



Canadian Aerospace Associations Human Resources Alliance
Alliance des associations canadiennes de l'aérospatiale en ressources humaines

Canadian Aerospace Human Resources Strategy

[Strategic Thrusts and Clusters of Integrated Strategic Initiatives]

Executive Summary

ACKNOWLEDGEMENTS



The Canadian Aerospace Associations Human Resources Alliance (CAAHRA) wishes to acknowledge Human Resources & Social Development Canada (HRSDC) for their support of the Canadian Aerospace Human Resource Strategy Development (CAHRSD) project, which has truly enabled the Canadian aerospace industry to work together with stakeholders across Canada to develop this first pan-Canadian HR strategy to assist Canadian aerospace firms to meet current and emerging human resources challenges, changing market demands and to respond constructively to demographic realities, for the betterment and sustainability of Canada's aerospace industry.

CAAHRA also wishes to acknowledge the Canadian Aviation Maintenance Council (CAMC) for its cooperation in securing project resources through HRSDC, participation at the CAHRSD meetings, and overall interest in this initiative.

CAAHRA commends the direct contributions of its provincial/regional member associations who have put forth great time and effort to support workshop organization, participation and effective communication to their members and stakeholders.

Finally, CAAHRA wishes to thank specifically the following individuals who have contributed significantly to the development and success of the project: Ken Beleshko, Scott Clements, David Cogdon, Hal Davies, Willard Horne, Andrew Huige, Stu McIntosh, Kim Miller, D'Arcy Phillips, Serge Tremblay, and the CAHRSD Project Team – Rod Jones, Marlene Conway, Lucie Boily, Wayne Lamon and Vanessa Tari-Martinez.


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EXECUTIVE SUMMARY

The Canadian aerospace industry recognizes that a national HR strategy and action plan is vital to enable the industry to meet dramatically changing market demands with respect to growth, globalization, technologies, and supply chain relationships, and to respond constructively to the reducing number of Canadian youth available to enter the workforce. Through this HR Strategy and Integrated Strategic Initiatives, Canada's aerospace industry is responding to these business challenges of today's dynamic global marketplace. Through twelve (12) industry workshops across Canada, two (2) Organizing Team meetings and two (2) Steering Committee meetings held from August 2007 to March 2008, over 220 industry representatives and other stakeholders have defined three (3) Strategic HR Thrusts: "Entry – Enhancement – Transition" and defined seven (7) Integrated Strategic Initiatives.

Through the two primary 'clusters' of Strategic Initiatives, a 'quantum shift' in the effectiveness of the industry's HR processes for selection, training, development, and mobility of our people is now within our reach.

Implementation of these progressive "competencies-based, outcomes-driven" HR practices will help make the Canadian aerospace / aviation industry compellingly more attractive as a sector that Canadian youth, and Air Cadets especially, will prefer and choose, where our current employees can grow and advance, and that will be a desirable and accessible destination for new Canadians and those from other sectors and non-traditional groups, including women and Aboriginal people.

This truly 'game changing' HR strategy and these seven (7) ground-breaking strategic HR initiatives constitute a highly valuable contribution to the overall industry plan to reinvigorate our market and technology leadership in specialized niches over the next 10 – 20 years.

This Canadian Aerospace Human Resources Strategy Development (CAHRSD) project was designed by the Canadian Aerospace Associations Human Resources Alliance (CAAHRA) to achieve a shared HR vision and to define integrated strategic initiatives that would enable each province / region to meet current and emerging human resources challenges, for the betterment of all of Canada's aerospace industry. The Canadian Aviation Maintenance Council (CAMC) provided helpful cooperation in securing project resources through HRSDC, participation at the CAHRSD meetings, and overall support for this initiative.

