence on the state. The implication is that this dominant group has an inordinate effect on the creation of policy. However, this does not mean the state does not have its own agenda. It is able to introduce policy that will, from time-to-time, advance and placate lesser groups in the hierarchy while offending the dominant group. Still, over time, the Marxist model implies that the dominant capitalist element will generally thrive and win more concessions in policy-related battles.

In the Canadian context, Mahon provides a strong example of how the Marxist model can be applied. She used it to examine the textile industry that was affected negatively by the combined effects of internationalization and de-industrialization. The state and various interest groups developed a policy response to a situation that led to job loss and, to a large extent, the winding down of the industry itself. She argued that there was indeed a controlling segment of capital in the country that was able to dominate politically.¹² The textile industry case illustrated

that this slice of the strongest element was “composed of resource or staples firms and their vision [was] based on export and liberalized trade.”¹³

The implication, therefore, is that the state tends to develop policy in accordance with the dominant group. In the Canadian case it is the resource sector that had maintained ‘hegemony’.¹⁴ Less powerful groups might present other options, but the effect on policy is small since their ideas are received with little consideration. Hence, policy derives from, and conforms to, the general direction set by the dominant component of society.

Mahon also suggests that, despite the dominance of one group, the state remains able to maintain some distance from it. This results from the need to ensure all other groups have some influence so their voices are heard. Otherwise, they could affect the party’s chances of remaining in power in later elections. On top of this, there is separation between the pure political interests of this type with those of distinct bureaucratic elements of the state.¹⁵ Overall, all groups maintain some influence in the policy compromise with the dominant segment, mediated by the state.

This framework has two significant weaknesses. First, it is derived from the concept of structural determinancy, which assumes that societal structure drives an individual’s behaviour. In the Marxist model, it is the capitalist economic system that has implications on class structure. The fundamental belief is that the major element determining policy outcomes is the inherent bias in the system, including the fact that relations between classes are antagonistic.¹⁶ Therefore, class representation in policy development is unequal. However, the theory assumes that all capitalist systems are the same and have the same effects. However, this is not the case. In reality, capitalist systems around the world are different. Secondly, the level of influence of

structure can be questioned. How the system really affects individual decision-making is unclear.¹⁷

Organizational Model

While each of the preceding theoretical framework models has strengths and weaknesses, they remain useful analytical tools. However, they also share another characteristic that suggests a common limitation. The assumptions of each model are based on a variety of external forces and are based on specific disciplines. Hence, the particular lens is imperfect based on the starting point.

As Jenkins argues, this situation requires another model. He suggests one based on two main characteristics. The first is to recognize that “organisations may dictate policies, or at least shape them, rather than policies move organisations.”¹⁸ In other words, the nature of the organization itself has an impact on the actors developing policy outcomes. The second is the need to be richer and based on a methodology incorporating a wider analysis of ideas. He calls for greater understanding using an interdisciplinary approach that will ensure a more informed level of investigation, one that can “only be achieved if one breaks down the barriers between the disciplines.”¹⁹ The framework incorporating these ideas is the organizational model.

This model suggests that better understanding results by taking a wider look at the policy making process. One underlying assumption of this approach is that there are many variants at play in the process. These are not solely external to the process, but come from both within and without. For example, the overall economic environment in which policy-making takes place influences choices. However, the environment is not static. Also, there are a range of interests

and changing situations that ensure interaction between political and bureaucratic agencies is dynamic as well. Moreover, each organization has its own ideology that influences how individuals form supporting or dissenting arguments used during power games between groups. Overall, then, the climate in which policy is made is very complex.

Hofferberry clarifies this concept when he states:

[p]olicy is made in a variety of contexts. Different contexts produce different policies – the level of government is one critical contextual variant for political activity. So is the national economic context. Changes in the level of government responsible for certain tasks or changes in overall economic climate lead to variation in policies produced.²⁰

Jenkins also suggests that the model selected to analyze a situation actually tells much about analysts themselves. The individual performing the study is likely to draw conclusions from the chosen model due to an already built-in belief system. What he is saying is that not only are standard models inadequate, but choosing them limits the quality of analysis as well. The wider approach he advocates permits an analyst to arrive at a different set of conclusions. This is not to say he believes his approach is superior. Simply, he suggests that the limitations of standard models have to be considered. He prefers an interdisciplinary approach as the lens to explain complex behaviour.

To achieve this wider viewpoint, more factors must be taken into account. This includes not only the consideration of the external and internal dynamics of the system, but also that of all the players and organizations involved in the policy process. He directs us “towards an examination of power distributions and the effects of organizational constraints, and towards a focus both on the internal dynamics of the political system and on the interaction of the system with its wider environment.”²¹ He suggests looking beyond the policy statements and documents that are the outcome of the government-interest group interaction. To obtain a clearer picture, all

actions of state and other players must be formulated into conclusions about what policy is. In effect, what Jenkins' model supports is a way to look beyond the rhetoric of policy statements promulgated by the state. It permits the analyst to examine what really has taken place and assemble these facts into a conclusion or set of statements about what policy really is.

Jenkins admits the organizational method has weaknesses, just as other models do. Primarily, he acknowledges that organization theory "has its paradoxes and its theoretical weaknesses."²² In particular, both it and systems theory developed through examination of the private sector, may not be fully applicable to the study of political behaviour. Moreover, since neither theory on which the framework is based is understood perfectly, analysis derived from it can never be expected to be entirely complete.

Institutional Model

Atkinson and Coleman provide a useful extension of the organizational framework with what they refer to as the institutional model. In line with Jenkins, they suggest that the theoretical rational and pluralist models used to evaluate policy process and outcomes have several weak points. First, the models focus on either individual or group behaviour in a rational competitive arena. The underlying assumption is that outcomes will be optimized through the process. Additionally, the fact that organizations are not considered limits how useful the models can be. Therefore, they dismiss the traditional models as restrictive and suggest we adopt a method of analysis that encompasses a wider perspective. This is similar to the approach Jenkins advocates. They argue for what they refer to as an institutional model.

In so doing, Atkinson and Coleman also move beyond Jenkins. They suggest there is more to consider than just state organizations. They argue, therefore, that institutions are important and must be considered since they have their own character that influences the individuals who belong to the organization. They state that institutions “not only aggregate individual ‘preferences’, they shape individuals.” Institutions play a large role in defining ideas and solutions and these affect individual actions. Hence, policy results not from rational actions from individuals or groups making logical choices, but instead where the ultimate decisions are based on the ideologies of the institutions to which individuals or groups belong. Moreover, it is the network of institutions that link public and private interests that is important. Hence, policy options and decisions are formulated and chosen based on a wide and complex range of interactions that lead to decisions about how a particular business sector evolves. Each of the actors or institutions in a particular sector have a set of beliefs that influences how decisions are made and what options are open to them as they develop policy. Considering these factors during analysis allows for different conclusions to be drawn than would be obtained using traditional methods.²³

These ideas provide a useful way of examining industrial policy in the Canadian context. It helps us understand the debates over how the state deals with business development in the country.

The Canadian Debate on Industrial Policy

While all countries have some form of industrial policy, the challenge is to discern how states deal with the need for industrial growth.²⁴ Much of the debate in this country centres on

whether the government should develop stronger industrial policy, as advocated during the late 1960s by agencies like the Science Council.²⁵ It argued for more government involvement in industry. The opposite scenario was one in which the state played a minimal role. However, before proceeding further, it is useful to explore various concepts about industrial policy, including what it is, what it does and why it is debated.

Various authors and organizations provide us with a range of definitions of industrial policy. For example, the Organization for Economic Cooperation and Development (OECD) suggests “industrial policies are concerned with promoting industrial growth and efficiency.”²⁶ McFetridge describes it as comprising “those government policies which are intended to have a direct effect on a particular industry or firm.”²⁷ Blais notes, however, that it is actually very difficult to make an all-inclusive definition that is perfect. He argues that the key is to include, within the definition, reference to both the objective and method used to implement policy. Therefore, he suggests the term be defined as the “set of selective measures adopted by the state to alter industrial organization.” However, he admits that this, too, is inadequate since policy also responds to political and social concerns.²⁸ His point is that, in reality, how to improve industry is not the sole focus. More is at play behind the scenes. For example, maintaining employment levels and regional development are also considered. Still, in general, industrial policy relates to steps taken by the state to improve and structure industry for increased economic performance.

Further understanding of industrial policy can be gained from understanding the general approaches to implementing it. Gollner notes that these have been described in a number of ways. For example, “[s]ome writers distinguish between targeted and non-targeted approaches. Others draw a distinction between interventionist and non-interventionist or *dirigiste* and laissez-

faire industrial policies.”²⁹ His own classification is defined differently but captures similar ideas. The first of these is the situational approach, one that is typically applied to one particular industrial sector or firm within a sector. A significant characteristic of this type is that:

[a]ssistance is usually random and often at odds with other government objectives or policy instruments. The overwhelming driving force ... is political expediency of one type or another. Least important are considerations of economic efficiency, rationality, or congruence with broad national economic objectives.³⁰

The situational approach suggests lack of planning and crisis management with no overall goals. His other two approaches are variants of one in which there is greater state leadership and involvement, as well as planning. The structural approach ties state objectives to the selection of important industries. Sectors are ranked and receive preferential treatment. The reallocative approach is similar in that it looks at the economy as a whole and chooses winning and losing firms or sectors.³¹

Overall, each of these descriptions of industrial policy types relates to the anticipatory and reactive definitions of Atkinson and Coleman. They imply either a state-driven and planned approach, or one where there is little strategic planning and steps taken are primarily an *ad hoc* response to crisis situations.

While there are a range of opinions about what industrial policy is and how to describe it, there is greater clarity about what it is intended to do. Proponents of strong policy want the state to be involved, in the belief they can best provide industrial and economic growth. However, others challenge this concept and believe any involvement by the government implies interference in the free market. Any such interference disrupts the market and actually causes the economy to decline. However, Blais notes that states will typically involve themselves in industrial policy for a variety of reasons. It is not simply a question of the desire for economic

growth. There is also a need to counter international competition. Markets are not perfect. National prestige and identity are often important issues. As well, innovation is seen as an important area for support since it “is considered today as one of the main engines of economic growth.”³² For all these reasons, it is difficult for the state not to have some form of policy.

The debate over which approach to industry policy Canada should follow is not new. However, it is particularly relevant here since there has been much discussion about how to deal with industrial stagnation and growth during the timeframe of this study. The aircraft industry is a good case because it suffered from an economic downturn and was greatly affected by government policy. Overall, however, the debate in Canada during the period of this study was which approach – anticipatory or reactive – best suited the country.

Anticipatory and Reactive Approaches

Atkinson and Coleman characterize the opposing approaches to industrial growth as conforming to two idealized models. The first, which implies a state-led strategy, is referred to as anticipatory policy making. The other end of the spectrum, which implies little state leadership and short-term action, is called reactive policy.

The anticipatory approach is based on the assumption of state involvement in industrial development. It does not, however, imply a situation where public organizations play the only role and private interests are eliminated. Intervention by the state remains cooperative. Atkinson and Coleman refer to this as a nurturing form that can feature a state-led structure or one that is more strongly negotiated between public and private interests. Another feature of the anticipatory approach is a focus on industrial sectors that are of strategic importance to national

interests. The state would play a significant role in the long-term preservation or development of these sectors. Government support would be “distinguished by a set of programs targeted to specific sectors or firms and based on an assessment of appropriate industrial structure.”³³ This implies planning, as well as creating, an overall organization and strategy for the particular industrial sector. The strategy is applied systematically for the benefit of the whole sector.

This type of strategy would also affect the state. In particular, there would be a specific bureaucratic institution established to oversee the particular sector, as well as an “integrated and representative interest associational system.”³⁴ This arrangement would ensure both public and private interests were looked after through coordinated communication systems. Atkinson and Coleman note this would ensure each party had an impact on all levels of the economy, not just at the sectoral level but at the macro-economic and micro-economic levels as well. The public and private elements would, overall, have a high degree of integration. This is the type of organization the Science Council advocated for the aircraft industry sector in the late 1960s, the period in which this study begins.

The reactive approach is clearly different. The approach is not strategic and is not an attempt to influence the economy in a structured and consistent way. It is largely based on moves made in response to any of a range of poor market performance scenarios. Atkinson and Coleman describe the approach as:

a series of broad measures, provided through the tax system, general schemes of industrial subsidy, or programs of trade protectionism [which] create ... an appropriate climate for investment ... [T]hese policy instruments are introduced only where policy-makers believe that ‘distortions or imperfections in the market mechanisms prevent industry from optimizing its performance’ ... [Also] reactive policies are ... congruent with a political rationality based on maximizing votes by maintaining jobs.³⁵

The reactive approach, therefore, is typically characterized by short-term action and inconsistently applied policy measures. Action is taken in a crisis. Intervention is made not for the benefit of the sector as a whole, but is largely aimed at saving individual companies. Atkinson and Coleman suggest that the policies are applied in such a fashion because the “economy is viewed in terms of healthy and ailing firms rather than of promising and declining sectors.”³⁶ Funds are poured into firms requiring financial bailouts caused by the stresses of market failure. Communication and coordination between the public and private institutions are poor or lacking entirely. Finally, state action is the result of the desire for political gain rather than the needs of the sector. Votes and job saving become more important to the actors than resolving industrial issues.

In summary, the two types of policy making are characterized by four key elements. These are the overall objectives of the policy, the level of intrusiveness of the state, the degree of structural integration between public and private interests, and coordination through communication. The anticipatory policy framework implies the goal of industrial transformation led, or nurtured, by the state, with an appropriate bureaucratic institution dedicated to working with private industrial interests and engaged in cooperative communication to ensure positive long-term strategic development. The reactive model, on the other hand, concerns short-term steps to combat market failure or other crisis situations using inconsistent and poorly coordinated intervention by political or bureaucratic element of the state interested in saving individual firms, votes or political reputations.

A Rationale for the Reactive Path

Atkinson and Coleman argue that, in Canada, the state is generally not oriented toward strategic development and thus tends to operate in the reactive mode.³⁷ They suggest policy development in this country has been reactive because of the nature of our institutions. It is the character of both industry and the state, comprising both political and bureaucratic elements, that affect how and why policy decisions are made. In addition, these institutions operate in a capitalist system that typically supports a high level of private business autonomy together with a low level of state intervention. They characterize the situation as one of a firm-centred culture combined with a weak state tradition.³⁸ This results in an environment in which the state has no desire, or even the institutional tools, to intervene to make strong industrial policy. Additionally, business resists state assistance except in times of crisis. Hence, at least at the macro-economic level, no attempts are made to create the type of strong, industrial policy with strategic orientation characterized as anticipatory.

The nature of the private sector can be gauged from a number of factors. Industrial interests have been able to dominate policy debates historically since the country was formed.³⁹ Atkinson and Coleman suggest this was because opposition from labour and agrarian interests was less organized and weaker, so industry was able to establish and remain the dominant non-state force in policy debates. Therefore, this dominant group had greater influence on the state and could ensure policy more closely followed their interest in remaining independent of state control. On top of that, leaders of the two dominant parties generally supported the market concept and the idea of business independence.⁴⁰ This pattern continued over time because business was better at pressure group politics. Business interests provide significant funding to

major political parties. Therefore, to stay in power, the political side of government continues to listen attentively to business interests and will tend to develop policy that is generally more supportive of industry.⁴¹

Another characteristic that influenced how industrial policy developed relates to the strength of industry-wide business associations. Atkinson and Coleman suggest that these associations were weak or disconnected in the past, and remain so today. Since the agrarian and labour interests were weak during the initial policy battles, there was no need to develop strong organizations that would link all business together. Instead, what developed were a number of industrial groups with narrow interests. These individual groups were not strong enough to influence the state on larger macro-economic issues. However, they were able to influence elements of the bureaucracy that had similar interests and these inputs were passed on during policy debates.⁴²

However, this created a situation where linkages between the state and private interests were generally weak. This did not promote strong communications between the two institutions overall, but merely at certain specific locations. Association may be stronger at these locations with related sectoral interests, but are generally inadequate to affect larger issues. Moreover, there is no framework of trust that ties the two together in a form that allows them to coordinate efforts. Atkinson and Coleman assert that:

[f]or ... business, the principle of competitive markets is enshrined to the point that the internal decisions of firms are not considered legitimate targets of political action. Under these circumstances, the prospect of a concertative relationship, in which business and government collaborate in making long-term investment decisions, is greeted with hostility. As a result, this firm-centred culture inhibits an anticipatory approach to industrial policy.⁴³

The second influence on policy making relates to the nature of government, including the political arm, but specifically the bureaucracy. Here the situation comes down to four factors. First, the Canadian government system is characterized by a diffusion of power between the federal and provincial governments. There is difficulty working together to develop strong responses to crises. Second, both political and bureaucratic elements of the government have influence, but it is the political party in power that has most of the strength and can exert undue influence.

Thirdly, the bureaucracy generally lacks both the expertise that would allow them to develop independent ideas and the strong organizational linkages that would help it build consensus about new policy initiatives. Finally, “bureaucrats... endorse the view that they are merely the servants of elected officials and as such have no business articulating policy positions independent of what they understand to be the agenda of the governing party.”⁴⁴ Atkinson and Coleman argue that these characteristics all support a tendency to develop reactive rather than anticipatory policy forms.

Overall, then, it is the nature of the state and business institutions in this country, as well as the general notions of the capitalist system, that limit the ability to develop anticipatory policy. Awareness of these constraints on the development of anticipatory policy contributes to our understanding of how to overcome the shortcomings of reactive policy in the aircraft industry sector.

Recent Policy in Quebec's Aircraft Industry Sector

Letovsky sees merit in Atkinson and Coleman's ideas and uses them as a starting point to analyze the aircraft industry sector in Quebec. His study is interesting since it is one of the few that examines recent public policy in this area. His conclusion supports the view that, at least in this one province, recent policy does demonstrate at least some characteristics of anticipatory policy. This may indeed be a valid conclusion to some extent. However, the question is whether these policy examples adequately represent the complete picture. Hence, it is worth examining other examples of state support of the Canadian aircraft industry to allow us to discern other patterns and arrive at a different conclusion.

Letovsky's starting point is based on examination of the Quebec sector using three distinct hypotheses. Each categorizes the limit and influence of state industrial policy on the recent success of the industry in the province. He describes the three cases as:

- Public policy's role ... has been mainly in the form of various reactive industrial policy measures, and had a marginal role ...
- The sector owes its success ... as a result of private sector activities, with public policy being largely irrelevant ...
- Public policy, undertaken under the aegis of an "anticipatory" industrial policy outlook, has played a meaningful role.⁴⁵

His analysis is based on several assumptions determined by his point of view. He notes that trade in high technology products has increased in world markets over the past few decades. Academic investigators studying this issue have shown that the factors for success with this type of product are different than for traditional items. First, he acknowledges Schumpeter's assertion that innovation is key to economic growth. More important, however, is Skolnikoff's work, which suggests people skill, management, quality of science and technology and other factors are

more important for success. However, strong industrial policy is also a vitally important element.⁴⁶

Letovsky accepts these ideas and acknowledges that innovation is a process of learning that takes place both inside and outside firms. His analysis is directed to firms, within the same industrial sector, that are linked in districts or clusters and in close proximity to one other. He notes it is important for these linked firms to work together to improve overall performance. The key issue is for these firms to communicate and develop inter-firm learning abilities to increase sector business development. This process can be aided by policy that fosters learning, innovation, and product development which, together, improve economic growth. The key element of policy, then, is to encourage relationships and communication at the sector level. He argues:

[i]f such relationships can be encouraged, then the firms in the region can be expected to engage in the kind of continuous innovation which is the essence of establishing and maintaining competitive advantage in knowledge-intensive industries. In other words, policy measures that promote linkages and collaboration among firms in a given area can be expected to promote greater learning and hence skill development by these firms. This in turn can be expected to result in greater innovation by area firms.⁴⁷

As for firms in the aircraft industry, which have features common with other high technology companies, the rationale is the same. Policy efforts promoting relationships will help. Letovsky's study is, therefore, an attempt to illustrate that recent state policy initiatives of this type have been taken, and this demonstrates an attempt at anticipatory policy development.

