

Aerospace Review
Mandated by the Government of Canada

Discussion Paper

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www.aerospacereview.ca

Message from the Review Head

I am pleased to have been invited by the Government of Canada to lead an arm's-length review of programs and policies related to the aerospace sector.

Global supply chains, technology, and market conditions are changing rapidly, giving rise to new challenges and creating new opportunities for Canadian aerospace firms. In this evolving environment, the sector's competitiveness will depend on the engagement of all stakeholders in the development and implementation of appropriate strategies.

The Aerospace Review will provide an independent assessment of how federal policies and programs can contribute to the sector's success. The Review will employ a rigorous, evidence-based approach that draws on information and advice from a wide range of industry representatives and experts and, in particular, the insights of an Advisory Council comprising Jim Quick, Jacques Roy, and Sandra Pupatello.

I am confident that working together we will produce recommendations to help ensure the long-term competitiveness of the aerospace sector, which plays such an important role in Canada's prosperity and security. I look forward to reporting back to the Minister of Industry with the Review's recommendations by the end of 2012.

David L. Emerson P.C., O.B.C.
Review Head

Objective and Scope of the Review

The intention to initiate an Aerospace Review was first announced by the Government in the 2011 Budget:

“The Government will conduct—through a consultative process involving the Aerospace Industries Association of Canada and their member firms—a comprehensive review of all policies and programs related to the aerospace/space industry to develop a federal policy framework to maximize the competitiveness of this export-oriented sector and the resulting benefits to Canadians.” (Budget 2011, page 86)

The Review will be independent, grounded in a long-term perspective on global and industry trends, open to innovative but practical approaches and solutions, and aimed at producing concrete, fiscally neutral recommendations.

For the purpose of this Review, the aerospace sector includes commercial aerospace; military aerospace; maintenance, repair, and overhaul (MRO) services for aircraft; the development, deployment, and operation of space assets; and the processing of raw data received from space-based systems. Airlines (except for their MRO divisions), airports, and the overall business climate are not part of the Review’s mandate.

The aerospace sector is complex. Parties with an interest in the sector—in addition to original equipment manufacturers (OEMs) and the large number of companies in OEMs’ supply chains, including small businesses—include governments, unions, research institutes, colleges, and universities. The Review’s recommendations will take into account the roles of all stakeholders in ensuring the sector’s success.

Key Facts and Trends

Canada is a key player in the global aerospace industry and is a leader in the design and production of regional aircraft, propulsion systems, flight simulators, landing gear, environmental control systems, and civil aircraft. Canada developed the world's first domestic satellite communications system (the Anik series in 1972), the first direct-to-home broadcast satellite (Hermes in 1976), and the most advanced robotic space systems (the original Canadarm and Canadarm2). These achievements are a source of national pride.

The aerospace sector contributes significantly to the prosperity of Canadians. The Aerospace Industries Association of Canada (AIAC) estimates that the sector directly employs about 80,000 people, mostly in high-wage jobs, and has annual revenues of about \$22 billion. The sector is very technologically advanced and one of the largest performers of research and development (R&D) in Canada. It is globally oriented, with approximately 80 per cent of its production exported.

The aerospace sector is also critical to Canada's sovereignty, national security, and public safety. Canadian aerospace companies participate in the design, development, manufacture, and maintenance of military aircraft that help keep the country safe. And satellites play an integral role in support of domestic and international communications, ice-laden water navigation, and the monitoring of Canada's coastlines and northern territory.

Since the Second World War, public policy has played an important role in fostering the success of Canada's aerospace sector. This reflects the fact that research, development, and production processes in the aerospace sector are longer-term, higher-risk, and more capital-intensive than in almost any other industry, and yield significant benefits for the public good. In recognition of such factors, many countries have provided support to their aerospace sectors through a variety of instruments.

There is a need, however, for rigorous evaluation of the effectiveness of various policies and programs for the aerospace sector. Moreover, in a changing world, a solid track record does not mean that familiar strategies will continue to work. The aerospace sector, like all sectors of the Canadian economy, will be affected by a range of broad, long-term trends, including the following:

- A global rebalancing marked by the emergence of new economic powers with a growing appetite for sophisticated goods and an increasing number of manufacturers that benefit from comparatively low labour costs and high government support.
- Non-traditional security threats that require more precise detection and response technologies.
- Climate change and the opening of Canada's North.
- The need for enhanced natural resource management in a resource-hungry and environmentally sensitive age.
- The worldwide expansion of telecommunications and the Internet, and the associated demand for reliable infrastructure to support them.

These five trends apply to the sector overall. Others are more specific to the commercial aerospace, military aerospace, or space segments, and are summarized below.