The CAAHRA member associations who have partnered to drive and support the CAHRSD project are as follows:

- a) Aerospace Industry Association of British Columbia (AIABC)
- b) Aviation Alberta (AvA)
- c) Saskatchewan Aerospace and Defence Industries
- d) Manitoba Aerospace Human Resources Coordinating Committee (MAHRCC)
- e) Ontario Aerospace Council (OAC)
- f) Centre for Aerospace Manpower Activities in Québec (CAMAQ)
- g) New Brunswick Aerospace and Defence Association (NBADA)

- h) Aerospace and Defence HR Partnership for Nova Scotia (HRP-NS)
- i) Prince-Edward Island Aerospace Human Resources Sector Council (PEI AHRSC)
- j) Aerospace and Defence Industry Association of Newfoundland and Labrador (ADIANL)

The proposal for the development of an Aerospace Industry Human Resources Strategy was consistent with the recommendations of the Canadian Aerospace Partnership (CAP) Working Group, in which CAAHRA members played an active leadership role. CAP leaders at their meeting on September 5, 2005 endorsed these recommendations.

INDUSTRY PROFILE / CONTEXT

The aerospace industry plays an important role in the Canadian economy, affecting and drawing on many sectors and providing critical services to Canadian citizens and the business community.

With revenues in excess of \$21 billion (2005), 78% of which is exported, and employing more than 78,000 people, the Canadian aerospace industry is a successful competitor in a global marketplace. Canada's aerospace industry is currently the 5th largest in the world.

The Canadian aerospace / aviation industry is comprised of several segments.

1. Design / manufacturing of commercial aircraft, engines, systems, avionics, equipment and components
2. Maintenance, repair and overhaul (MRO) services for aircraft, engines, systems and equipment
3. Design and manufacturing of space systems, equipment and components

The dramatically reducing numbers of young people in Canada's workforce over the next decade or so will force many aerospace companies to re-design fundamentally their current business models.

Given the continuing requirement for massive up-front development costs, far fewer major new aircraft programs are likely to be launched over the next decade than in the past. The Canadian aerospace industry's recently launched Future Major Platforms initiative recognizes this; the industry is working together, in cooperation with Federal and provincial governments, to seize a significant share of the most important future major platform opportunities. This will require establishing technology leadership in areas that meet customer needs for these future aircraft. Canada's aerospace industry has leadership positions in several of these areas, but is lagging in others.

Other countries such as United States, United Kingdom and Australia have been proactive in their development of strategic educational and developmental initiatives and partnerships to advance and develop capabilities in critical technological disciplines.

The Canadian aerospace employment profile, as based on data from the Canadian Aerospace Labour Market Study (CALMS) published in 2001, shows that the aircraft / systems / equipment / components

design and manufacturing segment has approximately 61,400 employees and about 480 companies. The MRO segment employs approximately 18,000 people in approximately 120 companies.

CURRENT SITUATION

Industry leaders identified the following consistent issues and challenges among the provinces and regions: shortages in skilled labour for specific occupations and positions; competition from emerging markets; reduction of R&D investment; lack of industry standards for a wide range of positions and coordination between industry, education and government.

While each province / region is distinct in its industry composition, its demographics and other characteristics, and therefore commands a distinct set of solutions, drawn from an 'HR Strategy Menu'; there is clearly shared interest in working together on common challenges and solutions, and firm belief in the industry's ability to 'change the game' substantially through this Aerospace HR Strategy and resultant Strategic Initiatives.

The Canadian aerospace industry must excel in its continuing transformation to higher value-added supply chain product and service offerings in order to enhance its sustainability and global competitiveness. This transformation is built on human resource competencies that build the human capital of employees.