His conclusions tend to support his reasoning and hypothesis to a large degree. Indeed, he concludes that the Quebec sector demonstrates characteristics of anticipatory policy development aided by a privately driven process. This is largely a mix of two of his original hypotheses.

However, even accepting the fact that his line of thinking is generally correct, his evidence is not strong. He suggests anticipatory policy in this case consists of “appropriately timed and targeted public policy initiatives.”⁴⁸ He uses networking dinners, sector newsletters, support for trading institutions and similar initiatives as examples or new organizations and tools to promote the sector and improve the competitive position of its various firms. It may be true that these various initiatives do indicate a small growth in some forms of anticipatory policy. However, they are limited in extent, especially when compared to nationalization or bailouts given by the federal government. We may well conclude that the anticipatory steps Letovsky discusses are relatively minor overall. This is not unexpected for, as Jenkin notes, provincial governments do not have the same level of policy instruments available to them that the federal government does. He adds, however, that the provinces are now “building up a significant level of experience in many types of policies” to support industry, particularly since the federal government is becoming less involved in structured policy.⁴⁹

In conclusion, this thesis provides an alternative examination of the aircraft industry sector. It investigates state support of the aircraft industry right across the country over the past four decades. To do so, it uses the institutional framework suggested by Atkinson and Coleman, including their concepts of reactive and anticipatory policy. The study places particular emphasis on individual firms, state actions related to the sector, and relevant policy documents. This alternative viewpoint, different from the one Letovsky used in his study of the Quebec sector, allows us to conclude that state support generally follows the reactive model. Also, it suggests that Letovsky’s conclusion that some recent forms of anticipatory policy have been

meaningful is inadequate. That understanding may lead to us to discern new and stronger alternatives to a reactive approach that has had less than optimal consequences for the industry.

NOTES TO CHAPTER 2

¹ See Michael M. Atkinson and William D. Coleman, *The State, Business, and Industrial Change in Canada*, The State and Economic Life Series (Toronto, Buffalo, and London: University of Toronto Press, 1989). These authors studied Canadian policy relating to four forms of business development and related sectoral examples. These were: International Expansion (telecommunications manufacturing); Domestic Expansion (pharmaceuticals); Transition (petrochemicals and meat processing); and Retrenchment (textiles, clothing and dairy products). The aircraft manufacturing sector was not among those studied in their work, but could be considered as falling under the International Expansion category during the period studied in this thesis.

² Quoted in W.I. Jenkins, *Policy Analysis: A Political and Organisational Perspective* (London: Martin Robertson & Company Ltd., 1978), 20-21.

³ Stephen Brooks, *Public Policy in Canada: An Introduction*, 2d (Toronto: McClelland & Stewart Inc., 1993), 36.

⁴ Leslie A. Pal, *Public Policy Analysis: An Introduction*, 2d (Scarborough, ON: Nelson Canada, 1992), 31.

⁵ Jenkins, 13.

⁶ G. Bruce Doern and Richard W. Phidd, *Canadian Public Policy: Ideas, Structures, Process*, 2d (Scarborough, ON: Nelson Canada, 1992), 6-7.

⁷ Brooks, 32-33.

⁸ Pal 1992, 41-42.

⁹ Doern and Phidd, 8.

¹⁰ Pal 1992, 39.

¹¹ For example see Leslie A. Pal, *Public Policy Analysis: An Introduction* (Toronto: Methuen Publications, 1987), 227. Also see Doern and Phidd, 12-13.

¹² Rianne Mahon, *The Politics of Industrial Restructuring: Canadian Textiles* (Toronto, Buffalo, and London: University of Toronto Press, 1984), 3-9.

¹³ Atkinson and Coleman, 189.

¹⁴ For further explanation see Mahon, 9-12 in particular. Overall, the economy is dominated by the capitalist class, but the 'hegemonic' fraction, or "the fraction of capital that places its stamp on the

direction of the national economy” is the resources sector. She notes that “[t]he resource or ‘staples’ sector has been the leading sector of the economy for most of Canadian history.”

¹⁵ Mahon, 38.

¹⁶ Brooks, 38.

¹⁷ Pal 1992, 30.

¹⁸ Jenkins, 5. He clarifies further that the issue is how an organization will take a policy decision and implement it in practice. He calls this “the problem of translating ‘intentions’ into ‘outcomes’”. See Jenkins, 7.

¹⁹ Jenkins, 248.

²⁰ Jenkins, 13.

²¹ Jenkins, 63.

²² Jenkins, 80-81.

²³ Atkinson and Coleman, 4, 6.

²⁴ This section is by no means intended to be comprehensive and demonstrate all aspects of the debate. Our intention is to limit this section to issues relating to reactive and anticipatory ideals, since this study is formulated around Atkinson and Coleman’s work. As discussed in Chapter 1 note 2, for example, are several examples of concepts relating to industrial policy in the knowledge economy particularly relating to science and technology. Another useful source on the debate during the 1970s, as well as the ‘nationalist’ and ‘continentalist’ schools of thought, see Glen Williams, *Not For Export: The International Competitiveness of Canadian Manufacturing*, 3d (Toronto: McClelland and Stewart Limited, 1994).

²⁵ The Science Council resulted directly from the Royal Commission on Government Organization (the Classco Commission) and was established in 1966. Before this, however, “a Science Secretariat was established within the Privy Council Office (PCO) in the spring of 1964 [and] provided services to the Science Council during the first two years of the Council’s operation ...” For further information see Paul Dufour and John de la Mothe, “The Historical Conditioning of S&T,” in *Science and Technology in Canada*, ed. Paul Dufour and John de la Mothe (Harlow, Essex, U.K.: Longman Group UK Limited, 1993), 12-13 in particular.

²⁶ Quoted in André Blais, “Industrial Policy in Advanced Capitalist Democracies,” in *Industrial Policy*, Research Coordinator André Blais, Royal Commission on the Economic Union and Development Prospects for Canada, volume 44 (Toronto, Buffalo, and London: University of Toronto Press, 1986), 3.

²⁷ D.G. McFetridge, “The Economics of Industrial Policy: An Overview,” in *Canadian Industrial Policy in Action*, Research Coordinator, D.G. McFetridge, Royal Commission on the Economic Union and

Development Prospects for Canada, volume 4 (Toronto, Buffalo, and London: University of Toronto Press, 1985), 1.

²⁸ Blais, 4.

²⁹ Andrew B. Gollner, "The Effects of Business-Government Relations on Industrial Policy" in *Industrial Policy*, Research Coordinator André Blais, Royal Commission on the Economic Union and Development Prospects for Canada, volume 44 (Toronto, Buffalo, and London: University of Toronto Press, 1986), 295.

³⁰ Gollner, 295.

³¹ Gollner, 295-296.

³² Blais, 32-34.

³³ Atkinson and Coleman, 24.

³⁴ Atkinson and Coleman, 27.

³⁵ Atkinson and Coleman, 24.

³⁶ Atkinson and Coleman, 26.

³⁷ Atkinson and Coleman, 7-9.

³⁸ Atkinson and Coleman, 7-8.

³⁹ Rianne Mahon would likely suggest this supports her contention about the dominant class in Canadian society. As seen earlier in this study, she argued that there has indeed been a dominant economic class that has been able to dominate in the debate about industrial policy, as evidenced in her study of the textile industry. See Mahon, 7-13 in particular.

⁴⁰ Atkinson and Coleman, 40.

⁴¹ Atkinson and Coleman, 46-47.

⁴² Atkinson and Coleman, 44.

⁴³ Atkinson and Coleman, 40.

⁴⁴ Atkinson and Coleman, 59.

⁴⁵ Robert Letovsky, "Public Policy and the Quebec Aerospace Sector," Ph.D. dissertation (Concordia University, 1999), 181.

⁴⁶ Letovsky, 3.

⁴⁷ Letovsky, 10.

⁴⁸ Letovsky, 14.

⁴⁹ Michael Jenkin, *The Challenge of Diversity: Industrial Policy in the Canadian Federation*, Background Study for the Science Council of Canada, Special Study No. 50 (Ottawa: Minister of Supply and Services, 1983), 170.

CHAPTER 3

AN ERA OF NATIONALISM AND PUBLIC OWNERSHIP (1965-1984)

As shown in the Introduction, governments in both advanced and newly industrializing nations have involved themselves deeply in the development of their aircraft industries. This involvement differs, but ranges between being planned and strategic (or anticipatory), to short-sighted and oriented to crisis management (or reactive).

To examine the Canadian case, we first investigate what occurred between 1965 and 1984. This period is marked by the stewardship of various Liberal governments, except for a nine-month period under a Conservative government. Planning, centralization, and nationalism were strong undercurrents to the development of policy.

This chapter examines whether state policy during this period was anticipatory or reactive. It focuses on several key episodes involving actors in the airframe manufacturing business. It also examines various policy-related documents generated for, or in concert with, state agencies. Together, this information illustrates that the state followed a reactive policy path. Before turning to this evidence it is first worthwhile to understand the general nature of state intervention in the aircraft industry in this country before the period covered herein.

State Intervention from 1920 to 1965

Fortier's voluminous examination of the Canadian aircraft industry covers the period from 1920 to 1965. It studies the early beginnings of the industry, through its growth to a so-called "golden age"¹ in the mid to late 1950s, followed by a perceived decline. The approach is primarily historical, but couples an in-depth understanding of events and aviation programs with key political events and controversies. The author's goal was to examine whether there had been a true, independent and coherent policy for Canada's industry during this period.

To aid his analysis, the author attempts to emphasize the role of the state in public policy, based on the ideas and concepts used by Axworthy², as well as by Doern and Phidd. These authors see public policy as being based on a wide range of actions and decisions taken by the state. Fortier, therefore, attempts to bring together a wide range of information and uses deductive reasoning to develop conclusions. He states "nous abordons tous les programmes de production d'avions au Canada ... de même que les débats et controverses qui s'y attachent ... pour ensuite développer quelques hypothèses de nature générale fondées sur ces bases empiriques."³ The material collected and analysed is diverse. However, the author acknowledges its limitations. A range of externalities that apply to public policy analysis, such as the effects of economics, employment and technology spin-offs, have not been included. The study relates largely to the author's contention that "la seule véritable raison qui justifie la création d'une industrie aéronautique nationale se situe par conséquent au niveau militaire. La survie de l'État en dépend."⁴ The aviation industry existed only for national defence purposes.

With this viewpoint, he suggests that the federal government, and in particular the Minister of Defence, played an important role in the development of the industry. In fact, this

may have less to do with the individual ministers and governments along the way than with the crises the country faced during the period. Little progress had been accomplished until the end of the 1930s and there was essentially no attempt to develop policy. He notes “les besoins en avions suscités par l’entrée en guerre du Canada dès 1939 ne tardent pas à démontrer la situation lamentable dans laquelle se trouve l’industrie aéronautique du pays.”⁵ In fact, the first sign of a strong policy by the state resulted from the need to support the war effort. The state nationalized a large part of the industry.

Following the war, the state returned the nationalized portions of the industry to private hands. In the post-war period up to 1965, it was largely an industry adrift. A lack of work after the war led many firms to disappear. Those that survived did so not because of consistent state policy, but because they focused inwardly on purely Canadian requirements. Canadair survived primarily by providing aircraft built under licence from U.S. firms for the Royal Canadian Air Force; DHC concentrated on designing and producing a line of bush aircraft; and Avro Canada pursued leading edge technology that, arguably, couldn’t sell.⁶ If anything can be said about the period, it is that it was a cyclical and calamitous time. Defence requirements resulting from the Korean conflict and Viet Nam War boosted demand⁷, while commercial needs during times of relative peace were less substantial. The industry was under the influence of a variety of ministers and politicians throughout a series of political and economic crises, highlighted by the depression, the Second World War, and the police action in Korea.

Fortier argues on the evidence that the industry during the period lacked a truly Canadian-centred policy implemented by the state. Policy was neither consistent nor effective. Even though the government contributed significant funds to the industry during and after the

Second World War, the lack of a strong, formal policy had negative consequences. He states that:

[l]e Canada, en effet, n 'a jamais eu de politique globale en aéronautique ... Il fait partie d'alliances plus ou moins formelles qui limitent beaucoup sa liberté de manoeuvre. Ces contraintes, liées à une augmentation vertigineuse des coûts du matériel et à l'intégration économique et militaire du Canada et des États-Unis, expliquent le déclin progressif de l'industrie aéronautique au pays après 1959.⁸

By the early 1960s, the industry was disjointed and dysfunctional, and the defence spending that propped it up in the past was on the decline because of the impact of changing defence policy. Whatever progress had been made over time had been lost either from a lack of coordinated policy and/or state non-intervention.

A Push for a Structured Industrial Policy

That defence policy had a significant effect on the aircraft industry during and after the Second World War is clear. This observation is also reflected in the Science Council of Canada's study known as the Green Report. The Council, formed by an Act of Parliament in 1966⁹, had a mandate to investigate Canadian science and technology and make recommendations to the minister about such areas as priority setting, long-range planning, and other ways to improve research and development.¹⁰

The problem in the aeronautics field, as the Science Council saw the situation, was similar to Fortier's analysis. Simply, there had been little effort to have a coordinated aeronautics policy in the country. While a number of public and private organizations were involved in the effort, there was little to tie them together into a collective force. The report noted that "there cannot be said to exist in Canada any overall stated policy. What does exist are

the several policies followed by the various departments concerned ... but these are not integrated or significantly coordinated.” As for the development of a long-term strategy, it followed up by stating that “[b]road national objectives for aeronautical research and development have not been formulated in this country except perhaps in the period immediately after World War II,” and then only for defence purposes.¹¹

The Council believed that the sector was at risk. In fact, the report was a reaction to the recognition that, during the mid-1960s, significant changes had taken place “in both civil and military aviation, in the supporting industry, in the position of research, and in government policy objectives and legislation affecting all these fields.”¹² In particular, the report acknowledged that aeronautics had, historically, primarily served national defence purposes, its role was now declining. Civil export trade, however, was on the upswing. Between 1963 and 1968, domestic defence sales dropped by 40 per cent while exports increased by 140 per cent. The change in orientation from the historic pattern was significant since it “forced the industry to export for survival and [transformed] business attitudes.”¹³ Moreover, despite the fact that civil exports grew over the previous years, concern remained that the industry would even survive.

Their study of the aeronautics industry, begun in 1968 and released in 1970, focused primarily on aeronautical R&D. However, examination of the state of affairs in the aircraft manufacturing industry was an important and distinct element of the study. The Council set out a series of goals for the experts and specialists hired to do the report. These included examining existing civil and military programs, studying industrial potential and economic implications, and setting future goals. They solicited input from industry and professional associations and accepted unsolicited materials as well. They developed conclusions from this wealth of information.¹⁴

To provide the most effective analysis, the writers focused on three areas. First, they examined the status of the sector's manufacturing, civil and military operations, and R&D programs in industry and universities. The report's lens is clear, for "it was assumed at the outset ... that the way in which a country organizes its R&D efforts is an important factor."¹⁵ The next step was to examine the government's advisory structure, including the organization of R&D and the bureaucracy. Finally, the analysts offered a ten year outlook. From this, they felt they could determine which programs offered the greatest potential for the country. Also, they hoped to improve the advisory structure within the government by developing a "framework in which technological needs and opportunities [could] be recognized and exploited by industry with government encouragement and co-operation [sic]."¹⁶

The Council's solution was for new and innovative ways to ensure that an effective framework existed to help give more strategic direction to a technological field considered to be of high importance for the country's development. It called for strong government action to develop new policy quickly to cope with the transformation it saw was already underway. One key suggestion was to improve the system of coordination between agencies to resolve what it saw as a haphazard system. The structure they recommended included an advisory organization of industry specialists that would report directly to the minister. A simpler organization would also overcome the lack of communication between participants in the planning process and ensure that the proper knowledge and understanding was passed along to the government officials who were responsible for aeronautics in the country.¹⁷

The report went on to identify several programs and research efforts that the state could support in the near term. Among these was a national STOL (short takeoff and landing) program, which would take advantage of recent civil aircraft experience and systems design

skills to take advantage of international sales opportunities. This program will be discussed later in further detail. However, what is important is that the government chose to follow the advice to encourage the program. As will be revealed later, when the creative plan ran into problems, attempts to resolve issues demonstrated short-term, reactive approaches.

A New Player Adrift

After the Science Council released its blueprint for a more anticipatory policy for the industry, a new firm attempted to exploit the opportunity brought about, in large part, from changes in the civil aircraft market. Particularly in the U.S., third-level airlines that provided local or regional service were expanding rapidly. The new company, Saunders Aircraft Corporation (SAC), formed in Manitoba in 1971. It began work on a new small, propeller-driven, aircraft that could satisfy this emerging market and possibly contribute further to Canada's export trade. Unfortunately, the weak and haphazard policy environment the Science Council had warned about would influence the company negatively. The company was affected inconsistent state support that hurt both foreign and domestic sales and, therefore, put a premature end to a new aircraft program.

In part, the company and its new design resulted from the government's attempt to create a new regional air policy. The new policy suggested that, in a revised operating framework, the two main national air carriers, Air Canada and CP Air, would serve the country alongside a growing network of smaller airlines serving regional or local interests. The new policy was based on the assumption that the large carriers, then transforming into jet aircraft only operations, would no longer want to serve smaller communities. Therefore, new air transport

firms, using smaller aircraft to capture the business the major airlines abandoned, would be required.¹⁸ This provided the aircraft industry with the opportunity to develop a new aircraft for use in Canada. As well, the new airliner could be marketed abroad.

The new aircraft, developed by a former Avro Canada engineer, was to be a low-cost, medium-sized, short-haul transport to offer to air carriers for use on third-level operations. This would be achieved by offering a heavily modified and re-engined version of an existing aircraft. Since the initial investment was low, the company could achieve initial sales by offering the airliner to customers at an attractive price. While the conversion program was underway, the company would complete a re-design that would be, in essence, a new aircraft type. The plan was attractive enough that the Manitoba Development Corporation (MDC) decided to help finance it by offering 25 per cent of working capital for an initial four years, contingent upon the company relocating to the province. The federal government also provided funding through a regional development allocation. It paid the firm \$2000 for each job created. This quickly turned into a fiasco when local unions discovered the firm hired half of its workforce from England, instead of hiring and training Canadians.¹⁹

This initial indication of unclear or improperly applied policy was followed up quickly by an even more blatant example. In its early attempts to sell the aircraft abroad, the company had difficulty finding export financing. This was supposed to be the role of the federal Export Development Corporation (EDC). However, SAC could not get support from the state agency and had to rely on private funding, which placed a greater burden on the firm and provided less favourable terms for potential customers. One Colombian airline purchased two aircraft immediately; however, these were later repossessed when the airline could not keep up with the payments. Interestingly, immediately afterwards the same airline bought two new aircraft from

competitor DHC (by this time owned by the state) “with the help of a loan with favourable repayment terms” from EDC. Later, another sales prospect to a Chilean airline fell through for the same reason. Again, SAC lost the sale to DHC because EDC financing was provided only to the latter firm and could make its deal more competitive.²⁰ Inconsistent state support, consistent with reactive policy application, hurt one element of industry.

This indicates the weakness of haphazard policy. However, the situation was even worse. While one arm of the state, EDC, was not providing funds to the detriment of SAC, other areas of the bureaucracy were spending significant amounts to promote the firm. This occurred particularly after production, design and sales challenges pointed to the fact that the company may not survive. In 1973, the state provided about two-thirds of the funds towards development of the new model, then followed up the next year with \$4 million for construction and certification of a prototype.²¹ Weak policy led to the situation where elements of the state were working at cross-purposes to one another.