Commercial aerospace

Commercial aerospace is the largest segment of Canada's aerospace sector. Demand in this industry is primarily driven by passenger and freight traffic and corporate use of aircraft.

The volume of air traffic is expected to expand significantly in the coming decades, mostly due to demand in Asia, the Middle East, and Latin America. Growth is expected to be strongest for large commercial aircraft, business jets, and civil rotorcraft (e.g., helicopters). This will create new opportunities for aircraft producers, MRO firms, and their supply chains. The shift in demand from developed countries to emerging markets may also require that some firms adjust their product offerings, methods of production, or marketing strategies to adapt to local conditions.

Paralleling the growth in emerging markets is the globalization of OEMs' supply chains, as assemblers buy parts and systems from suppliers throughout the world, basing their purchasing decisions primarily on considerations related to cost and market access. Proximity to OEMs' assembly plants no longer offers suppliers the comparative advantage it once did.

At the same time, OEMs are devolving a greater portion of R&D costs and risks to suppliers. This is creating financial pressures among some smaller suppliers—pressures that could complicate their efforts to participate in the supply chains of new aircraft.

Against the backdrop of these market and production changes, developments in the commercial aerospace industry will be driven by the need to meet the evolving requirements of airlines, the flying public, and regulatory bodies. Airlines currently spend about a third of their operating funds on fuel and are facing rigorous rules around emissions, noise, and safety. As a result, aircraft producers will increasingly be expected to develop technologies and designs that optimize performance in these areas.

Military aerospace

Demand in the military aerospace industry hinges mainly on governments' security and operational needs and fiscal realities.

In light of new security challenges, many national governments have placed greater emphasis on defence and adjusted the mix of military equipment they employ. Satellites, for example, are increasingly depended on for the surveillance of national borders and the support of military operations, and unmanned aircraft are being used more and more to penetrate enemy territory while minimizing casualties. These trends will require the military aerospace industry to adapt product lines and develop innovative solutions.

Procurement decisions, practices, and offset policies influence the capacity and competitiveness of the military aerospace industry. Under the Canada First Defence Strategy (CFDS), the Government of Canada is renewing its fleet of aircraft. While most of the aircraft acquisitions under the CFDS are complete, the role of Canadian companies in producing systems and components for the purchased aircraft helps position them to secure opportunities when fleets are modernized in other countries. Additional opportunities lie in the need for in-service support for the recently acquired fleets.

Because the Canadian defence market is relatively small, trade with other countries is important to the military aerospace industry. In this context, export controls aimed at preventing strategic and military technologies from being acquired by certain governments and organizations can present challenges. Companies interested in obtaining foreign procurement contracts can also face difficulties with international trade rules that use national security grounds for an exemption from the requirement to treat all bidders in a “non-discriminatory” fashion. Neither export controls nor the national security exemption are likely to disappear in the foreseeable future.

Finally, budget tightening across many countries is likely to affect the growth prospects of this segment for at least a decade.

Space

The space industry, with the exception of commercially viable satellite communications, is mostly driven by government activity.

The satellite communications segment has experienced significant growth in the past decade, reflecting a rising need for communications solutions throughout the world, especially in emerging markets. This trend is expected to continue.

The outlook for the remainder of the space industry is more ambiguous. Governments around the world are using space assets and new space-based applications to improve the efficiency and quality of services, protect national security, enhance environmental monitoring, and enable economic development. The peaceful exploration of space through initiatives such as the International Space Station also remains a priority for many governments. Budget constraints, however, could affect the scale of public investments in these areas.

The international trade environment for the space industry is also somewhat uncertain. The aforementioned exemption in trade rules for national security considerations can be interpreted as covering goods and technologies designed for use in space if, for example, they can be employed for military as well as civilian purposes. While Canadian firms have been competitive in global markets, the exemption can be applied where trade conditions are not clearly spelled out in international agreements, thereby limiting sales opportunities.

Questions and Approach

The Review will focus on a number of overarching questions:

- What are the comparative advantages and vulnerabilities of Canada's aerospace sector?
- What opportunities and challenges do changing conditions present?
- What can the Canadian aerospace sector do to take advantage of these opportunities and meet these challenges?
- What might Canada learn from strategies used by governments, companies, and researchers in other countries?
- What impacts are existing policies and programs having?
- What modified or alternative policies and programs might government consider?

To answer these questions and develop recommendations, the Review will use a variety of tools to gather information and advice, including:

- A literature review and analysis of available data.
- Working groups led by industry representatives.
- Regional roundtables to solicit views from interested parties across the country.
- An assessment of best practices in Canada and abroad.
- Solicitation of written submissions.

Should you wish to obtain more information on the Review or make a submission, please visit our website at www.aerospacereview.ca.