AEROSPACE HR GOALS / OBJECTIVES

Four primary development goals were established as follows:

1. **Ensuring a continual availability of people** to support the Industry's efforts to avoid or limit the effects of the expected labour shortage stemming from a decline in labour force participation rates, mainly due to aging.
2. **Securing people with the required knowledge, skills and work values (= Competencies)**. The changing nature of aircraft manufacturing technology, the complexity of supply chain dynamics, and the accelerated pace of change in the aerospace sector require companies to add new capabilities, and employees to add new skills and knowledge. These constraints have put increased demands on aerospace companies, particularly small and medium enterprises (SMEs), to acquire enhanced design, engineering and managerial competencies. The determination of critical competency areas and methods to cultivate and develop competencies were identified as keys to success for the sustainability of the industry.
3. **Improving the perceptions of the Industry as a "Career destination of choice"** in order to establish attraction, passion and retention of/within the Industry such that Canadian Aerospace becomes the preferred Career Destination among potential pools of labour (Youth, Immigrants, Workers in other Sectors, Non-traditional Segments); the Canadian public image and value of

the Industry is well understood and to better capitalize on/link current initiatives e.g. those aimed at attracting women into aerospace.

4. **Achieving a national focus & coordination around industry strengths** in order to: enhance the connection to priority market opportunities; facilitate and further engage established multiple stakeholders (industry, educational institutions, governments) in all regions across Canada to increase awareness and ability to build on national and regional HR strengths/success (incubating & inculcating 'best practices'); facilitate an effective national HR voice for the manufacturing sector of the Canadian aerospace / aviation industry.

STRATEGY DEVELOPMENT PROCESS

The strategic development process employed a proven process based on an iterative, consensus-building model. The project was based on a facilitated multi-workshop model. Workshops #1 framed the current situation within each province / region and identified global Industry trends to provide a solid perspective of business imperatives to foster facilitated strategic development discussions. Input from participants was garnered at each Workshop #1 session to define their 'Future State Visions' and 'Ideas for Actions'. Participants in Workshops #1 were predominantly industry firms, with participation by Air Cadet League representatives, educational institutions, government agencies and others.

Participants throughout all provinces and regions demonstrated a great passion for the industry. A shortage of skilled workers, managers, engineers and others in a variety of disciplines was noted in all geographies, although not the same in all provinces. The culture of the Industry is one of cluster development and strong relationships among all stakeholders.

The findings from the Workshops #1 were tabulated on an individual province or regional basis and then amassed to determine similarities and regional differences by the Organizing Team. Three primary strategic HR thrusts were identified: **Entry, Enhancement and Transition**. The 'Future State Visions' and 'Ideas for Actions' were correlated to these strategic HR thrusts. The Organizing Team, comprised of provincial / regional aerospace associations, identified Strategic Actions from the amassed Workshop #1 output and prioritized an initial series of proposed initiatives for presentation to the Steering Committee.

Concurrently, the PILAT (Provincial Industry / League Action Teams) initiative was active in bringing industry and Air Cadet League representatives together to discuss how to build the partnership between the Industry and the League, to bring value to all.

The CAHRSD Steering Committee provided input to delineate further the proposed initiatives. Following the unanimous decision by the CAHRSD Steering Committee and the PILAT Steering Committee to bring together the CAHRSD initiatives and the PILAT initiatives, the initiatives were integrated into four (4) Strategic Action Initiatives and three (3) Strategic Enabling Initiatives. The PILAT initiatives directly

support the CAHRSD youth initiative and hence were brought together as a related set of HR Initiatives. It was further agreed that Workshops #2 would be ‘combined’ workshops, both to ensure a high level of industry participation and to help build the industry / league relationships more effectively.

In Workshops #2, the proposed Strategic Action and Enabling Initiatives were presented to industry representatives and partners in each province or region and further input was obtained from the participants to ensure congruency in meeting the established strategic goals and targets, while responding to unique regional requirements.

Aerospace industry firms in Quebec undertook their own ‘strategic session’ (Grand Forum), as has been done regularly, to bring forward their visions and challenges from a provincial perspective, and to identify some proposed initiatives. Quebec representatives participated in the work of the CAHRSD Organizing Team and the CAHRSD Steering Committee.

The Integrated Strategic Initiatives from the CAHRSD process are presented in this report and represent the initial pathways forward for the Canadian aerospace industry to realize its strategic HR thrusts.