One further example of reactive policy related to SAC revolved around a federal program to provide air service between Manitoba and Saskatchewan as part of the new regional air policy previously mentioned. SAC would build the aircraft for the new run. Stevenson notes that Trudeau announced the program during the Liberal’s 1974 election campaign.²² His implication is that it was more about attracting votes than either industrial or transport development policy. However, the state did eventually pay the entire purchase price of the two aircraft, perhaps one more veiled way to provide funding to SAC. Unfortunately, the whole scheme collapsed and the aircraft were never used on the new run. Regional and federal interests killed the scheme. The governments of Manitoba and Saskatchewan could not agree on how to subsidize losses incurred during operations. Moreover, while the federal government wanted an independent, privately

owned airline to operate the service, the provinces argued that their own provincial airlines should be involved. Stevenson argues that the federal government never had clear goals or priorities other than “the avoidance of any controversy that might be politically damaging.”²³

Within just five years, SAC closed its doors, just as its newly designed aircraft was rolled out and ready for the market. It managed to survive that long despite operating in an environment where policy was weak, disconnected, and often contradictory. Federal agencies supported it, while simultaneously damaging it. Transport policy, itself inconsistent and unclear, played its part in harming the industry. Also, as discussed earlier, politicians themselves appeared to pay as much attention to votes and regional interests than to helping a new entrant survive for a potential long-term benefit to both the sector and Canada. Nearly \$50 million in financing by the federal and Manitoba governments had been spent by the time the program was stopped.²⁴

STOL - Reacting to an Oversold Program

The lack of a strong and coherent policy demonstrated itself again when the state attempted to take advantage of a new trend in civil aviation, similar to the one that led to SAC’s attempt to build a small feeder airliner. This concept was to use small airliners in a similar way to trains, flying passengers rapidly from one urban centre to another along highly travelled, city-pair corridors. It is worth noting that the government’s decision to join the program, as well as subsequent reactions later when problems occurred, was motivated by the Science Council. Its 1970 report argued “that a major priority of ... industrial strategy [should] be the development of a ‘Canadian [short takeoff and landing] STOL air transport system’.”²⁵

The genesis of this episode²⁶ can be found in two aviation trends in the U.S. during the early 1960s. First, the military was operating aircraft using new technologies to improve takeoff and landing capabilities for operations in and out of small and constrained airfields. DHC designed and built many of these aircraft. At the same time, changes in operating regulations fostered the growth of new local and regional airlines. The Federal Aviation Agency saw the connection. New STOL aircraft could be used for downtown-to-downtown, intercity flights. It was not long before U.S. interests in the scheme performed a series of demonstration flights in and around New York City to evaluate the concept. Among the aircraft types used were several current DHC types originally designed for either bush or military operations. As airline interest in the concept grew, and studies by agencies including the U.S. Civil Aeronautics Board (CAB) proliferated, the search began for a new civil aircraft designed specifically to do the job.

This emerging market in the U.S. civil aircraft market provided an opportunity for the Canadian aircraft industry to become involved. First, DHC had experience designing aircraft with the STOL technology. It was an emerging market niche with few competitors. Moreover, it satisfied the government, which “was motivated by a desire to make Canada internationally competitive in at least one field of technology-based manufacture.”²⁷ The new aircraft program was one the state could not help but react to. Subsidization of DHC’s design studies began in 1967. Canadair also received government support on its own design proposal for a revolutionary design with a tilting wing.²⁸

By the time the Science Council issued its report in 1970, though, the situation had changed. The government had committed itself to develop a new aircraft whose design was now well underway. However, the report advocated more than continued funding for a new aircraft. It suggested a major industrial program to “develop not only the aircraft, but a complete system

including ‘communications, air-traffic control, airports, ticketing, passenger handling, and other supporting services.’”²⁹ The Council made the argument that the country enjoyed a technological lead over other countries in developing this system concept, which was seen as innovative and thus justified even greater state involvement. Moreover, the report encouraged the government to fund a ‘made-in-Canada’ demonstration project that would prove to the world that the country had a winner.

This gave the government the justification it needed to react, once again, due to the weak policy environment. It provided an opportunity for the government to continue to fund the development of DHC’s new aircraft, by now known as the Dash 7. It was ample justification to satisfy the state’s desire to maintain both a high technology industry and employment in the aircraft industry. In fact, Stevenson implies the Council was illustrating reactive behaviour since political interests were behind the report.³⁰ However, DHC’s parent company was less than impressed that the state was funding a new aircraft that would compete with one being developed in its U.K. factories. Hotson notes that, while it was obvious the foreign owners were more concerned with their shareholders at home than the Canadian-based firm, “neither the president (of de Havilland) nor the Canadian government seemed to pay any attention.”³¹ The government reacted to this apparent lack of interest by the parent to finance the new program by funding it from state coffers.

The new aircraft program itself was not the only issue. The government also committed itself to fund the demonstration program of the innovative STOL system. Within five months, the Transport Minister approved the operation, which would see a state-financed air service operating on the Montreal-Ottawa-Toronto triangle. Airports were either built or modified in the three cities. Passenger terminals with new ticketing systems were constructed. High technology

air navigation systems were installed. Other equipment was purchased. A new company, financed by the state and operated as an arm of Air Canada, was established. Plus, the government bought six small Twin Otter aircraft from DHC. The Dash 7 program was behind schedule, so the state had to scramble to find this alternative.

However, the demonstration service was controversial. While parts of the federal government supported it, other elements of the bureaucracy doubted its utility. Representatives of both Transport Canada and the Canadian Transport Commission did not view the project with much enthusiasm, doubting it “would have any advantage over existing air transportation” methods. The provincial government of Ontario, however, did support it. Stevenson suggests this was really only because DHC was located in Toronto.³² Quebec was less enthusiastic since industrial offsets were negligible and the new service posed a threat to provincially supported airlines such as Quebecair and Nordair.

The demonstration service got underway in 1974 and continued for just less than two years.³³ The final report on the demonstration service, while beyond the scope of this study, was thoroughly debated. Opinions about it, and the innovative STOL system concept, ranged from failure to success. Perhaps most apt, though, is Stevenson’s suggestion that it was “oversold”³⁴ and only a device to support DHC and its new Dash 7 aircraft.

What is most important, however, is that the state reacted at every point. It jumped at a new market opportunity and invested in a new design. When DHC’s foreign parent would not supply financing, it did. Once the Science Council oversold a so-called winner, it jumped at the chance to provide support. As well, it tried to tie its industrial development efforts together with a controversial and troubled air transport policy.³⁵ Even worse, by 1972 it was obvious that DHC’s parent had decided to sell off the firm. The government had to react again to finance

construction of the first two Dash 7 prototypes, since it was under increasing pressure to preserve its investments in the industry, save jobs, and nurture the new program along.

Nationalization as an Answer to Crisis

At the end of the 1960s, Canada's aircraft manufacturing sector had several key characteristics. It was largely foreign owned, supported by the state with non-sector specific programs, and faced with a worldwide economic downturn.

The major airframe and engine manufacturers were foreign owned and in private hands. Fifty per cent of the medium-sized firms were also foreign owned, with only the smaller third-tier suppliers being predominantly Canadian owned.³⁶ The preceding years were marked by a significant decline in the production of military aircraft; however, there was a trend towards civil programs aimed at the export market. This latter trend was by no means assured of continuing without much concerted effort. In fact, the authors of the Green Report indicate that the pattern of decline was becoming obvious. External forces, including the economic recession, created a significant downturn in sales and investment confidence.

There was a precipitous drop in both sales and employment in the sector, just as the Science Council began its report. The slump continued for several years. Its significance may not have been entirely evident to the report's authors, since overall sector sales had moved up to \$750 million in 1968, the last year for which they had statistics. However, by 1971, the value of sales had dropped to under \$600 million. Employment figures illustrate even more dramatically the gravity of the situation. In 1967, the industry employed 48,000 people. By 1971, less than 29,000 remained. There was reason for the government to be concerned.

Another indication of tough times, one that the foreign owners of the major aircraft manufacturers and their investors were particularly sensitive to, was a drop in profit levels. In fact, profit was hardly a characteristic of the sector at the time. Between 1968 and 1971 the industry lost large sums and, despite a small rebound in 1972, the whole period from 1968 to 1974 produced a marginal \$3.5 million profit. This represented just 0.1 per cent profit on total sales during the period. Just how abysmal this was is demonstrated by the fact that the U.S. aircraft industry, affected by all the same economic forces, had a profit level near 3 per cent for the same period.³⁷

The major airframe manufacturers were hit hardest. Canadair's sales declined from \$150 million to \$40 million during the slump. Employment loss was precipitous, falling from 9000 to less than 1400. The company survived on some original design work and production under licence from foreign firms, but had to diversify into non-aviation products in a struggle to survive. The situation was hardly better at DHC. As Laux and Molot note, the situation was so bad that the two firm's foreign owners "chose to retrench by giving orders to their domestic plants and pragmatic lay-offs and repatriation of skilled workers from Canada paved the way for divestment in the early 1970s."³⁸

For its part, the Canadian government's record of involvement in the industry to this point was largely supportive of private interests, based on a disparate selection of industrial programs. Financing tools were typically general, R&D oriented and applicable to any industrial or scientific sectors.³⁹ The most important of these (to be examined in more detail later), the Defence Industry Productivity Program (DIPP), while of significance to the aircraft builders, was really a program open to any defence product. It was not a sector specific program. In this, the aircraft industry was not necessarily alone. Industry in general did not have an overall strategy,

although the government began to discuss one in 1972. However, in general, the government was not prepared to support anticipatory policy in industry, as indicated in early 1973 by the Minister of Industry, Trade and Commerce, who stated:

I expected I would have to spend a considerable part of [this speech] trying to dispel the expectation that, in today's complex and changing world, any government could be realistically expected to produce ... *an* industrial strategy ... In discussions earlier this year, and in different meeting with the provincial ministers of industry and my business advisory council last week, I found common agreement: developing *an* industrial strategy is impossible.⁴⁰

This absence of coordinated policy in the aircraft manufacturing sector, coupled with the lack of enthusiasm of foreign owners to invest in new programs, led to a situation whereby the government was consistently reacting just to preserve a core of experience. For example, Byers suggests that the opportunity to sell some military aircraft to Venezuela was more about keeping Canadair's essential staff together.⁴¹ Both politicians and bureaucrats became increasingly concerned as the industry, in which the state had invested heavily over the years, appeared to be shrinking to the point of disappearing altogether.

At the point of crisis, the government stepped in. In 1972, when it provided \$75 million funding for DHC's Dash 7 prototypes, it also negotiated an option to buy the company from its disinterested foreign parent. This was a 'stop gap' measure that provided a façade of stability. Behind the scenes, the government tried to find Canadian business interests that would buy DHC or Canadair. Air Canada and Canadian International Comstock Company, the country's largest construction firm, proposed to amalgamate the two under majority Canadian ownership. However, the government rejected it. Another inquiry came from the U.S. firm McDonnell Douglas. It, too, was rejected.⁴² There was little other interest in buying the companies.

Options seemed to be running out. At Canadair, the possibility of being shut down completely was becoming ever more likely.

As the crisis continued, the government was in the midst of implementing its new Foreign Investment Review Agency (FIRA), as part of its “measures to ensure greater Canadian control of the economy.”⁴³ Regulations pertaining to the program were tabled in March 1974. One of the state’s concerns was the aircraft industry. Just two months later, in response to the long-running and significant crisis in the sector and willing to take action during a time of increasing nationalism, the government announced it was exercising its option to buy DHC. It notified Canadair’s owners of its intention to buy that firm too. The crisis reached the point where a government that claimed its role was supporting the overall framework of the industry invoked an elevated form of direct involvement. It nationalized the firms.

The government rationalized the purchase of the two firms as an attempt “to ensure their long-term operation in Canada.”⁴⁴ Yet, at the same time it acknowledged that the purchases were temporary, a reaction on their part to save the two. Both would be returned to the private sector “when feasible.”⁴⁵ Laux and Molot suggest that while this may have been a goal, the short-term reaction was clearly based on a desire to “preserve technology, skilled jobs and export earnings they represented.”⁴⁶ However, this rationale was only part of the public justification for the purchases. Borins and Brown argue that, in the Canadair case, it had as much to do with a combination of strong political support from the Trudeau government, in general, and the Quebec caucus, in particular. Jean Chrétien, an advocate of acquisition while president of the Treasury Board, became particularly interested when named minister of Industry, Trade and Commerce (ITC). Also, the company was located in the Supply and Services Minister’s riding.⁴⁷

The implication is that there was more to nationalization than preserving jobs and technology. Votes, particularly in Quebec, were clearly an important factor.

Missed Chances for Rationalization

The government chose to buy DHC and Canadair to ensure their survival when faced with the crisis caused by the lack of interest from foreign owners. It followed this path when no other option appeared feasible. It justified the process, in part, by stating that it was doing so on a temporary basis. The ultimate goal was to return both companies back to private Canadian interests when appropriate. When the government announced the acquisition of DHC, the minister mentioned for the first time that it would offer both companies for sale as a package deal to interested Canadian parties. Until this time, it viewed the two firms as individual entities. However, Picker suggests that, after the acquisitions, the idea of rationalization “received only lip service.”⁴⁸ While several proposals were delivered to the government in the following months, nothing further happened. In fact, the government found out the idea was unpopular, particularly through the press.⁴⁹

As already discussed, the idea of consolidating the two companies had been suggested before the government bought DHC. However, the government rejected the deal. Another such opportunity arose in late 1975 during discussions related to the acquisition of new fighter aircraft for the military. The government used the negotiations to link the purchase to the rationalization of the industry. It received a potential winning deal when:

McDonnell-Douglas [sic] announced that if Canada procured [their aircraft] it would support a reorganized industry combining a subsidiary, Douglas Aircraft of Canada, with DeHavilland [sic] and Canadair to form Canadian Aerospace Ltd. Total employment would average 7400 personnel through to 1985, an increase of

about two thousand jobs ... Industry, Trade and Commerce was reported to favour the ... offer, and senior military officers preferred [their aircraft].⁵⁰

Soon after, McDonnell Douglas's competitor, Grumman Corporation, proposed a similar offer to restructure the industry that would offer 8000 new jobs. However, the government again passed on the opportunity to reorganize the industry and eventually bought a different aircraft type altogether.

Instead of action, it hesitated and decided to study the rationalization issue further. It asked Donald Golden, president of Telesat and a former Deputy Minister of Defence Production, to investigate the concept further. The government described his goal as being "an assessment of the options open to the [state] in connection with its ownership of these two companies, and their advantages and disadvantages." Golden released his memorandum report in 1978. His recommendations suggested that the idea of integrating the two manufacturers was not the best choice since they were effectively in different businesses. He reasoned that the optimal choice was to simply improve inter-firm coordination. However, the independent Lowe Report from the same year argued that rationalization was the only way to achieve stability in the industry.⁵¹

The state took no action, despite being presented with several such proposals over the previous years. The realization of consolidation came only after another decade of reactive policy. This included another major crisis, resulting in the loss of billions of tax dollars during the remaining mandate of the Liberal party until 1984, and further inconsistencies demonstrated by the Conservative governments after that.

Scandal Through 'Business as Usual'

Debate about Canadair's future was intense in the period leading up to the government's acquisition of the firm in 1976. During these discussions, the state and company management investigated several options. Canadair could be shut down, could become a parts supplier supporting DHC, or could proceed with a new design program. A 1975 report from Industry, Trade and Commerce (ITC) argued that the company likely could not do the latter since it lacked sufficient engineering staff. Canadair's management, however, lobbied for a new program. They proposed a new business jet called the Challenger that they would develop in less than three years for just over \$100 million. The board of directors accepted the plan, which they took to the government. Senior ITC bureaucrats were split over whether it could be done. However, minister Jean Chrétien felt the idea was a worthwhile gamble despite the risks and received Cabinet approval. Borins and Brown, as we have already seen, suggested these manoeuvres had as much to do with votes as preserving jobs. Additionally, the state accepted a risky proposition due to intense lobbying from private interests unwilling to see the company turned into a second-grade 'metal basher'.

The detailed history of the Challenger program, from the time the government bought Canadair at the end of 1975 until the Liberal government lost power in 1984, is beyond the scope of this study and can be found elsewhere.⁵² What is important to note is that, during this period, the program encountered a range of problems. Some of these were internal to Canadair, including design issues, production delays, and poor management decisions. Others were beyond the company's control. These included a downturn in the economy that affected many of the aircraft's customers negatively, as well as regulatory changes in the key U.S. market that led

to the cancellation of orders. However, of most concern to this analysis are the state's reaction to various inter-related problems that developed into a crisis.

Borins and Brown suggest that the problems began as soon as the government bought Canadair. Shareholder control, evident when the firm was privately owned, disappeared because the government did not adequately monitor the company over the initial five years of the program. This 'business as usual' period was marked by two means of monitoring progress. The first was the board of directors. Once the government bought the company it placed five representatives on the board, including one deputy minister and four assistant deputy ministers. Three of these left the position over the next year, and only one state representative remained until 1981. The second mechanism was an interdepartmental review committee consisting of representatives from a number of the state bureaucracies including ITC, Finance and the Treasury Board.⁵³

They argue that the Privy Council Office (PCO) reacted to rectify this situation only in 1981. By this time, the company had repeatedly over-run its projected cash requirements and key Cabinet ministers were alerted to Canadair's management, financial and strategic problems. Overall, the issue was that:

[m]anagement was not frank with the board of directors, and the board lacked expertise. In addition, the government, which chose the inexperienced directors, also failed to give them a clear sense of its objectives ... Thus the board was passive and accepting, rather than an active force in managing the company. [One director], the key link between the government and the company ... did not communicate ... to the ministers any concerns he might have had. The interdepartmental review committee ... also lacked expertise.⁵⁴

The implication of this was that the government had initially implemented inadequate controls of its new acquisition in 1976 and essentially left Canadair to operate fairly autonomously. The firm felt secure under state ownership. Laux and Molot agree with this assessment, noting that

“independent management had lead Canadair into a financial debacle.”⁵⁵ On top of this, the government was content to let the firm operate more as an independent private firm than a state-owned one because it “did not see itself responsible for policy direction.”⁵⁶

With the uppers levels of the government now alert to the problem, the PCO reacted. It hired independent consultants and initiated a series of task forces to investigate the situation. One recommendation was to introduce new communications and information gathering systems, something the government failed to do in 1976. Government members of the Canadair board were replaced with new representatives with stronger mandates to report directly to the government. Not convinced that the PCO recommendations were adequate, ITC took an even more reactive approach. It drew up a new agreement that would submit Canadair to a financing credit limit of \$1.35 billion, new reporting procedures, a new strategic plan, and deeper involvement in the Challenger program. This included “marketing, production, materials acquisition, and collective bargaining.”⁵⁷ While all of these reactive steps were taken, the situation did not improve. An independent analysis, done for the government by a consulting firm, demonstrated in 1982 that the financial and program difficulties were so serious that the government had no chance to recover its investment. Its critique implied that the government should stop the program and cut its losses.

While this may have been a rational solution based on private market thinking, the government chose another path. During this period of nationalist and interventionist economic policies, the Cabinet and the PCO devised a new mechanism to monitor government investments. In late 1982, Canadair, DHC and several non-aviation related public firms were placed under the management of the Canada Development Investment Corporation (CDIC), which operated essentially as a holding company to monitor activities of the firms. Laux and

Molot argue, however, that CDIC's real priority was not to monitor the investment in Canadair but to manage the financial crisis before the issue became public.⁵⁸ The implication is that political face-saving had more to do with the latest reaction than did more tax dollars. In fact, around the same time, the state approved \$200 million of new funding for Canadair to "retire debt and improve the company's debt-equity ratio."⁵⁹

Despite the best efforts of the government to keep the issue hidden, by 1983 a CBC expose brought the general public's attention to a scandal. Borins and Brown note that the "*Fifth Estate* episode sparked a flurry of critical commentary in the Commons and in the press" since it suggested the Challenger program was a disaster and could eventually cost taxpayers over \$2 billion.⁶⁰ Despite this, the government approved another \$240 million in equity for Canadair shortly thereafter. However, less than one month later, a report to the Standing Committee on Finance, Trade and Economic Affairs revealed Canadair had accumulated a staggering \$1.4 billion loss for the 1982 fiscal year. Once again the state made changes. Much of the company's upper management was dismissed and a new president was brought in from CDIC to come up with a new game plan to rescue the company.

The cleverly devised solution was one more example of reaction to a deep crisis. Both Canadair and the Challenger program were rescued through a creative arrangement that left the company debt-free and the government responsible to assume up the debt load.⁶¹ While the government rationalized the plan as "a business decision made for business reasons",⁶² Bosak exposes the fact that the firm's debt was liquidated "grâce à ce subterfuge comptable."⁶³

The entire episode, from the nationalization of Canadair to the final solution of the Challenger program's financial debacle, demonstrates a clear pattern of reaction consistent with Atkinson and Coleman's definition of reactive policy making. Borins and Brown argue that the

various steps were motivated primarily by political objectives, exacerbated by poor monitoring by the state and the continuation of crisis management even after failure was obvious. The government attempted to save the industry at any cost. That sum totalled \$2.4 billion dollars,⁶⁴ instead of the \$100 million Canadair management suggested the program would cost at the outset.

Ignoring Recommendations for Change

The government began examining a range of business sectors in 1978 as a result of a first minister's conference. The aerospace sector was one subjected to a special study. The subsequent Lowe Report, written by a task force comprising labour, management, and academic community interests, was the result of a consultative process involving all parties to evaluate existing policies and programs and generate new ideas to stimulate economic activity in the sector. The task force clearly formulated its approach based on assumptions about the character of the industry. The country was too small to be self-sufficient for all its needs; the domestic market was small so firms had to be selective in the products they chose to develop; and, to be financially viable, exports would become increasingly important. It recognized these factors would drive the need for change, particularly since foreign competition would increase.⁶⁵

The report outlines a number of strategic objectives aimed, first and foremost, at creating internationally competitive commercial products and services in specific areas where the industry could compete equally and with good prospects for sales. These include developing R&D and design skills aimed at exploiting commercial products; supporting defence needs; and developing sub-contract and after-sales service business. As well, regional development was

mentioned. However, implementation of these improvements would be challenging. The state needed to rectify several situations. There were problems financing new aircraft programs; the sector lacked the stimulus of domestic defence spending; there were increasing restrictions to technology transfer from abroad; and there was a lack of skilled manpower.

To effectively carry out development of the sector, the task force recommended that the government continue, and even expand, its support. This could be accomplished through several steps: mandate that a portion of the domestic defence budget be spent on the industry; improve the R&D framework including increasing the amount spent on it; negotiate improvement to international defence agreements to increase technology transfer; and provide financing to new aircraft programs; as well as a number of other issues relating to manpower, resources and modernization. For the civil sector, the task force urged the government to advocate continued liberalization and expansion of the trade in civil aircraft. Finally, new, formal methods for consultation between all interested parties in the sector needed to be expanded. Perhaps the key element as seen by the task force was “the implied commitment [by the state] of long-term financial and other essential support.”⁶⁶

Overall, the report advocated continued and increased participation by the state in the industry. In fact, it would be key to ensure stability and future growth. One of its glaring weaknesses, however, is its insistence on increased support from the defence budget. This is particularly surprising since the task force itself recognized that international civil programs were becoming an ever more important base on which to support the industry. However, they tried to justify their stance by arguing that Canadian industry should receive direct state support from defence spending, since competing foreign firms did as well. They acknowledged that the state’s DIPP program was helpful, it did not compensate for direct spending.

The government's response to these policy recommendations was delivered the next year.

Their document states:

[i]t is recognized that the implementation of policy initiatives indicated in these responses will, in many cases, take some time and that a few other policy issues have yet to be fully addressed. The Government will, therefore, be continuing to respond ... Finally, the Government recognized that in responding to the recommendations, not all participants ... will be satisfied.⁶⁷

Despite its positive tone, closer examination reveals this statement to be pure rhetoric. The report is remarkable in how it either dismisses or downplays most of the recommendations provided by its advisors. There was no commitment to increase defence spending. It was acknowledged as an issue, but would be considered at a later date. As well, the report's writers were content to simply say that government policy was to seek offset work. This ensured that foreign companies that received orders from the government gave a certain percentage of the work back to Canadian industry. No guarantees came for anything greater. As for other forms of financial support, the report indicated that an independent body would examine the issue and, once again, it would be reconsidered later. In the meantime, the DIPP program existed. Not only was the government saying it was not anxious to look at new ways to finance programs, it was telling industry that it had to settle for the status quo with an old defence-related program that was no longer entirely relevant, now that civil aviation was the cornerstone of Canada's industry.

Despite the growing importance of civil exports,⁶⁸ the government showed little enthusiasm to act on the recommendation in the Lowe Report to become actively involved in multi-lateral trade negotiations aimed at reducing import tariffs. It is the institution with role of negotiating international trade agreements. Since civil aircraft exports were already recognized to be vital to Canadian interests, strong action would seem to have been logical in this case. The

response to the Lowe Report's recommendation notes that the government agreed with the idea in principle. However, the implication that the Canadian delegation had been "briefed", "participating in" and "closely examin[ing]"⁶⁹ the U.S.-led proposed agreement gives the impression that the state was in no way being active in promoting the future of the industry. Finally, in other areas, including technology transfer, manpower and procurement policy, the document gives vague and weak promises to act.

Overall, the document gives a clear impression of a government unwilling to move quickly on recommendations to alter the status quo. There is no indication of a desire to act on the changing environment noted in the Lowe Report. In large part, the majority of recommendations the expert advisors delivered were essentially ignored. Even the top-level strategic objectives seem to have had little impact on the government. In fact, the response document clearly indicates the government's position. The state did not want to take the lead since it believed "that the principal actors in the process of economic development and growth must be the individual firms and its labour market."⁷⁰ Responsibility was being abdicated since the state did not care to act.

A further indication that little had happened came from another major assessment of the industry carried out by the Advisory Committee on Aerospace Development and issued in 1983. The document they produced for the minister of Industry, Trade and Commerce and Regional Industrial Expansion (the Lumley Report) aimed at providing information on development prospects for the industry. This included studying strategic implications and suggesting how the state could provide further support in areas such as manpower, procurement, finance and development assistance. In this respect, the report studied the areas examined in the earlier Lowe Report. However, the report seems to indicate that the state was ready to participate in

greater depth than before. It notes the “review is not only to delineate those areas where government can [foster growth] ... but also to assist ... in the decision as to Canada’s participation in major ... projects.”⁷¹ The record suggests, however, that the state was more likely to continue along the reactive policy path. In any case, the Liberal government in power was to have little time to act on these recommendations. The following year they were replaced in power by a Conservative government, albeit with no greater ability to act in any way other than a reactive manner.

In conclusion, we see many examples indicating the lack of a consistent and coordinated policy towards the aircraft manufacturing sector between 1965 and 1984. When the Science Council suggested a new, more anticipatory approach in response to changing times and an impending crisis, the government chose to ignore its advice. Since the foreign parents of the two main manufacturers were unwilling to continue to support their Canadian plants⁷², the government acquired them to ensure their survival. The lack of a coordinated policy led to situations where different elements of the bureaucracy worked at cross-purposes to one another while delivering services to the sector. As well, billions of taxpayer dollars were poorly invested or lost entirely. This gives the impression the state followed only a policy of supporting the sector at any cost. Generally, state intervention was firm-centred, bailouts were made based on poor market performance, policy was inconsistently applied, and communication between state and industry was poor. These are all clearly consistent with the characteristics of reactive policy-making as described by Atkinson and Coleman.

This happened despite the general political-economic environment at the time being one where planning, centralization, and nationalism were strong undercurrents to the development of

policy. In fact, the combined effects of high unemployment and rampant inflation, a phenomenon commonly referred to as stagflation, characterized the period. The government battled these problems individually early on. However, as their efforts demonstrated little progress, they began to centralize government efforts and introduce more invasive measures by the mid-1970s. Gollner and Salée argue that this strategy, while attempting to deal with continuing economic problems, also provoked a backlash. There was a counter-reaction to the size and influence of state power.⁷³ In late 1984, this led to a regime change in the government, one influenced by changes in the western economic and political ideology.

NOTES TO CHAPTER 3

¹ Rénald Fortier, “Intervention gouvernementale et industries aéronautique: l’exemple canadien, 1920-1965,” Ph.D. dissertation (Université Laval, 1990), 362.

² Since Fortier placed significant emphasis on the defence aspect of the aviation industry, he used T.S. Axworthy’s model of an idealized defence policy process to help formulate his ideas. See Fortier, 7-9. The work extends from T.S. Axworthy, “Soldiers Without Enemies: A Political Analysis of Canadian Defence Policy, 1945-1975,” Ph.D. dissertation (Queen’s University, 1979).

³ The quote reads: “we examine all aircraft production programs in Canada ... as well as the debates and controversies which surround them ... to then develop some general hypotheses from these empirical data.” See Fortier, 25. For further explanation of the methodology, see also 21-28.

⁴ The quote reads: “the only true reason which justifies the creation of a national aerospace industry therefore lies within the military sector. The survival of the state depends on it.” See Fortier, 629.

⁵ The quote reads: “the need for aircraft generated by Canada’s entry into war in 1939 quickly demonstrated the poor situation in which the country’s aeronautical industry found itself.” See Fortier, 49.

⁶ This is a controversial topic. The story of Avro Canada and its products, especially the CF-105 Arrow fighter aircraft and the C-102 Jetliner commercial airliner, have become part of the mythology of Canadian aircraft and aircraft manufacturing history. Many of the books written on the subject have been far from unbiased and neutral. Neither of these aircraft entered service. The Arrow has been the subject of many books glorifying its history and potential; however, little has been written about how costly the program had become. For one example of a more balanced academic approach see Russel Steven Paul Issinger, “The Avro Canada CF-105 Arrow Programme: Decisions and Determinants,” Masters thesis (University of Saskatchewan, 1997).

⁷ de Havilland was affected negatively by the end of these hostilities largely because important aircraft orders were coming from the U.S. The firm benefited from the two conflicts due to increased sales of its products. It received orders from the U.S. forces for a large number of its aircraft during the 1950s and 1960s. The Beaver aircraft (known as the L20 in U.S. service) flew in Korea as a general transport and medical evacuation aircraft. Some 100 Otter transport aircraft (known as the U-1A) were used in Viet Nam along with the Caribou transport (known as the C-7) alongside the Beaver as well. For further details see Fred W. Hotson, *The de Havilland Canada Story* (Toronto: CANAV Books, 1983), 114-118 and 158 in particular. A small number of Canadair-built aircraft saw service in Korea. Pickler and Milberry note that 60 early Sabre 2s were supplied to the USAF in Korea [and the] American pilots who flew [them] were impressed by their excellent performance ...”. See Ron Pickler and Larry Milberry, *Canadair: The First Fifty Years* (Toronto: CANAV Books, 1995), 94.

⁸ The quote reads: “Canada, in effect, has never had a global aerospace policy ... It is part of more or less formal alliances which significantly limit its freedom of action. These restrictions, linked to a breath-

taking rise in the price of materiel, as well as to the economic and military integration of Canada and the United States, explains the gradual decline of Canada's aerospace industry after 1959." See Fortier, i.

⁹ However, as noted earlier in Chapter 2 (see note 23), the earlier Science Secretariat had been formed in 1964.

¹⁰ Kristian S. Palda, *The Science Council's Weakest Link* (Vancouver, BC: The Fraser Institute, 1979), 2-3.

¹¹ J.J. Green, *Aeronautics – Highway to the Future: A Study of Aeronautical R&D in Canada*, Background Study for the Science Council of Canada, Special Study No. 12 (Ottawa: The Queen's Printer, 1970), 102, 6-7.

¹² Green Report, 5.

¹³ Green Report, 32.

¹⁴ Green Report, 5, 19.

¹⁵ Green Report, 16

¹⁶ Green Report, 18.

¹⁷ Green Report, 65-67.

¹⁸ Garth Stevenson, *The Politics of Canada's Airlines: From Diefenbaker to Mulroney* (Toronto, Buffalo, and London: University of Toronto Press, 1987), 73, 68-69.

¹⁹ Joop Gerritsma, "The Saunders ST-27," *CAHS The Journal of the Canadian Aviation Historical Society* 35 no. 4 (Winter 1997): 142-143.

²⁰ Gerritsma, 143.

²¹ Gerritsma, 146.

²² Stevenson states that "[w]ith the state of air transportation in Manitoba and Saskatchewan *becoming a political embarrassment* Prime Minister Trudeau promised 'a new third-level air carrier system' for the provinces." See 79. This author's italic emphasis. That the pledge was made with the election in mind also comes through in Stevenson's comment that "Trudeau promised 'a new third-level carrier system' for Manitoba and Saskatchewan during the 1974 election campaign. Although the *Liberals did reasonably well in both provinces, nothing was done to redeem this promise* until Otto Lang became Minister of Transport" in 1975. See 101. This author's italic emphasis. Stevenson adds that Lang was "Saskatchewan's representative in the cabinet and the rising star of western Liberalism." See 102.

²³ Stevenson, 96.

²⁴ This total is based on information in Gerritsma. He notes the company received \$32 million from MDC, \$6 million from the Manitoba government, plus all federal government financing which reached \$7 million at least. Also, Molson says the Manitoba government paid down all outstanding debts, although a small amount of funds were recouped with the sale of assets.

²⁵ Stevenson, 112.

²⁶ See Hotson 1983, 189-192, for further details of these events, as well as a description of the U.S. demonstration programs during the 1960s.

²⁷ Stevenson, 116.

²⁸ Hotson 1983, 206.

²⁹ Stevenson, 112.

³⁰ See Stevenson, 113. He notes the Science Council report's "authors had apparently seen the unpublished report of an interdepartmental committee on the deHavilland [sic] STOL program, which had argued for continued government support."

³¹ Hotson 1983, 193.

³² Stevenson, 116-117.

³³ See Hotson 1983, 199, for details on the actual operation. Also see Stevenson, 117-120.

³⁴ Stevenson, 113.

³⁵ See Stevenson, 121-127, for a detailed examination of air transport policy and the establishment of STOL services.

³⁶ Department of Industry, Trade and Commerce, *Canadian Aerospace Manufacturing Industry, Sector Profile, Discussion Paper* (Ottawa: Department of Industry, Trade and Commerce, 1978), 6.

³⁷ *Sector Profile 1978*, 21-22, 12.

³⁸ Jeanne Kirk Laux and Maureen Appel Molot, *State Capitalism: Public Enterprise in Canada* (Ithaca, NY and London: Cornell University Press, 1988), 90.

³⁹ These non-sector specific programs included the Program for Advancement of Industrial Technology (PAIT); Industrial R&D Incentive Act Program (IRDIA); Defence Industry Research Program (DIRP); and the National Research Council's Industry Research Assistance Plan (IRAP). See Green Report, 51.

⁴⁰ Fred Lazar, "The National Economy: Industrial Strategy," in *Canadian Annual Review of Politics and Public Affairs 1973*, ed. John Saywell (Toronto and Buffalo: University of Toronto Press, 1974), 331.

⁴¹ R.B. Byers, "External Affairs and Defence: Canada's Military Posture," in *Canadian Annual Review of Politics and Public Affairs 1971*, ed. John Saywell (Toronto and Buffalo: University of Toronto Press, 1972), 305-306. Further evidence that this was a reactive move can be found in J.M. Treddenick and C.G. Galigan, "The National Industrial Aerospace Base Now and Tomorrow," Centre for Studies in Defence Resources Management, Report No. 10 (Kingston: The Royal Military College of Canada, 1986), 5-6. They note "[t]he CF-5, in particular, was a sop to the industry and its acquisition was hardly the result of either a carefully considered defence policy or a carefully considered development policy for the aircraft industry."

⁴² Hotson 1983, 214. See also Pickler and Milberry, 261, for an explanation of why Ottawa rejected the deal.

⁴³ Fred Lazar, "The National Economy: Foreign Investment," in *Canadian Annual Review of Politics and Public Affairs 1974*, ed. John Saywell (Toronto and Buffalo: University of Toronto Press, 1975), 411.

⁴⁴ *Sector Profile 1978*, 15.

⁴⁵ *Sector Profile 1978*, 15.

⁴⁶ Laux and Molot, 89-91.

⁴⁷ Sandford F. Borins and Lee Brown, *Investments in Failure: Five Government Enterprises That Cost the Canadian Taxpayer Billions* (Toronto: Methuen, 1986), 17-18.

⁴⁸ Pickler and Milberry, 262.

⁴⁹ Hotson 1983, 215.

⁵⁰ R.B. Byers, "External Affairs and Defence: Military and Security Issues," in *Canadian Annual Review of Politics and Public Affairs 1975*, ed. John Saywell (Toronto and Buffalo: University of Toronto Press, 1976), 299.

⁵¹ Department of Industry, Trade and Commerce, *A Report by the Sector Task Force on the Canadian Aerospace Industry*, Chairman, D.C. Lowe (Ottawa: Department of Industry, Trade and Commerce, 1978) Annex B-2, 17.

⁵² For example, see Stuart Logie, *Winging It: The Making of the Canadair Challenger* (Toronto: Macmillan Canada, 1992). This is a detailed business history of both Canadair and the Challenger business jet program and provides a thorough overview of all aspects of the program including the controversy. Other information can be found in Borins and Brown, Laux and Molot, and Pickler and Milberry.

⁵³ Borins and Brown, 60-61.

⁵⁴ Borins and Brown, 64.

⁵⁵ Laux and Molot, 90-91.

⁵⁶ Borins and Brown, 92.

⁵⁷ Borins and Brown, 66.

⁵⁸ Laux and Molot, 134.

⁵⁹ Borins and Brown, 124.

⁶⁰ Borins and Brown, 125.

⁶¹ For a clear explanation of the whole transaction see Olga Bosak, "L'aéronautique au Canada: trois grands projets révélateurs," in *Grands projets et innovations technologiques au Canada*, ed. Philippe Faucher (Montréal: Les presses de l'Université de Montréal, 1999), 196-197. A translation of the quote reads: "In 1983, Canada Development Investment Corporation re-evaluated Canadair and began a restructuring that ended on March 30, 1984 with the creation of a new subsidiary called Canadair Ltd. The old company became Canadair Financial Inc. The government gave \$310 million to Canadair Financial Inc., which invested \$155 million in Canadair Ltd. After this, Canadair Ltd. loaned Canadair Financial Inc. \$155 million interest free. Canadair Ltd. acquired all assets and equity of Canadair Financial Inc., leaving it with a debt with accumulated interest of \$1.1 billion. This liquidated Canadair Ltd.'s debt, which allowed it to carry on without massive loans and become officially profitable in 1984."

⁶² Borins and Brown, 127.

⁶³ The quote reads: "thanks to this accounting subterfuge." See Bosak, 197.

⁶⁴ Bosak, 197.

⁶⁵ See Lowe Report, 1 and 3, in particular.

⁶⁶ See Lowe Report, 4, for the quote. The recommendations are outlined on 2 and detailed in Section 5-12.

⁶⁷ Department of Industry, Trade and Commerce, *Response of the Federal Government to the Recommendations of the Consulting Task Force on the Canadian Aerospace Industry* (Ottawa: Department of Industry, Trade and Commerce, 1979), 2.

⁶⁸ The trend towards the decline of the domestic market and the increase in the export market is evident as early as the mid-1960s. Between 1963 and 1968 domestic sales declined from \$316 million to \$189 million. In the same period, export sales increased from \$234 million to \$561 million. Exports represented 75% of total sales in 1968 versus only 43% five years earlier. See Green Report, 32. That this was significant is indicated in the Report's statement that "[t]his is especially significant ... This orientation towards export sales represents a revolutionary change in the industry from its historic pattern, brought about largely by the changed climate ... This new climate has forced the industry to

export for survival ...” This author’s italic emphasis. The pattern remained consistent throughout the 1970s. The *Sector Profile 1978*, 2, states “[I]n the last decade, the Canadian industry has undergone a gradual conversion from an inward-looking supplier ... to a primarily export-oriented industry producing largely commercial products ...” By 1975 export sales surpassed the \$600 million mark, whereas domestic sales remained below \$200. Commercial and civil sales rose from \$187 million in 1963 to reach nearly \$500 million by 1975. This represents an increase from 34% to 68% of total sales. See *Sector Profile 1978*, 21, Annex A. Note that there is some minor inconsistency in these two sets of numbers. The data from the Green Report appears to be based on 1968 dollars, whereas that from the *Sector Profile* appears to be 1976 dollars.

⁶⁹ *Response 1979*, 16.

⁷⁰ *Response 1979*, 33.

⁷¹ Department of Industry, Trade and Commerce, *Aerospace in Canada – Outlook and Strategy*, Report of the Advisory Committee on Aerospace Development to Hon. Edward C. Lumley, P.C., M.P. (Ottawa, Department of Industry, Trade and Commerce, 1983), 2-1. Also note that Section 7-6 recommends the establishment of a helicopter industry in this country. It is debatable whether this constitutes an anticipatory or reactive step. My contention is that it is not anticipatory. The deal resulted from the needs of the military for new helicopters and was not part of a long-term strategy to establish a helicopter industry in this country. While the deal did happen, the event itself came about from a near-term opportunity tied in with offsets. Supporting this idea is the fact that the other recommendation, in the same section, for involvement in the 150-passenger airliner never happened and was not pursued. The implication in this case was a new Airbus commercial aircraft type. The closest the industry actually came to involvement with Airbus was the subcontract program for Airbus 330/340 components announced in 1988. Although a rewarding program, it is not nearly as significant as involvement in a total program, as suggested in the Lumley Report, would have been. Another interesting point about the helicopter deal revolves specifically around the Bell plant built in Quebec. The primary work done there is the manufacture and assembly of commercial helicopters. Design and assembly work is carried out and is extensive. However, the rhetoric about now having a helicopter industry in this country weakens when it becomes clear that the deal does not include the design or manufacture of transmissions and rotor sets, a key technology in the helicopter industry. Bell continues to design and manufacturer these elements in its U.S. plant. See www.vtol.org/history.htm for additional background.

⁷² As previously discussed, de Havilland’s U.K. parent, Hawker Siddeley, was uninterested in funding development of the Dash 7 and, due to declines in the market worldwide, focussed more on creating a new design in its home plant and its shareholders. Hotson notes that the conflict over the Downsview facility led to the situation where “for the first time in 42 years a major difference of opinion had arisen between the parent company and its Canadian branch plant ...” See Hotson 1983, 193-197, in particular. Also, see Logie, 20-23 for a discussion of both de Havilland’s foreign owner and the story of why Canadair’s U.S. owner, General Dynamics backed away from its Canadian branch plant. Pickler and Milberry supply further background on Canadair and General Dynamics. See 260-261, in particular.

⁷³ Andrew B. Gollner and Daniel Salée, “Introduction: A Turn to the Right? Canada in the Post-Turdeau Era,” in *Canada Under Mulroney: An End-of-Term Report*, ed. Andrew B. Gollner and Daniel Salée (Montreal: Véhicule Press, 1988), 13-14.

CHAPTER 4

THROUGH PRIVATIZATION AND PRIVATE OWNERSHIP (1984-PRESENT)

This chapter will probe whether state policy during the period from 1984 until today demonstrates any change in the way the state developed policy relating to the aircraft industry. Did it change to an anticipatory character? Or, did it remain generally reactive in nature? To do so, this chapter focuses on several key episodes involving the industry during a period characterized by privatization, private ownership and internationalization of the industry. As well, it will attempt to discern patterns indicated by state action in the international arena. Together, this information will illustrate that the state has acted in a manner consistent with Atkinson and Coleman's description of a reactive policy path. Before turning to this evidence it is important to provide some background on the rise of the new political context.¹

Changing Western Economic and Political Ideology

Historically, the economic policy of western liberal democratic countries evolved in favour of the use, or domination of, the private market economy as the driver of economic growth. The rationale for this belief was that the private market was a self-regulating entity and,

as such, private business could lead the economy without government involvement. The principles of this theory, commonly known as a *laissez-faire* concept, remained dominant in advanced economies until the depression of the 1930s. The massive shock caused by the economic collapse contributed to the rise of a different economic theory that was to dominate thinking until the mid-1970s.

This theory, which attained prominence in the work of British economist John Maynard Keynes², provided a framework for government management of the economy. It promised economic growth, full employment, price stability and a way to balance international payments. It also implied greater state involvement in the economy.³ These principles began to influence policy making in the period following the Second World War. At the same time, social democratic ideas were gaining popularity. The two forces created a new social democratic consensus that combined greater state intervention in the economy along with social redistribution for the greater good of society. Doern and Phidd note that these ideas were not challenged up to the 1970s, largely because of continued growth and prosperity in western economies. However, this changed once governments had difficulty dealing with stagflation using strategies based on Keynesian principles.⁴

The persistent problems allowed new alternative theories to receive support. One such concept was the monetarist view that argued the state actually caused the economic malaise. Governments attempted to regulate the economy but could not do it adequately since they were unable to properly understand market principles. The monetarists suggested the way to resolve the crisis was to reduce government involvement and allow market forces to lead the economy into recovery. Another view held that governments were stifling investment due to deficit financing, which placed debt burdens on future generations. The 'sound finance' school argued

that governments should manage debt the ways consumers did.⁵ These ideas, as well as other changes in economic thinking, came together in an ideology known as the ‘new right’ or ‘neo-conservatism’. These ideas began to be implemented in the dominant U.S. and U.K. economies by the Reagan and Thatcher governments of the late 1970s/early 1980s. Gollner and Salée note that ideas dominant in the new political discourse included “a growing commitment to a greater degree of economic laissez-faire, and to the enhancement of the individualization of the social sphere ... into policies of deregulation, privatization [and others].”⁶

Reacting to the Privatization Trend

Amid a new environment that was critical of centralization and nationalism, but supportive and open to neo-conservative economic ideology, privatization presented an opportunity for the Conservative party. They could use it for political purposes. The ruling Liberal party was severely damaged by the crisis at Canadair during the 1984 federal election. Requests for added financing for the troubled company, press criticism and the subsequent parliamentary inquiry over the Challenger affair all helped the Conservatives make political gains.⁷ They called for Canadair and DHC to be sold back to private interests. They garnered significant support from private industry and right-leaning voters by focussing on the rhetoric of privatization, despite the fact the Liberals had already reiterated its own desire to sell the firms back to private sector when they created CDIC. In the end, the Conservatives won the election.

The rhetoric of privatization helped the Conservatives during the campaign. Therefore, it made sense to use it again once in power to give the impression of action. Within a month of winning the election, the new Industry Minister, Sinclair Stevens, formally notified the press that

the two companies, along with a third non-aviation firm, would be privatized. Stanbury argues that if the government had a stated privatization policy the announcement would have indicated a reasonably well thought out process. But a formal privatization policy only came in 1987. When it did come, it contained five main elements. First, in the new economic environment, the state did not have to rely on ownership to promote policy; second, private firms served clients better; third, supporting public companies placed significant demands on state resources; fourth, private firms took more risk and adapted to change faster; and finally, state run firms were harmful to a market driven economy. However, this policy did not exist when the privatization of the aircraft firms was announced. Stanbury adds that there was “virtually no explanation or justification for the move.”⁸ The implication of this is that the state was being reactive.

In many ways, the desire to sell DHC and Canadair had much to do with the personal opinions of several key Ministers in the new Cabinet and the prevailing feeling about the aircraft industry held by the Conservatives in general. In 1979, during the short-lived Clark government, then president of the Treasury Board, Sinclair Stevens, attempted to initiate a process to sell off five public companies including the two aircraft manufacturers. He was a long-standing critic of DHC, once quoted as saying that “given the opportunity, he would have the ... plant torn down and paved over as a parking lot.”⁹ The new Finance Minister, Michael Wilson, believed “Crown corporations with a commercial value but *no ongoing public policy purpose* will be sold.”¹⁰ Borins and Brown add further credence to this idea in his suggestion that the Conservative government did not see airframe manufacturing as a strategic industry.¹¹ This suggests these Ministers did not see the sector as highly important to Canada.

Neither aircraft sector policy nor industrial policy considerations seemed to enter into the rapid announcement to sell. In particular, the government seemed to forget the impact that

foreign ownership had on the two firms in the first place that had led to nationalization. By early 1985, seven responses to Steven's announcement had been received, more than half from non-Canadian companies. The responses presented a variety of options, including acquisition of one or the other of the two, amalgamating them, or keeping them separate under a single management entity. As well, DHC's president urged the government to proceed with care. The company could not be sold to interests that were not fully committed to the industry's future. Despite this, the government announced in late 1985 that it was selling DHC to U.S. aerospace giant Boeing. Since the government was willing to look at any option and react to it, this suggests the government was operating without a long-term policy plan of its own.

The government reacted to the first good deal it saw without having developed a clear policy nor considered potential negative consequences. It caused an immediate uproar from the Liberal opposition in Parliament, which suggests the Conservatives were just giving the company away to a foreign firm and tossing away the taxpayers' investment. That the decision was a reactive one is clearly evident in Stanbury's assessment that:

[t]he government didn't want to pump hundreds of millions of dollars more into de Havilland and a Canadian buyer could not be found at least on reasonable terms ... [T]he federal government, in selling de Havilland to Boeing "grabbed a paltry amount of money and sacrificed unknown long-term possibilities in jobs, research, and exports as well as in profit."¹²

As for Canadair, the government had less success getting rid of it as quickly. It scrambled for ways to make the company look more attractive by purchasing twelve Challenger jets for the military. Most of these came from Canadair's unsold inventory, suggesting the deal was less about replacing existing equipment than improving the financial situation at the firm.¹³

No Plan Plus Quick Sale Equals Disaster

Following the initial furor over the sale of DHC to Boeing, the government remained optimistic about the firm's future. Since the belief was that private business could run the company better than the state, the obvious conclusion was that Boeing would take care of Canadian interests. This assumption was quickly proven wrong; the lack of clear policy once again led to the situation where the state had to act, in reactive fashion, to save the firm and preserve both employment and technology.

Boeing's ownership of DHC turned out to be a poorly thought out affair. After acquiring the company, it started to improve the Toronto-based plant. The new parent seemed generally supportive of the various aircraft manufacturing programs then underway, including an improved version of DHC's latest and most successful turboprop airliner, the Dash 8. Hotson notes this initial honeymoon period lasted just fourteen months. Boeing began seeking wage and working condition concessions from DHC's union shortly after the sale, in an attempt to place the Canadian company on equal footing with its American facilities. Objections led to a ten-week strike that contributed a situation where the foreign owner became "disenchanted with the purchase."¹⁴

However, the strike was not the only concern. Costs to modernize the plant were higher than initially expected. Boeing apparently felt this situation was partly the responsibility of its former owners, the state. They turned to the government for assistance and it reacted by providing \$116 million dollars of relief.¹⁵ Despite the cash infusion, Boeing continued its attempt to rationalize DHC to the detriment of both employment and production. Despite an initial upswing in both employment and production floor space used immediately after the

acquisition, there was an almost immediate drop soon after Boeing encountered the union and modernization over-run problems. In fact, by 1992 employment dropped precipitously to just over 3000 personnel. Production floor space use also fell continuously to around 1.5 million square feet. These figures were approximately 50 and 85 per cent, respectively, of the level they peaked at just after the acquisition.¹⁶

The government appeared content to watch the situation continue to deteriorate. By 1986, after selling Canadair to Bombardier, it no longer was directly involved in the sector. Yet, it ignored additional signs that not all was right at DHC. By 1988, Boeing elected to cancel production of two of the three aircraft being built there. Hotson argues that cancellation of the Dash 7 particularly, a program that the state had supported financially for the past twenty years, was not motivated by the lack of sales prospects. In fact, they were moving along well. He attributes its demise, along with that of its smaller sibling the Twin Otter, to the fact that Boeing had never been interested in anything other than the new Dash 8 aircraft program right from the beginning.¹⁷ On top of this, negative opinions about DHC expressed in the press alerted the public that Boeing's management was displeased with the firm.¹⁸

The government monitored the situation, a stance that almost proved disastrous. The problems with DHC reached serious proportions when Boeing announced in 1990 that it was going to divest itself of the Canadian firms. Boeing was responsible for the sale, but there were worries that DHC might be sold to any of a number of interest foreign companies. The concern was that these firms' motives did not adequately address Canadian issues, such as job protection and maintaining a high-technology skill base in the country. Right away the European firm ATR indicated its desire to buy DHC. However, it was DHC's main direct competitor in the turboprop civil aircraft market. If the acquisition went through, the fear was that the Dash 8

program might be halted altogether, bringing an effective end to the company. The deal fell through, in part due to “an editorial cry for a truly Canadian solution.”¹⁹

The future of DHC remained in limbo for another two years. Only then did the government finally step in. However, it would not intervene directly, but found an alternative solution involving the Ontario NDP government. This solution would involve Bombardier buying 51 per cent interest in DHC; the provincial government purchased the other 49 per cent.²⁰ While the federal government was able to stay out of this semi-nationalization, another level of the state intervened. A solution to this new crisis was public ownership once again, albeit at the provincial level.

When Winning Really Means Losing

These episodes clearly indicate that the Conservative government did not have a clear, comprehensive policy related to the two former public enterprises. They also did not appear to have a strategy for the sector as a whole, either. The announcement, in late 1986, that a Canadair-led consortium won a significant new contract indicates that the state continued to act on a firm-centred, rather than a sector-oriented, rationale. This is consistent with Atkinson and Coleman’s criteria that indicates reactive policy.

The controversy in this case involved the awarding of a system engineering support contract (commonly, but erroneously, referred to as a maintenance contract) for Canadian military CF-18 fighter aircraft. The heated competition was spread over several years, but it was eventually narrowed down to two consortia of Canadian-based firms battling for the valuable contract. The Canadair-led team included CAE of Montreal and Northwest Industries from

Edmonton. Bristol Aerospace of Winnipeg, whose parent company was in the U.K, led the other team.²¹

The announcement caused a public furor. The Department of National Defence (DND), the state agency responsible for the competition and evaluating bids, had apparently selected the Bristol-led team. It deemed that its technical proposal was the best on both cost and technical grounds.²² When the press first revealed that Canadair had won, Bristol's management team cried foul, claiming "DND had said that Bristol would get the contract."²³ The media, particularly in the west, attacked the Conservatives, suggesting this was another case of regional development issues being ignored by the state.

The timing of the announcement was curious. It came just over two months after the government announced the sale of Canadair to Bombardier. Moreover, the contract represented a significant influx of stable financing to the firm. The initial three-and-a-half year segment was worth in excess of \$100 million. On top of that, the deal represented an estimated \$1 billion worth of business over the expected service life of the fighter aircraft.²⁴ One implication of the deal was that the government gave it to Bombardier to help ensure long-term stability for the aircraft manufacturer of which they were disposing.

The debate in the press focussed largely on the issues of favouring Quebec over the west, as well as broken promises to the private consortium. However, the media missed the importance of another key point. The Conservative government evidently had no policy for the aircraft industry. It awarded the contract based on political gain rather than on a rationale stemming from DND's recommendation or any concept of what constituted the best future for the sector. This became evident when the government reacted to the press debate with an *ex post*

facto justification for giving the contract to Canadair. The Prime Minister himself stated belatedly that:

the government chose Canadair because it both builds and repairs aircraft. This is something its competitors do not do. Thus Canadair will be able to apply the expertise and state-of-the-art technology gained by repairing and maintaining the CF-18 to the production of aircraft in this country.²⁵

No doubt Bristol, as well as the other firms that entered the competition, would have been happy to know this was a requirement when the bid process was first let. However, it was more a feeble attempt to stem the controversy and had little to do with sector policy. What is evident in the award process is that there appears to have been some manipulation from within the political centre. The award was taken away from the firm with a superior bid and given to another company that required stability. The late justification of the move adds to the impression that clear policy strategy was lacking. Focus on the firm and steps taken for political motives are consistent with Atkinson and Coleman's description of ways to discern the nature of policy. It was clearly reactive.

The Rise of Internationalization

The episodes described so far relate experiences primarily involving actions internal to the Canadian economic and political environment during a time of privatization. However, the period under study was also subject to external forces in the form of internationalization. The global civil aircraft industry began to change in the late 1970s. However, the impact on the Canadian sector became evident more than a decade later, when external pressures for change

forced the state to react. Before exploring several episodes that illustrate this, it is first important to understand what the alterations in the international environment were.

Today's trading system has its origins in the 1944 Bretton Woods conference, during which western nations proposed a new economic and trading system for the post-war period. The system was shaped around an economy led by private interests. Generally, the state was expected to be non-interventionist. Three organizations were suggested to manage it. The International Monetary Fund (IMF) was essentially an international currency pool. The International Bank of Reconstruction and Development (later renamed the World Bank) was to manage long-term development investment. Finally, the International Trade Organization (ITO) was to devise and oversee international free trade rules. The ITO was not established, however, leading to the development of a pact known as the General Agreement on Tariff and Trade (GATT). The GATT framework aimed to liberalize investment flow, reduce tariffs, and eliminate other barriers to international trade, among other goals.²⁶

The problem was that the state began to play a growing role in the economy in the post-war period due to the rise of Keynesian principles, as previously discussed. Dunkley notes the impact this trend had on industrial sectors when he notes:

there has been an explosion of governmental regulatory activity for a wide range of developmental, structural, redistributive, welfare, environmental and general social purposes, much of it allegedly having direct or indirect effects upon trade. The rise of the interventionist state has also brought a plethora of more direct restrictions on trade and investment ranging from standard tariffs or quotas to a multitude of, often invisible, 'non-tariff barriers' ... including subsidies and other industry policy systems designed to promote industrial development.²⁷

The argument was that state involvement and tariffs hindered international trade.

Over the years, a number of multinational trade negotiations aimed at revising and increasing the reach of the framework. Among these was the so-called Kennedy Round, held

from 1964-1967, which aimed at cutting general tariffs by one-half. The 1972-1979 Tokyo Round was even more ambitious. It attempted to introduce legislation to reduce or remove tariffs on specific items. One of these was the Agreement on Trade in Civil Aircraft (ATCA), which aimed to further technological development on civil aircraft and foster expansion of international trade in the commodity. Importantly, however, signatories to the deal viewed “the aircraft sector as a particularly important component of economic and industrial policy” and accepted that there was “wide governmental support in this area.”²⁸

The ATCA pact paved the way for expanded globalization of the aircraft industry. It aimed to “achieve maximum freedom of world trade in civil aircraft, parts and related equipment” by eliminating customs duties and other trade barriers. Some of the key principles of the deal were that: signatories could not pressure buyers to purchase from a particular source; purchases had to be based only on price, quality and delivery schedule; and no inducements to sale/purchase which would discriminate against a particular supplier could be implemented.²⁹ The later Uruguay Round, held from 1986 to 1993, had further implications on the aircraft industry. Among the many issues concluded was the improvement of dispute mechanisms to make them more uniform and automatic, as well as implementation of a more stringent subsidy discipline.³⁰ Canada was particularly supportive because of its desire to improve market access for advanced technology and transportation equipment.³¹ Also, the round led to the establishment of the World Trade Organization (WTO), created from the GATT secretariat as of January 1, 1995.

Another key development in the international environment was the Canada-U.S. Free Trade Agreement (FTA) signed in 1987. While Canada was fully supportive of GATT, the arrangement contained certain weaknesses.³² A number of trade issues between Canada and its

largest trading partner, the U.S., remained unresolved. The government believed these could be best dealt with through a specific bilateral agreement that effectively supplemented GATT.³³ By negotiating the FTA, the government sought to secure and enhance access to the key U.S. market by reducing protectionism, eliminating tariffs and clarifying subsidy issues. This had implications on the Canadian aircraft industry because the U.S. was the primary market for business jets and regional airliners produced here.

As previously mentioned, the Canadian government played a minimal role in the formulation of ACTA, despite urgings in the 1979 Lowe Report. Throughout the 1980s, despite the changed external environment, the government did little to change the tools it used to support the aircraft industry, preferring to remain committed to the status quo. By the early 1990s, Canadian industry was a major supplier of civil aircraft to the world, particularly in the commercial airliner niche. When challenges to market dominance occurred, the government reacted to help save sales. As well, it was forced to find new tools to support the industry.

The Demise of DIPP

The government changed once again when the Liberal party, under Jean Chrétien, came to power in 1993. Its platform differed significantly from the Conservative messages of privatization and free trade. The new government focussed heavily on federal debt reduction. This was to have an impact on the aircraft industry when, in 1995, the government announced that the long-running DIPP program was to be cancelled as part of cost cutting measures.

The Conservative government of the time, under Diefenbaker, created the DIPP program in 1959, after entering into a bilateral agreement with the U.S. known as the Defence Production

Sharing Arrangement (DPSA). The deal was a result of uncertain defence policy, a realization that Canada could no longer be self-sufficient in supplying its own defence goods, and the ending of the Arrow fighter aircraft program. Treddenick and Galigan argue that it was an attempt by the government to “preserve what [defence] industry was left and maintain some form of nominal access to U.S. markets.”³⁴ The rationale for the program has also been described as one that “provided the opportunity for both defence industries to participate in U.S. and Canadian defence and procurement on a similar basis.” The deal had as much to do about trade as defence. Treddenick and Galigan suggest the deal was “essentially a free trade agreement in defence goods.”³⁵ In operation it was intended to maintain a rough balance of trade between the two countries. Clearly, both DPSA and the DIPP program that resulted because of it were intended for the defence industry as a whole, not specifically for the aircraft industry.

The DIPP program aimed to provide financial assistance to Canadian industry for R&D and modernization, and to establish Canadian industry sources the U.S. would access. The Lumley Report notes it helped establish Canadian companies as qualified suppliers to the U.S., helped with marketing studies, assisted with modernization projects, and financed R&D. It clearly illustrates that the intent of the program was focussed on “defence-related products” in general. While a large portion of the program funds were eventually used for aerospace projects, and assisted significantly, the program was clearly not set up largely for that sector.

DIPP program rules further illustrate the overall defence emphasis of the program when it was conceived. It states:

The primary objective of DIPP is to enhance economic growth through promotion of defence-related exports. The secondary objectives are: to provide a defence industrial capability. DIPP provides ... firms with the supportive environment to allow them to remain reasonably competitive.³⁶

These facts become important when discussing whether DIPP fits the description of reactive or anticipatory policy for the aircraft industry, which will be explored later.

However, the cancellation of DIPP is less contentious. Industry was a clear supporter of the program and its impact on the aircraft industry. Both the Lowe Report and the Lumley Report argued for the government to not only continue it, but to expand it. The former document called for greater applicability to benefit industry on new programs that would be “clearly identified in the national interest.”³⁷ The latter went further, suggesting the government tie DIPP into a more anticipatory policy approach stating “support for R&D through economic development programs such as DIPP should be based on *longer term sector plans*.”³⁸ Moreover, the report appears to indicate that industry was urging the government to alter the program to better suit a private orientation that would offer more innovation and longer-term results.

Despite this, the government terminated DIPP in a clearly reactive move with little consideration of the impact it would have. In fact, even Letovsky supports the idea that cancellation was reactive because it occurred:

largely due to political pressure on the federal government to reduce its expenditures. The Canadian aerospace industry, and in particular several high-profile prime and second-tier firms, made their dissatisfaction with the ... cancellation known, and threatened to relocate key R&D programs elsewhere unless there was some replacement for it. Ottawa’s creation of TPC can be seen to be a reaction to the unforeseen industry response to the ... decision.³⁹

In other words, the sector itself wanted a state-financed R&D support program. However, apparently without consultation or consideration of the needs of the sector, the government cancelled DIPP.

Troubles With TPC

In 1986, Treddenick and Galigan suggested that the FTA would require the government to find a new program to replace DIPP. They stated “programs which provide for the direct subsidization of defence exports, such as [DIPP, would] likely not be permitted under [the FTA].”⁴⁰ However, it was one decade later that the government finally acted on this knowledge. As we have already seen, the new program, TPC, resulted largely from a reaction to private industry pressure.

The new program, administered by Industry Canada, is defined as:

a technology investment fund established to contribute to the achievement of Canada’s objectives: increasing economic growth, creating jobs and wealth, and supporting sustainable development. [It] advances and supports government initiatives by investing strategically in research, development and innovation in order to encourage private sector investment, and so maintain and grow the technology base and technological capabilities of Canadian industry.⁴¹

The program was set up to support companies in areas considered to be related to advanced, or ‘leading edge’, technologies. One of these was the aerospace and defence sector.

The new program was a framework plan supporting a general range of technology sectors. In this sense it could be considered anticipatory to a large degree. However, the linking of aerospace and defence together once again leads to the conclusion that the government simply re-invented DIPP. Program criteria describe the aerospace and defence component of TPC as one that “encourages and supports the development and application of those technologies essential for the development of these sectors [and] involves projects that sustain and expand the technological capabilities of these sectors.”⁴² These are rather vague indications of what could

help the sector, and give no indication of long-term strategy. So, it is again debatable whether this program can be considered a strong example of anticipatory policy.

Be that as it may, the WTO notified the government three years later that the application of TPC funds to the aircraft industry, in particular to five specific regional jet programs, was inconsistent with WTO rules. This resulted from a Brazilian allegation that the support provided by the program to competitor Bombardier was illegal. The Canadian-Brazilian battle over regional airlines will be discussed later. However, the ruling forced the government to react and alter the configuration of the TPC program. To comply with the ruling, the government also had to cancel financial support of the five programs it was supporting, valued at over \$16 million. Included among the many changes made to the program was “to focus on promoting technological innovation and enhancing the technological capability of ... industry, rather than commercialization.”⁴³ The point here is that, not only had the government reacted when it created TPC, but it also framed it for commercial gain rather than technology development. Only when the WTO pointed this out did the state make the necessary changes.

Battle of the Regional Jets

After it acquired Canadair, Bombardier set out to expand the range of aircraft types it built. In 1987, it launched a program to build a lengthened derivative of the Challenger jet as a small jet airliner for use by regional airlines. The opportunity came as the structure of the air transport industry, particularly in the U.S., changed once again. Where smaller airlines had largely been independents that operated smaller propeller transport aircraft, the trend during the mid-1980s indicated consolidation into bigger entities, greater affiliation with major airlines, and

the potential to grow business by using jet transports that could fly longer routes and carry passengers in greater comfort.

Bombardier's Canadair Regional Jet⁴⁴ was the first to hit the market in 1992. The company dominated the business initially and consistently remained the world leader in deliveries to airlines around the world. However, Brazilian firm Embraer, already a well-established player in the turboprop segment of the regional market, took steps enter the market Bombardier essentially created. As has been seen already, the aircraft industry was a high priority for the Brazilian government, which had implemented strong anticipatory measures to ensure its success. It helped Embraer finance its own regional airliner, partly by defence acquisition of a military variant; ensured Brazilian airlines purchased the aircraft; and provided export subsidies. By 1996, when deliveries of the Embraer jet began, the Canadian government reacted by stepping in to protect Bombardier's market position.

Part of the problem was the ATCA pact, which the Canadian government had signed but had provided little input during its development. Foremost among these issues:

were measures to curtail distortion of international aircraft trade through procurement-related offset provisions and through government subsidization of the aircraft industry. In the case of procurements, despite the commitment of signatories to "best efforts" to forego offset requirements, in practice many governments proved unable to ignore the leverage that a major purchase of aircraft for a national airline ... provided them in re-directing aerospace supplier contracts to domestic firms. [Also] there was widespread disregard for the GATT disciplines [related to subsidies].⁴⁵

The Brazilian government had established just such an export subsidy program in 1991 to support sales of Embraer jets abroad. This plan was called PROEX.⁴⁶

Between the time the Brazilian government introduced PROEX, and when deliveries of the Embraer jets began five years later, the Canadian government did not take any steps to

resolve a trade issue that had potentially negative consequences. They were not unfamiliar with the issue, however. As already discussed in the introduction, the U.S. had challenged Brazil over the state subsidy issue years earlier. Plus, five years was undoubtedly long enough to understand the implications of PROEX on this country's aircraft manufacturing industry. Embraer was able to gain close to 150 orders and options from 18 airlines in nine countries by early 1985.⁴⁷ This increased substantially, shortly thereafter, when U.S.-based Continental Express announced it had selected Embraer's airliner in a deal representing a potential for 200 aircraft worth well over \$2 billion.

Only then, under pressure from Bombardier, did the government act.⁴⁸ Not only was the reaction late in coming; it turned out to have been a case of the government opening the proverbial 'Pandora's box'. It revealed weaknesses in the state's support programs for the aviation industry, some of which were illegal under WTO rules as well. Moreover, as the issue wore on, moves by the government again demonstrated it would do just about anything to support Bombardier in its battle for export sales.

The first intervention by the government in June 1996 cannot be characterized as strong. In fact, a press release from the Department of Foreign Affairs and International Trade (DFAIT) characterized it as having "expressed concerns" and "requested consultations" on the subject.⁴⁹ This sounds remarkably similar to the weak involvement of the state in the initial formulation of ATCA, as previously discussed. It took the government several months before it sent a letter to the WTO with the idea of establishing a dispute settlement panel. Between the time it sent the letter in June 1996 until June 1998, the government followed several bureaucratic channels in an attempt to settle the dispute outside the WTO framework.⁵⁰ These failed.

The Minister of International Trade finally acted more forcefully in July 1998 when he announced Canada was to ask the WTO to formally establish a dispute settlement panel because there was an impasse in state-to-state discussions. Rhetoric increased with his claim that “[t]he Canadian aerospace sector is being hurt by the PROEX program, and Canadian jobs are threatened.” However, it was not the sector, *per se*, but Bombardier that was affected. This was not sector-oriented strategy, but a firm-centred approach.

The submission to the WTO backfired immediately. Brazil responded with its own submission to the WTO. It challenged a range of Canadian programs used to support the aircraft industry. These included TPC, as well as export financing provided by the Export Development Corporation’s (EDC) Canada Account program. The dispute panel ruled in early 1999 that both TPC and the Canada Account were not consistent with WTO guidelines and must be changed or eliminated. The TPC case has already been covered previously. However, the EDC program is, perhaps, even more revealing.

The government arm introduced the EDC Canada Account in 1995 to support Canadian regional aircraft deals. It had been applied successfully to two winning contracts. As with the TPC program, the government again had to scramble for solutions to its reactive policy manoeuvres one again. The government first appealed the ruling, as it had done in the TPC case. Then, after due consideration, it quickly changed its mind. The implication is that the program was developed to offset the effects of PROEX and was covertly implemented to foster Bombardier’s jet sales. Interestingly, several months later, the Canada Account program was changed to ensure “all future ... transactions – for all sectors, not only those involving the regional aircraft sector – will be taken in accordance with” OECD disciplines.⁵¹ This is further indication that state action related only to one program and not the entire aircraft industry.

At the same time, the WTO also ruled that PROEX was an illegal export subsidy and must be withdrawn immediately. Over the next year, there were several attempts to get Brazil to comply, with no effect. In May, 2000, the Canadian government announced it would “ask the WTO for authorization to take appropriate countermeasures against imports from Brazil of up to \$700 million per annum” although it would not take action “until it ha[d] consulted with Canadians.”⁵² In August, 2000, the WTO dispute panel allowed Canada the right to apply \$344 million per year of countermeasures against Brazil. Following more negotiations with Brazil, the WTO granted Canada the authority to retaliate the following December.⁵³

The government again acted immediately. In January, 2001, the government matched Brazilian financing terms available to U.S. airline Air Wisconsin in a battle for 75 regional jets.⁵⁴ A DFAIT press release title makes a clear point: “Canada Reacts to Brazil’s Illegal Trade Practices”.⁵⁵ Needless to say, Brazil appealed again to the WTO, which ruled that Canada had returned to the illegal subsidy game. Again, Canada lost. The WTO gave the government four months to remove the subsidy given to Air Wisconsin. Moreover, the ruling stated that Canada broke trade rules consistently since 1996 in a number of deals to both U.S. and other international airlines. Once again, the WTO found the EDC Canada Account faulty.⁵⁶ Several months later, however, Canada provided a similar deal to Northwest Airlines in a deal for 150 aircraft potentially worth \$2.6 billion.⁵⁷

In January 2002, the dispute settlement body issued its final report on the Air Wisconsin deal, as well as two others, and indicated again that Canada’s financing did not comply with WTO rules. This time the government chose not to appeal the report and chose “to turn the page on [the] trade dispute and find a mutually acceptable solution with Brazil.”⁵⁸ The government elected to return to diplomatic channels and let Bombardier and Embraer return to face-to-face

market competition. As of the end of 2002, the issue has yet to be finalized, but the government has clearly stepped back from its reactive steps to resolve the issue.⁵⁹

Sector Framework Documents

In 1989, organizations such as the Science Council were still hard at work attempting to steer a course towards greater coordination between private and public interests to help Canadian industry renew itself and become globally competitive. The problem, as the Council saw it, was that despite the two parties making some progress, “the pace and scale of the effort [fell] short of what [was] required.” One method that the Council advocated was the development of sectoral innovation strategies. These strategies would improve the consultation process between the state and industry, as well as “build consensus on priorities and agenda for ... action.”⁶⁰

The federal government finally began to implement this idea over five years later. By 1996, Industry Canada released the first part of a planned two-part report *Aircraft and Aircraft Parts: Part 1 – Overview and Prospects*. The Sector Competitiveness Frameworks program that led to the report being issued was to “provide comprehensive analyses of policy issues cutting across all sectors [including] investment and financing, trade and export strategies, technological innovation” and other issues. The first volume, containing a descriptive overview of the sector, was to be followed by another outlining a framework for future coordinated action. The federal government arranged for this to be done by a public-private working group focussed on Ontario as a pilot project. They delivered their *Canadian Aircraft Design Manufacturing and Repair and Overhaul Technology Road Map* (TRM) that year.

The TRM was an attempt to look forward to what might be required for the aircraft industry in the 2001-2005 timeframe. However, the weakness of the document is that it is cursory and provides only a list of possible technology needs that had been determined from an analysis of market demand. It took another four years before the concepts and ideas of the Ontario pilot project were integrated into a *Canadian Aerospace and Defence Technology Framework* document issued to supplement the work being done by TPC. Unfortunately, this new document provided no more strategy for the industry than the Ontario plan.

The objective of the new framework was:

to provide guidance to all [TPC] stakeholders on the factors to be considered in the development, submission and evaluation of TPC cases. Necessary to this process is the definition of technology phases and technologies that are considered key to the continuing contribution of the aerospace and defence sector to the achievement of Canada's national strategic objectives.⁶¹

While the idea and rhetoric of this statement may be in line with the concept suggested nearly fifteen years earlier by the Science Council, the report actually provides little strategy for long-term coordinated development. Essentially, what the document does provide is a wide menu of technologies considered to be of interest. None of the content of the document suggests how these are to be linked together, nor does it provide any ideas about the 'bigger picture' of what Canada's strategic objectives are and how they are to be accomplished. It lists technologies TPC will support with R&D financing. It is another planning document lacking the strategic qualities and foresight the Science Council advocated. This tends to indicate state action in the future will continue to be based on reaction instead of anticipatory decision making.

In conclusion, since 1984 there are many examples that indicate that a consistent and coordinated policy for the aircraft manufacturing sector did not exist. Privatization of Canadair

and DHC proceeded without adequate understanding of the consequences. When the DHC sale to Boeing floundered, the state again resorted to public ownership to resolve the crisis. Political manipulation was evident in contract awards. The government was often slow to support the sector, stepping in only when an issue reached crisis proportions. Throughout, the state remained oriented to a firm-centred and inconsistently applied policy consistent with Atkinson and Coleman's definition of reactive policy. As with the period from 1965 to 1984, the state appears to have followed a trend of supporting the sector at any cost. In fact, this pattern continues to this day. The provincial government in Quebec suggested in January 2003 that it is willing to provide additional funding to support regional jet sales by financially troubled Bombardier Aerospace.⁶² Despite the fact that the WTO has ruled against state loans to the firm, "Premier Bernard Landry said his government would do *whatever it takes* to keep Bombardier [competitive]."⁶³

NOTES TO CHAPTER 4

¹ Cockett would argue that the revival of economic liberalism, or the 'new right', can be characterized as anything but new. In fact, his study of the British case illustrates the "revival of the doctrine of 'economic liberalism' in ... intellectual life, and eventually political life, [occurred] from 1931 to 1983. He describes the concepts of economic liberalism and 'collectivism' as competing for prominence in cycles. He notes "[t]he second cycle began in the 1880s and ended in the mid-1970s, and can be divided into the period 1880 to the 1930s when the ideological battle against liberalism was fought and won, and the period of the 1940s to the 1970s when collectivism, premised on Fabianism and Keynesianism, was the ruling orthodoxy of all parties and governments. The third cycle began in the 1930s and is still in progress. The first part of the cycle ... was the period of the 1930s to the 1970s when the ideological battle for liberalism against collectivism was, again, fought and won; the second part of the cycle, the period of the late 1970s to the early 1990s, when the new political economy became the ruling orthodoxy of all parties and governments." See Richard Cockett, *Thinking the Unthinkable: Think-tanks and the Economic Counter-revolution 1931-1983* (London: Harper Collins Publishers, 1994), 2 and 6.

² Keynes was not the only contributor to the ideology of 'collectivism' that supplanted economic liberalism during the 1930s. As Cockett argues (see previous note), the alternative to economic liberalism developed over the period between 1880 and the 1930s. He notes that, in Britain, the "intellectual revolution was led by the Fabian Society, founded in 1884. See Cockett, 6. For more detail on the Fabians, Keynes and the liberal intellectual response to 'collectivism' see Cockett, Chapter 1, "Keynes and the Crisis of Liberalism, 1931-1939." Just two of the key economists who debated Keynes ideas were Lionel Robbins and Friedrich Hayek. For one history on Robbins see D.P. O'Brien, *Lionel Robbins* (Houndsmills, Basingstoke and London: The Macmillan Press Ltd., 1988). Two examples of material on the latter on Hayek and his debates with Keynes are Brian McCormick, *Hayek and the Keynesian Avalanche* (New York: St. Martin's Press Inc., 1992) and G.R. Steele, *Keynes and Hayek: The Money Economy* (London and New York: Routledge, 2001).

³ G. Bruce Doern and Richard W. Phidd, *Canadian Public Policy: Ideas, Structures, Process*, 2d (Scarborough, ON: Nelson Canada, 1992), 252.

⁴ Doern and Phidd, 250.

⁵ Robert Letovsky, "Public Policy and the Quebec Aerospace Sector," Ph.D. dissertation (Concordia University, 1999), 11.

⁶ Andrew B. Gollner and Daniel Salée, Introduction: A Turn to the Right? Canada in the Post-Trudeau Era," in *Canada Under Mulroney: An End-of-Term Report*, ed. Andrew B. Gollner and Daniel Salée (Montreal: Véhicule Press, 1988), 17.

⁷ Jeanne Kirk Laux and Maureen Appel Molot, *State Capitalism: Public Enterprise in Canada* (Ithaca, NY and London: Cornell University Press, 1988), 93-94.

⁸ William T. Stanbury, "Privatization and the Mulroney Government, 1984-1988," in *Canada Under Mulroney: An End-of-Term Report*, ed. Andrew B. Gollner and Daniel Salée (Montreal: Véhicule Press, 1988), 131.

⁹ Quoted in Fred W. Hotson, *de Havilland in Canada* (Toronto: CANAV Books, 1999), 288-289.

¹⁰ Laux and Molot, 191. This author's italic emphasis.

¹¹ Sandford F. Borins and Lee Brown, *Investments in Failure: Five Government Enterprises That Cost the Canadian Taxpayer Billions* (Toronto: Methuen, 1986), 142.

¹² Stanbury, 136. This comment includes a quote from Ron Graham, *One Eyed Kings: Promise and Illusion in Canadian Politics* (Toronto, Collins, 1986).

¹³ Borins and Brown, 128. They state that "[t]o increase the company's attractiveness to potential purchasers, the federal government bought up Canadair's remaining inventory of nine Challenger 600s for use by the Defence Department." Picker and Milberry clarify how some of these aircraft had ended up in Canadair's inventory. They note that "[f]our of the [Challenger] 600s were completed aircraft exchanged by TAG for four green (uncompleted) 601s. Another was the Ontario government's 600, exchanged for two CL-215 water bombers. Still another was the second pre-production aircraft [that] was unsuitable for conversion to a business aircraft configuration, so would be used by the Canadian Forces as an airborne electronic test bed." See 292.

¹⁴ Hotson 1999, 311-312.

¹⁵ Hotson 1999, 316.

¹⁶ Hotson 1999, 363.

¹⁷ Hotson 1999, 315.

¹⁸ See Hotson 1999, 315. The author notes that "Dean Thornton, head of Boeing's Commercial Aircraft Division in Seattle, visited Downsview ... [and] while being interviewed by the press, he freely admitted that [the] de Havilland Division was a "nightmare"."

¹⁹ Hotson 1999, 318-319.

²⁰ Hotson 1999, 322. Following five years under the co-ownership program and integration of DHC's operations with those of Canadair and its other aerospace units, Bombardier arranged to purchase the Ontario government's interest in DHC. This was to take place over a 15-year period starting in 1997. See Hotson 1999, 319.

²¹ At the time of this deal, Bristol was foreign owned. Magellan Aerospace Corporation, a Canadian-owned organization, acquired the company in 1997. For a history of Bristol see "Bristol Aerospace Limited: History" ([Winnipeg?]: Magellan Aerospace Corporation, 2000); available at <http://www.bristol.ca/History.html>; accessed 14 December 2002.

²² Martin Shadwick, "Military and Security Issues," in *Canadian Annual Review of Politics and Public Affairs 1986*, ed. R.B. Byers (Toronto, Buffalo, and London: University of Toronto Press, 1990), 215-216. The author states that the "Mulroney government declined this advice [from government experts] ... on the basis that Canadair ... was thus in a position to utilize more effectively the technology transfers that would accompany the [maintenance] program."

²³ Ron Pickler and Larry Milberry, *Canadair: The First Fifty Years* (Toronto, CANAV Books, 1995), 339.

²⁴ "Canadair Update," *Canadair Service News* 16, no. 1 (Spring 1987), 2.

²⁵ Quoted in Pickler and Milberry, 339.

²⁶ Johannes Overbeek, *Free Trade versus Protectionism: A Source Book of Essays and Readings* (Cheltenham, UK and Northampton, MA: Edward Elgar, 1999), 438. See also Graham Dunkley, *The Free Trade Adventure: The WTO, the Uruguay Round and Globalism – A Critique* (London and New York: Zed Books {distributed exclusively in the U.S. by St. Martin's Press}, 2000), 26-27.

²⁷ Dunkley, 9.

²⁸ World Trade Organization, *Agreement on Trade in Civil Aircraft* (World Trade Organization, 1986), 181 and 185; available at www.org/english/docs_e/legal_e/final_e.htm#civil; accessed 29 July 2002.

²⁹ WTO *Agreement*, 181, 183-184.

³⁰ Industry Canada, Aerospace and Automotive Branch, *Sector Competitiveness Frameworks – Aircraft Industry (Background Analysis)* (Ottawa: Industry Canada, 1995), Section 2, Part E – The International Trade Environment, 2; available at <http://strategis.ic.gc.ca/SSG/ad03632e.html>; accessed 11 October 2002.

³¹ External Affairs Canada, *The World Our Market: Canada, GATT and the Uruguay Round* (Ottawa: External Affairs Canada, International Trade Communications Group, 1987), 4. The implication here is civil airliners in particular.

³² Richard G. Lipsey and Robert C. York, *Evaluating the Free Trade Deal: A Guided Tour Through the Canada-U.S. Agreement*, Policy Study no. 6 (Toronto: C.D. Howe Institute, 1988), 2. The author states "[t]he Tokyo Round of tariff reductions under the General Agreement on Tariffs and Trade (GATT) has left Canada with what may be the worst of both worlds. When the reductions have been fully phased in, our new tariff will be too low to be an effective tool of an import substitution policy, yet we still do not have the unimpeded access to a mass market that facilitates an export promotion policy."

³³ Frank Stone, "Canadian-United States Economic and Trade Relations: Institutional Arrangements," in *The Legal Framework for Canada-United States Trade*, ed. Maureen Irish and Emily F. Carasco (Toronto, Calgary, and Vancouver: Carswell, 1987) 7-8. Also see External Affairs Canada, *The Canada*

– *U.S. Free Trade Agreement: Synopsis* (Ottawa: External Affairs, International Trade Communications Group, 1987), Introduction.

³⁴ J.M. Treddenick and C. G. Galigan, “The National Industrial Aerospace Base Now and Tomorrow,” Centre for Studies in Defence Resources Management, Report No. 10 (Kingston: The Royal Military College of Canada, 1986), 5.

³⁵ Treddenick and Galigan, 16.

³⁶ From *Defence Industry Productivity Program, Terms and Conditions*, (Ottawa: n.p., 1986), quoted in Bob MacDonald, “The Canadian Aerospace Industry and the Impact of Federal Assistance,” Executive MBA research report (Concordia University, 1988), 26.

³⁷ Department of Industry, Trade and Commerce, *A Report by the Sector Task Force on the Canadian Aerospace Industry*, Chairman, D.C. Lowe (Ottawa: Department of Industry, Trade and Commerce, 1978), 6.

³⁸ Department of Industry, Trade and Commerce, *Aerospace in Canada – Outlook and Strategy*, Report of the Advisory Committee on Aerospace Development to Hon. Edward C. Lumley, P.C., M.P. (Ottawa: Department of Industry, Trade and Commerce, 1983), 7-2. This author’s italic emphasis.

³⁹ Letovsky, 164.

⁴⁰ Treddenick and Galigan, 17.

⁴¹ Industry Canada, “Technology Partnerships Canada: What is TPC?” (Ottawa: Industry Canada, 2000), 1; available at <http://strategis.ic.gc.ca/SSG/tp00167e.html>; accessed 16 October 2002.

⁴² Industry Canada, “Technology Partnerships Canada: Eligibility Criteria” (Ottawa: Industry Canada, 2000), 2; available at <http://strategis.ic.ca.ca/SSG/tp00193e.html>; accessed 16 October 2002.

⁴³ Department of Foreign Affairs and International Trade, “Canada Announces Measures to Comply with WTO Ruling on Regional Aircraft Subsidies”, press release, November 18, 1999, 1 and 4; available at http://webapps.dfait-maeci.gc.ca/minpub/...on.asp?FileSpec/Min_Pub_Docs/10221.html; accessed 9 November 2001.

⁴⁴ There has been an important change in terminology since Bombardier launched its small jet airliner program. Originally, their aircraft was called the Canadair Regional Jet, the regional jet in this case being a proprietary term. With time, it became generic and is now used colloquially to refer to all small jet aircraft in the particular size range and aimed primarily at regional airline operation. Bombardier has changed their model designation and now refer to the aircraft as the Bombardier CRJ series of aircraft. Embraer uses the EMB series of designations.

⁴⁵ *Sector Competitiveness Frameworks*, Section 2, Part E – The International Trade Environment, 1.

⁴⁶ PROEX is an acronym for *Programa de Financiamento às Exportações*. See Department of Foreign Affairs and International Trade, “A Summary of Canada’s Submission in the Case Against the Brazilian PROEX Programme (Submitted to the WTO Panel on November 3, 1998),” Trade Negotiations and Agreements, Dispute Settlement, Panel Cases to which Canada is a Party, Canada/Brazil WTO Panels – Aircraft, 1; available at http://www.dfait-maeci.gc.ca/tna-nac/air_proceedings-e.asp; accessed 23 February 2001. This document describes the program in the following manner: “PROEX payments are financial contributions by the Government of Brazil that ... reduce the cost of such aircraft to the purchaser [to] lower the rate of interest paid by the purchaser ... [or] in the form of a lump-sum payment that reduces the cost of the aircraft by at least 13 to 15 percent ... The payments are made even when financing is done by a non-Brazilian entity ... even in circumstances where the purchaser borrows funds ... [and] even where elements of financing are guaranteed by non-Brazilian multinational corporations. The payments are not made in return for any goods and services. They payments are never repaid [and] operate directly to increase the exports of Brazilian regional aircraft.”

⁴⁷ *Jane’s All the World’s Aircraft, 1995-1996*, Editor-in-Chief Paul Jackson (Coulson, Surrey, U.K.: Jane’s Information Group Limited, 1995), 21.

⁴⁸ Dispute Settlement 1998, 2, notes: “PROEX subsidies to Brazilian regional aircraft have resulted in serious distortions in the regional aircraft market – the market for jet and turboprop aircraft that have between 20 and 90 seats. The significant reduction in the cost of Brazilian regional jet aircraft in a highly competitive market has resulted in a five-fold increase in the market share of exported Brazilian regional aircraft over the past two years and the displacement of not only other regional jet aircraft, but also turboprop aircraft in the market.

⁴⁹ Department of Foreign Affairs and International Trade, “Canada to Ask for WTO Panel on Brazilian Export Program,” press release no. 170, July 10, 1998, 2; available at http://www.dfait-maeci.gc.ca/english/news/press_release-98_press/98-170e.html; accessed 9 November 2001.

⁵⁰ These included, at various times, meetings between Brazil’s Foreign Minister and Canada’s Minister of International Trade; the appointment of special envoys; and attempts to negotiate a deal outside of the WTO framework. See “Canada to Ask ...”, 4.

⁵¹ “Canada Announces ...”, 1-2

⁵² Department of Foreign Affairs and International Trade, “WTO Confirms Brazilian Trade Subsidy is Still Illegal”, press release no. 97, May 9, 2000, 2 and 4; available at http://198.103.104.118/minpub/Publications.asp?FileSpec=/Min_Pub_Docs/103303.html; accessed 23 February 2001.

⁵³ This grant by the WTO allowed Canada to impose a range of countermeasures against Brazil. Associated with the whole controversy was the (in)famous Brazilian beef ban. The Canadian government imposed the ban “on Brazilian beef products, citing a “theoretical risk” that they had been infected with mad-cow disease. Brazil contended the ban ... had more to do with the burgeoning [regional jet] trade war than any legitimate health concern.” See “Brazil to Go Ahead With Challenge to Canada’s Export Subsidies,” *Globe and Mail* (Toronto), 2 March 2001.

⁵⁴ “CRJ Triumphs at Air Wisconsin,” *Flight International*, 30 January-5 February 2001, 6. The article states: “[a] major factor in the Air Wisconsin decision was the Canadian Government offer to underwrite 75% of funding and the Quebec authorities another 10% to counter Brazilian Proex [sic] financing.”

⁵⁵ Department of Foreign Affairs and International Trade, “Canada Reacts to Brazil’s Illegal Trade Practices”, press release no. 100, July 9, 2001; available at http://webapps.dfaitmaeci.gc.ca/minpub/...on.asp?FileSpec=/Min_Pub_Docs/104368.html; accessed 9 November 2001.

⁵⁶ “Canada Ordered to Stop Cut-rate Jet Loans,” *Globe and Mail* (Toronto), 20 October 2001.

⁵⁷ Bombardier Aerospace, “Bombardier Signs With Northwest Airlines for 75 Firm CRJ Regional Jets”, press release, July 9, 2001, 1; available at http://w.../pressleft.jsp?group=3_0&lan=en&action=view&mode=list&id=1206&sCateg=nul; accessed 9 July 2001.

⁵⁸ Canada, Department of Foreign Affairs and International Trade, “Canada Will Not Appeal WTO Report in Aircraft Dispute”, press release no. 17, February 19, 2002; available at http://webapps.dfaitmaeci.gc.ca/minpub/Publication.asp?FileSpec=/Min_Pub_Docs/0493.html; accessed 14 December 2002, 1.

⁵⁹ The government was not the only one to be reactive in the case. Bombardier was as well. As part of its pilot training program for the Department of National Defence, the company had originally ordered advanced turboprop training aircraft from Embraer. When the dispute began, Bombardier cancelled the order and obtained replacements from a U.S. firm. In another incident, Bombardier was not averse to trying to silence the academic community in the wake of criticism over the Brazilian countermeasures, in particular the beef dispute. See “Bombardier Lashes Out at Professors,” *Globe and Mail* (Toronto), 12 January 2001, and “Bombardier Rebukes Western Professor,” *The Gazette* (University of Western Ontario), 19 January 2001; available at <http://www.gazette.uwo.ca/2001/19/News4.htm>; accessed 14 December 2002. The first of the two professors to criticize the government (but not, however, Bombardier itself) was Pierre Lemieux from the Université de Québec à Hull. He published in the *Wall Street Journal* and elsewhere. See his article, “Ottawa Wins a Jet Battle, But Canadians Lose,” *Wall Street Journal* (New York), 15 December 2000; available at <http://www.pierrelemieux.org/artjet.html>; accessed 14 December 2002. The second was Dr. Ted Hewitt from the University of Western Ontario. See his article “Brazil-Canada: Trade War Looming?,” *InfoBrazil*, 11-17 November 2002. Available at http://www.infobrazil.com/Conteudo/Front_Page/Opinion/Conteudo.asp?ID_Noticias=3998&ID_Area=2&ID_Grupo=9; accessed 14 December 2002. A third commentary is that offered by Adhemar Altieri, who argues that neither the Canadian nor Brazilian governments should have become involved and that the two companies should have been left to “duke it out”. See “The Brazil and Canada. Why Can’t They Understand Each Other?,” *Brazzil*, March 2001; available at <http://Brazzil.com/polmar01.htm>; accessed 14 December 2002.

⁶⁰ Guy P. Steed, *Not a Long Shot: Canadian Industrial Science and Technology Policy*, Background Study for the Science Council of Canada, Background Study No. 55 (Ottawa: Minister of Supply and Service, 1989), 103 and 111.

⁶¹ Industry Canada, Aerospace and Automotive Branch. *Canadian Aerospace and Defence Technology Framework* (Ottawa: Her Majesty the Queen in Right of Canada, 2000), 1; available at <http://strategis.ic.gc.ca/aerotechframework>.

⁶² “Bombardier, Quebec in Loan Talks,” *Globe and Mail* (Toronto), 22 January 2003.

⁶³ “Pettigrew Hopeful Jet Dispute Can be Resolved,” *Globe and Mail* (Toronto), 29 January 2003. This author’s italic emphasis.

CHAPTER 5

CONCLUSION

In 1980, the state-run National Film Board (NFB) released a documentary titled *Challenger: An Industrial Romance*. The film spoke enthusiastically about Canadair's future, particularly its new Challenger business jet program, and hinted at the glorious way ahead for the country's aircraft industry. Just three years later, the *Fifth Estate*, a CBC television program, aired a scathing attack on the company, the aircraft and, in less direct terms, government involvement in the business. In many ways these productions, aimed at the general public, are a visual study of the state and the policy it has had – or has not had – for the aircraft industry.

How the idea for the NFB production got started might remain a mystery. However, the aim of the production, in retrospect, can be clearly perceived. For all intents and purposes, it is not an unbiased documentary about a new Canadian product from a well-known, high technology firm. It is a tale with a marketing purpose, full of rhetoric and upbeat episodes aimed at selling a product in which the government of the day had a great vested interest. That the NFB was involved may come as no surprise in this instance. The organization had a long history of using film to promote state educational initiatives and messages.¹ *Challenger: An Industrial Romance* was intended as a sales tool. It is indicative of the government of the time, using any

tool in its arsenal to support a program for which it had ultimate responsibility and in which it had supported by investing large sums of taxpayer dollars. It was an opportunity to promote the newest Canadian success story that the state could not pass over. It had to help to make it come true. Yet, the title implies even more. This was not just about business. It was about a dream of glory. The state was out to make sure everyone – potential customers and the public – knew about it.

Of course, the CBC production brought the myth and the dream back to earth. It forced the state to take drastic action. As already seen, not only were political reputations at risk. The government of the day had to scramble – to react – to put the aircraft program back on track, to recover, and to save an industry in crisis.

Two film productions, one supposedly a documentary and the other investigative journalism, help indicate the nature of state policy for the aircraft industry. It has been weak, unplanned, short-term, and exposed to crisis. Perhaps this is art and culture intended for society that can be characterized as representing aspirations and reality.

From a more dispassionate and academic point of view, however, how can state support of the aircraft industry really be placed into perspective? The first step to establishing conclusions is to examine what, if any, indications of government policy for the sector exist. An examination of what the state and other advisory organizations have said about policy for the sector during the period under study provides one frame of reference for comparison. It is fair to measure performance against what has been promised. Doern and Phidd quite correctly argue that industrial policy can include just about any action the state has taken to influence sectors or key firms.² In other words, policy is more than written statements. It is also about what various

actors do to affect the industry. Therefore, what statements can be found that indicate how the government defines its role in policy for the aircraft industry?

The 1978 Sector Profile, developed during Liberal rule in a largely nationalistic period, provides us with these statements:

In the past, government support has included the government defence procurement policy, EDC financing and guaranteed loans and international trade and marketing services. Contribution of this multifaceted government supports to the Canadian aerospace industry is seen as an underlying necessity to the achievement of industrial stability.³

and

Economic industrial stability within the aerospace sector is a principal objective of the government. Industrial development strategy to achieve this stability includes:

- Support of selected industrial capabilities in research, design, development and production of products with good prospects for exploitation in domestic and export markets;
- Encouragement of industry to develop the technological capabilities to meet the support needs of national defence;
- Encouragement to achieve an internationally competitive sub-contracting base and in-plant repair and overhaul capability;
- Promotion of a satisfactory and economically viable regional distribution of industrial activity.⁴

The general implication of this is that the state's role and policy for the aircraft industry is to have a range of supporting programs aimed at helping the sector remain stable while growing. State involvement has largely to do with looking after the framework and remaining in the background.

The idea of framework was also a theme contained in a 1985 Memorandum of Understanding (MOU) developed between the Conservative government and the industry during a period characterized by heightened *laissez-faire* principles and the ideology of privatization. The MOU had three objectives:

1. To ensure a secure, more certain environment in which firms in the industry can undertake medium to long term business development decisions;
2. To ensure a basis for joint action in priority areas of mutual interest; and
3. To ensure a mechanism for continuing dialogue between the industry and the government.⁵

At the same time, the Minister responsible for the sector stated that “the government and the private sector will combine efforts to address key issues and identify growth opportunities over the long term, while allowing each partner to concentrate on what it can do best.”⁶ In general, each of these statements is quite vague, even though they do hint at some cooperation between the state and the industry. In some ways, the statements point to the idea of somewhat closer ties between the two. However, clearly the language of the MOU is weak. MacDonald suggests the document indicates that the state was looking to remain supportive to industry and, therefore, stepped in only when the private realm asked them to. Its goal was to help “create a positive environment and framework for cooperation and further industry development.” He emphasizes that this was consistent with past trends.⁷ As for the Minister’s statement, he notes it makes no mention of what exactly each entity could do best.

The focus changed somewhat in the next decade. The 1995 *Sector Competitiveness Frameworks* document reveals that ideology changed once again. Markets now framed policy. The document attempts to succinctly define state support for the sector in the recent past in the following way:

Canada’s unstated industrial policy in the aerospace sector has aggressively promoted the development of a diversified, internationally competitive private sector industry. In many respects, the current policy has its roots in the 1959 decision to cancel the Avro Arrow program. In view of the small domestic market base and limited export opportunities, and faced with sharply-rising costs for the development of new weapons systems, Canada decided to produce rather than develop complete systems of sophisticated defence products, yet still maintain an indigenous defence production capability. Throughout the last three

decades, Government policy has focused on enhanced access to export markets and on the development of proprietary Canadian products with significant export potential.⁸

Clearly, the emphasis in this policy statement is on market access. Details provided to substantiate state involvement in this regard suggest the DIPP, EDC and related financing programs were key during the period. In addition, the document notes how the state focussed on “ensuring broad international market access by eliminating or limiting structural impediments to trade” including ‘endorsement’ of the GATT ATCA agreement.⁹ As we have already shown, the government may have accepted the deal, but it played little active part in defining it. Also noted as contributing to government policy are other factors, such as government procurement, air transport policy, and direct intervention. As has already been discussed in this analysis, all of these methods have been used. However, evidence tends to indicate that this was done in a more haphazard fashion than the state’s 1995 document suggests.

These three examples demonstrate the limited extent of written statements relating to state industrial policy for the aircraft industry. The general theme of the usually ‘unstated’ policy is that the state plays an active and consistent role in the sector, but typically as a supporting partner to private interests.

The question then becomes whether the evidence provided in this study illustrates this, or an entirely different, situation. At least in relation to these statements made during the four decades covered by this study, we may conclude that actions indicate the weakness of this rhetoric. First, the state played more than a supporting role in the sector during the period studied, even when the government in power was different and of opposing ideologies. It stepped in to support the industry, or at least the major players, at almost any cost. However, it did so not in any coordinated fashion, but inconsistently and typically in response to crisis. Even

in the international arena, where the state must play a leading role since industry has no voice in multilateral arrangements, there is little evidence of leadership or strategic thinking linked to bettering the sector.

This comparison between case evidence and government statements about the nature of policy gives us a top-level indication of contradictions between rhetoric and action. However, this analysis is intended to examine the wealth of material available to us to discern, not the overall contradiction *per se*, but how the state acts. The question is whether policy fits the anticipatory model or the reactive model. To do so, it is important to note the implications of evidence in the two main periods studied.

That there was government intervention to a significant degree during the period between 1965 and 1984 comes as no surprise. This was a period characterized by the ideology of nationalism, a strong central government, and state economic intervention. It was also a period in which the international and national economic situations were influenced by downturns and stagflation. So, state involvement was, more or less, generally acceptable.

In the Canadian aircraft industry, this may well have been a time in which industrial policy of a structured and strategic nature could have been implemented. It was a time of stress and the Science Council strongly promoted the idea of developing anticipatory policy for the sector. It did so not only to remedy a situation that historically had been piecemeal and was seen to have been less than effective for the national interest. It did so also because it recognized that the very nature of the aircraft manufacturing sector in the country was transforming significantly. Defence spending on aircraft programs was declining precipitously. Despite the fact that exports had increased during the mid-1960s, confidence that the trend would continue was low. The Council suggested that a lack of effective policy and sector coordination could have a damaging

effect on indigenous firms. Plus, should external market conditions for civil aircraft change, leading foreign owners of the major aircraft manufacturers to lose interest in their Canadian-based holdings, the result could be a crisis. Both situations occurred. State support to the industry in the wake of these crises resulted in a range of reactive steps to ensure survival, particularly directed towards the two main airframe manufacturers.

It is interesting to note that certain ideas buried in text of the Green Report were quite insightful. Unfortunately, they were not strongly presented as recommendations. One suggestion was for the aircraft industry to exploit gaps in the civil aircraft market. In effect, it advocated a niche marketing approach that would help avoid competition from large international companies. This would help the Canadian firms, smaller players on the world scene, to allocate scarce resources more effectively. Also mentioned was the idea of cooperative or consortium agreements that could be established between Canadian companies, or the government itself, with international partners “where clear long-term advantages to Canada can be foreseen.”¹⁰ These ideas would become standard in the world’s aviation industries within the next decade, but were not implemented in this country until the late 1980s.

Overall, though, the report clearly shows that the Council was not aiming at an overly centralized, state-intensive approach. The authors suggested, “it may be neither possible nor desirable that an all-inclusive set of formal objectives should be established at the highest level.” What they advocated was one where all players were equally involved through a framework that could simply and expeditiously identify and take advantage of opportunities in the market and with new technology. It would be a system where the interests of all stakeholders were considered, and where everyone worked together to optimize progress and provide the fullest

benefit to the country.¹¹ However, most of the recommendations in the Green Report were simply ignored by the government.

Other case material provides strong indications that the nature of policy toward the sector in this period was largely reactive. As we recall from Chapter 2, Atkinson and Coleman note that indications of reactive policy can be discerned from actions relating to response to market failure, *ad hoc* measures, firm-oriented steps, vote seeking and financial bailouts, among others.

Each of these situations is evident throughout the period. In fact, it was market upset during the late 1960s/early 1970s that created many of the long-term problems. The state reacted to the crisis, caused by the lack of desire on the part of private, foreign owners to develop the aircraft industry here, by buying the two major firms. For nearly a decade the government remained focused on these firms, but treated them not as state industries but as government-owned entities with little government management. Repeatedly, the state stepped in to resolve financial issues. We also see a lack of coordination between various bureaucracies and political elements of the government in a number of episodes. The inconsistency of EDC support to finance sales in the SAC case is one example. The STOL program illustrates conflicting goals and opposing support for a program.

Had stronger supportive policy been in place, likely neither of these would have become a problem. Support for both Canadair and DHC has been questioned because of political support by particular strong elements of the Liberal party. In the case of Canadair, it was the Quebec caucus and certain key ministers interested in vote getting and retaining local employment. For DHC, it was support from Toronto area Members of Parliament. Finally, even with the association between the sector and state during the period, government response to leadership and requests for action from the industry was weak. These, and other examples, illustrate that

actions during the period clearly align with the characteristics of reactive policy making as defined by Atkinson and Coleman.

The period between 1984 and today has been markedly different than that between 1965 and 1984. Governments in power have held and fostered a different set of beliefs. The period began with an emphasis on *laissez-faire* economics and the rhetoric of privatization. Since then, and after a change in the governing party, the overall focus of the state has been on deficit reduction and ‘good’ management. In large part, the government has stepped back from the position of being highly involved in business. The rhetoric has been more about cooperating with private industry from a supporting position.

There are two distinct areas of interest to the aircraft industry here. The first is in the actions taken during the early part of this period when the major aircraft manufacturing firms were sold back to private interests. The case material indicates that this was done without any great thought to implications for the sector. The government of the time continued to act in a firm-centred way of thinking. In the DHC example, the Conservatives sold the Canadian company back to foreign interests. They seemed to have forgotten that the problem began largely due to a lack of interest by offshore owners in promoting Canadian interests.

The second element of interest here is government support programs and the effects of internationalism. While many accepted the state’s retrenchment from ownership, there remained areas in which government action should have benefited the sector. Standing up for Canadian interests in multilateral trade negotiations and developing coordinated sector policy frameworks are but two examples. However, the opposite seems to be the case. This lack of action contributed to the reactive approach to the trade battle over regional jets with Brazil. The cancellation of DIPP as a financial restraint issue totally ignored sector interests. Even recent

sector frameworks demonstrate little evidence of strategic planning. Therefore, even in the role of supporter, the state failed, and left itself in a position where reaction was the only possible course of action. Again, case material illustrates that state actions during the period are consistent with the concept of reactive policy-making as defined by Atkinson and Coleman. We can therefore conclude that in both periods, despite the overall differences in their nature and the ideologies followed by the various governments in power, the state generally followed a reactive policy making path to support the aircraft industry sector.

It is interesting to note that even Letovsky generally agrees with this statement, despite the fact that he indicates the Quebec sector has implemented some anticipatory policy steps. However, in the interests of his own analysis, he downplays the significance of the major evidence for supporting the reactive model. He supports the idea that TPC, EDC and some of the recent Quebec provincial financing programs are reactive. He acknowledges that TPC was created as a reaction. He even accepts that the acquisition and nationalization of Canadair and DHC are reactive.¹²

In the case of DIPP, Letovsky suggests it was more of an anticipatory approach since that sector received the largest share of DIPP funding over the life of the program. While this may be true, whether or not DIPP can be considered “more anticipatory”¹³ is questionable. Primarily, it was a policy tool devised in 1959 to support defence goods, not the aerospace sector specifically. In accordance with Atkinson and Coleman, only a sector-oriented policy can truly be considered anticipatory. MacDonald, who analyzed how DIPP funds were used in the aerospace sector during the 1980s, concludes the state used it not for investment, but to maintain jobs and counter subsidized foreign firms.¹⁴ This contributes to the notion that the state took advantage of an existing program and applied it to the aircraft industry to achieve the best result it could. This

tends to support a notion of reaction. However, whether DIPP was more anticipatory or more reactive appears to be debatable.

Overall, as noted earlier, Letovsky's conclusion rests largely on acceptance of the fact that items such as industry dinners, meetings and newsletters constitute signs of anticipatory policy. They may well.¹⁵ However, the episodes and cases presented in this study provide far greater and stronger indications of what state policy has been for the aircraft industry over the last four decades.

Even accepting Letovsky's results as an indicator of a minor trend, we can conclude that reactive policy making has been the major trend. This remains entirely consistent with Atkinson and Coleman's contention that it is "best to describe Canadian industrial policy as consistently coloured by the reactive model, but containing the elements of anticipatory policy making in selected industrial sectors."¹⁶ The aircraft industry has been more than suitably coloured reactive.

While this has been the case during the last four decades, other choices were available to the state. As noted earlier, the 1970s presented a situation where the state could have introduced more anticipatory measures to support the industry. In fact, some members of the Pearson and Trudeau Liberals attempted to advance the idea of stronger government involvement in industrial development around that time. Cabinet Ministers, such as Walter Gordon and Herb Gray, promoted the idea to develop new policy instruments to foster growth in the manufacturing sector across the country. In fact, Gray suggested that the time had come to adopt strategies that foreign governments were already using. In 1980, he presented his ideas for how the state could become more involved. However, his efforts were not to come to fruition. Cabinet rivals defeated Gray's plans. His opposition, which favoured little state involvement in industrial

policy, firmly believed a superior strategy was to eliminate tariffs and other barriers to trade between Canada and the U.S.¹⁷

However, it was not only certain Liberal Cabinet Ministers who recommended innovative approaches to deal with industrial development and overcome economic malaise. The Science Council, as we have already seen, also supported the idea that the state had a greater role to play. Report after report by the Council argued for greater effort by the state to develop an overall strategy for industrial development in the country. One reason for this was that “the marketplace has proved unable to promote technological development and to ensure its correspondence with social and economic objectives.”¹⁸ In other words, the state had a role to play to coordinate national interests that individual firms did not consider. A coordinated approach, applied to a particular sector, could have provided a superior and optimal solution that considered the greater good. That this approach was relevant to the aircraft industry at the time is evident in two areas. First, the market was floundering. Secondly, as it declined, foreign owners of the two largest airframe builders in this country demonstrated they were unwilling to support Canadian interests. They were willing to let employment levels drop and would not continue to fund development of high technology products. However, as we have seen, the government ignored most of the advice the Science Council submitted.

The reason why the advice from Gray, the Council and others for a strategically oriented policy was dismissed had to do with the overall debate on industrial development. The debate has generally been characterized as falling at one of two extremes. Those who suggested greater state involvement through the use of industry-wide, coordinated policy, such as Gray and the Council, are referred to as belonging to the nationalist school of thinking. Those who supported greater regional trade between Canada and the U.S. fall in the category known as the

continentalists. These two categories are largely oppositional. Gray and the Council lost the charge towards the coordinated approach largely because there was greater support in the government for the continentalist approach. As Williams notes, this was because the efforts by the nationalists were largely “thwarted systematically by the bureaucratic elites within Finance and Industry, Trade and Commerce.”¹⁹ In fact, state policy during the period prior to, and including, the four decades of this thesis has been dominated by such orthodox thinking.

It is unfortunate for the aircraft industry that the debate about policy was argued from such extremes. For the disarray in the sector that marked the past four decades may well have been avoided had the state followed a more anticipatory policy model instead of reacting to crisis after crisis. It should be reiterated that the approach advocated by the Green Report was not for an overly centralized approach. It did, however, suggest that all parties work together and optimize sector development while continuing to consider the interests of all parties. This solution, they argued, was a methodology that would prove superior over the long run. Moreover, the Green Report contains several insightful ideas that would be adopted by the industry to improve performance in an international market for civil aircraft. However, they were adopted only years later.

To a large degree, the approach the Council suggested, one where all actors worked together for optimum results and which included strong state support, is quite similar to the approach currently being advocated in the U.S. It is not reactive as in the U.K. example previously discussed. Nor is it anticipatory, in the highly intrusive sense, as evident in the approach taken in many NICs. It remains anticipatory because all actors cooperate and strong state support fosters the development of a healthy framework to help the sector grow. In this

sense, this approach is a middle ground, or third approach, that the Canadian state needs to consider for the industry.

The U.S. example, while perhaps not being fully transferable to Canada, does suggest some paths the Canadian government should pursue. First, there must be recognition of the fact that support for an anticipatory policy model is growing in the U.S. That this is the case is clear in the following recommendations, among others, from the *Final Report of the Commission on the Future of the United States Aerospace Industry*:

The federal government does not have a national aerospace consensus ... This will require Presidential and Congressional leadership to develop a consensus of federal, state and local government, industry, labor, academia and non-governmental organizations to sustain a healthy U.S. aerospace sector.²⁰
and

The Commission recommends a new business model designed to promote a healthy and growing U.S. aerospace industry. This model is driven by increased and sustained government investment and the adoption of innovative government and industry policies that stimulate the flow of capital into new and established public and private companies.²¹

What this anticipatory policy approach might look like in this country is beyond the scope of this thesis. However, closer study of the U.S. report will likely provide further clues. Undoubtedly, closer cooperation between all actors with an interest in the sector, as advocated by the Science Council in 1970 and the U.S. Commission in 2002, is undoubtedly a key. One other area to consider is how Canadians think about industrial development. Canada needs to move beyond the continentalist approach, particularly in thinking about the aircraft industry. As Materna suggests, internationalization of the civil aircraft industry has changed the way we must think about supporting it. He argues that, to be successful, firms must have a geocentric, or world orientation. A regional orientation, characterized by the continentalist viewpoint, can only hinder progress.²² Therefore, to benefit the aircraft industry sector, Canada needs to develop a

framework that benefits the country socially and economically while based on a strategy focused not just within North America but on the world. Further detailed exploration of these issues is required.

This thesis set out to understand the nature of state support for the Canadian aircraft industry over the past four decades. Specifically, it explored the actions of various actors to help us understand whether policy reflected the reactive or anticipatory concepts developed by Atkinson and Coleman. Our analysis illustrates that state promotion of the sector more closely matches the reactive model. It also looked at the aircraft industry through a different perspective than the one Letovsky used in his study. We suggested that his contention that recent forms of anticipatory policy were meaningful was incomplete and potentially misleading. This could lead those aiming to suggest new policy directions for the sector to draw wrong conclusions about state support.

This study suggests that state support has been, and continues to be, generally reactive. The rhetoric about policy towards the industry has not been matched by actions. The implication of this is that the state has not supported the industry in the right manner during the four decades studied in this thesis. Therefore, we need to investigate new means to help the industry develop and thrive in the future. This will also benefit the Canada's economy and society. Clearly, the country can choose between anticipatory and reactive paths. As well, it needs to understand its goals. This is illustrated well in Kierans' statement that:

an industrial policy will be meaningless unless there is a clear definition of what Canada is, what are its aims, where it is going and how it proposes to get there.²³

NOTES TO CHAPTER 5

¹ There a number of studies relating to the National Film Board of Canada (NFB) and its founder, John Grierson. The use of the organization for propaganda purposes in war and to promote state educational initiatives during peace are central themes of many of these. *Challenger: An Industrial Romance* seems to have been constructed in a manner in line with documentaries used to get government messages out to the public such as educational films on nutrition and food products. In this sense see Jack C. Ellis, *John Grierson: Life, Contributions, Influence* (Carbondale, IL, and Edwardsville, IL.: Southern Illinois University Press, 2000), ix. Ellis claims the NFB “stands as the largest and most impressive monument to Grierson’s concepts and actions relating to the use of film by governments in communicating with their citizens” for educational purposes. Also see Gary Evans, *John Grierson and the National Film Board: The Politics of Wartime Propaganda* (Toronto, Buffalo and London: University of Toronto Press, 1984), 11. Evans states that the purpose of “Canadian government film propaganda ... was to further national goals and institutions. The propaganda was educational, inspirational, and evocative.” An interesting addition to this accepted view of the NFB can be in Michael Sternberg, “In-Between Pragmatism, Lament, Seduction and Terror: The National Film Board of Canada, 1939-1945,” Research essay (Carleton University, School of Canadian Studies, 1998), 14. Sternberg suggests that, while the NFB’s role during the Second World War was undoubtedly for propaganda purposes, the images and sounds in the films often contradicted their “propagandist intent.”

² G. Bruce Doern and Richard W. Phidd, *Canadian Public Policy: Ideas, Structures, Process*, 2d (Scarborough, ON: Nelson Canada, 1992), 260.

³ Department of Industry, Trade and Commerce, *Canadian Aerospace Manufacturing Industry, Sector Profile, Discussion Paper* (Ottawa: Department of Industry, Trade and Commerce, 1978), 14.

⁴ *Sector Profile 1978*, 15.

⁵ Quoted in Bob MacDonald, “The Canadian Aerospace Industry and the Impact of Federal Assistance,” Executive MBA research report (Concordia University, 1988), 6. This comes from Department of Regional Industrial Expansion, “Memorandum of Understanding for Industry Development Planning” (Ottawa: Department of Regional Industrial Understanding, 1985).

⁶ Quoted in MacDonald, 5. This is also from “Memorandum of Understanding ...”

⁷ MacDonald, 5.

⁸ Industry Canada, Aerospace and Automotive Branch, *Sector Competitiveness Frameworks – Aircraft Industry (Background Analysis)* (Ottawa: Industry Canada, 1995), Section 5, 1; available at <http://strategis.ic.gc.ca/SSG/ad03632e.html>; accessed 11 October 2002.

⁹ *Sector Competitiveness Frameworks*, Section 5, 1.

¹⁰ J.J. Green, *Aeronautics – Highway to the Future: A Study of Aeronautical R&D in Canada*, Background Study for the Science Council of Canada, Special Study No. 12 (Ottawa: The Queen's Printer, 1970), 79-80.

¹¹ Green Report, 67, 102-105.

¹² Robert Letovsky, "Public Policy and the Quebec Aerospace Sector," Ph.D. dissertation (Concordia University, 1999), 162-167.

¹³ Letovsky, 164.

¹⁴ See MacDonald, 51-53, in particular for further details of this argument.

¹⁵ In this regard, it is important to understand the idea of "social capital" and the theory surrounding it. As Putnam notes "the core idea of social capital theory is that social networks have value." He adds that this is "most powerful when embedded in a dense network of reciprocal social relations." The ideas of the value of social capital have been extended to various fields including economics and suggest networks are extremely valuable in just the way Letovsky argues. Therefore, the idea that industry dinners, meetings and devices that increase communication between parties have value is not disputed here. For further information see Robert D. Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York, London, Toronto, Sydney and Singapore: Simon & Schuster, c.2000), 18-24 in particular.

¹⁶ Michael M. Atkinson and William D. Coleman, *The State, Business, and Industrial Change in Canada*, The State and Economic Life Series (Toronto, Buffalo, and London: University of Toronto Press, 1989), 31.

¹⁷ Glen Williams, *Not For Export: The International Competitiveness of Canadian Manufacturing*, 3d (Toronto: McClelland and Stewart Limited, 1994), 152-154.

¹⁸ Quoted in Glen Williams, *Not For Export: Towards a Political Economy of Canada's Arrested Industrialization*, 2d (Toronto: McClelland and Stewart Limited, 1986), 143. This quote is from John N.H. Britton and James M. Gilmour, assisted by Mark G. Murphy, *The Weakest Link: A Technological Perspective on Canadian Industrial Development*, Background Study for the Science Council of Canada, No. 43 (Ottawa: Department of Supply and Services, c.1978).

¹⁹ Williams 1994, 153.

²⁰ Aerospace Industries Association, *Final Report of the Commission on the Future of the United States Aerospace Industry* (Arlington, VA: Aerospace Industries Association, 2002), xi; available at www.aia-aerospace.org/issues/commission/commission_report.pdf; accessed 5 January 2003.

²¹ *Final Report of the Commission ...*, 7-1.

²² Robert D. Materna, "An Examination of Internationalization in the U.S. Aircraft Industry in the 1980's: A Case Study of McDonnell Douglas Corporation," Ph.D. dissertation (Georgia State University, College of Business Administration, 1988). See 5, 22-24, and 29-31, in particular.

²³ Quoted in Fred Lazar, "The National Economy: Industrial Strategy," in *Canadian Annual Review of Politics and Public Affairs 1973*, ed. John Saywell (Toronto and Buffalo: University of Toronto Press, 1974), 331.

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