FUTURE-STATE VISIONS

The ‘Future State Visions’ on a pan-Canadian level as seen in all areas demonstrate the commitment of the Industry to long term employee development and retention. A strong focus on youth and attraction of non-traditional entrants is consistent throughout the country and is visualized as supported by well-defined educational channels, sustainable awareness resources / programs and strategic relationships such as that with the Air Cadet League of Canada.

Enhancement of existing employees’ knowledge, skills and abilities is seen as a key retention and development driver that is supported by industry recognition and academic recognition, which, in turn, supports transition of employees within the Industry and from other sectors and geographies. A ‘Bridges and Ladders’ competency-based platform is seen as required to further enhance retention and development of workforce. Consistent competency assessment tools are required to support new entrants from other sectors and geographies.

INTEGRATED STRATEGIC HR INITIATIVES

A set of integrated strategic actions and enabling initiatives were developed to meet the above Human Resource goals. Three central ‘strategic thrusts’ were derived from the project strategic development process: **Entry** (the attraction and qualification of new entrants to the industry including youth, non-traditional groups such as women and aboriginals and immigrants; **Enhancement** (development of existing employees for performance and advancement); and **Transition** (of people from other sectors and geographies).

The developed Aerospace HR Strategy provides a ‘menu’ of integrated Human Resource initiatives, tools and enablers which are centralized around these three primary strategic thrusts to provide solutions to accommodate short-medium and medium-long term workforce exigencies and emerging requirements.

The immediate workforce shortfalls may be accommodated with a two-prong approach of Enhancement and Transition. **Enhancement** refers to cultivating skills and talents of existing employees to promote life-long learning and development, increase productivity and retention and instil a ‘career vs. job’ motivational and advancement environment. **Transition** refers to bringing into our industry qualified / skilled / experienced people who are from other geographies and other industrial sectors, which may also include non-traditional groups such as women and aboriginals. In a time of shortages of people, business enterprises will need to focus on ‘highest value’ activities, enable employees to acquire the competencies needed to perform well in these new / changed roles, and ensure that people can move quickly and easily to where the jobs are, within and amongst companies and industries.

The medium-long term skills shortage has been addressed with an innovative set of initiatives which focus on **Entry** of youth, new entrants (recent graduates), non-traditional workforce as above and immigrants. This attraction will require a focused continuum of activity to heighten awareness of career pathways and opportunities for youth and others, including educational requirements and sources. A critical component of this longer-term employment supplement acknowledges the 3 – 10 year span required to attract and interest youth and provide sufficient educational development to yield a future sustainable pathway for qualified new entrants to the Industry. The strategic relationship with the Air Cadet League of Canada is seen as a critical and sustainable gateway for capable and motivated youth to progress into the Canadian aerospace industry.

These initiatives were developed by and are offered to each province or region as tangible strategic resource tools. Each province or region may utilize this ‘HR Strategic Menu’ of seven (7) Integrated Strategic Initiatives to best meet their individual requirements and priorities.

The foundation principles whereby required learning for qualification and/or advancement will be defined, and whereby an individual’s progress will achieve industry recognition, will be “competencies-based, outcomes-driven”. This competency-based approach will achieve:

- *Streamlined Recruitment / Selection Processes*
- *Improved Employee Skill Levels*
- *Improved Employee Performance*
- *More Effective Employee Development Processes*

The concept of ‘bridges and ladders’ is best illustrated by the UK NVQ/SVQ system within the science, engineering and manufacturing sectors which offers interconnected educational pathways. Canadian systems have very little connectedness, which deters people who are examining career options from choosing, for example, apprenticeships or skilled trade positions, however achieved, as these are defined in the Canadian system as ‘destinations’, not ‘waypoints’.

The Strategic Initiatives that have emerged through this process, and which are described below, have the potential to catapult our industry into a leading position, with highly effective and efficient HR practices collectively as an industry and by companies individually. This will represent a ‘quantum leap’ in our HR practices, as the Canadian aerospace / aviation industry has been lagging other jurisdictions with respect to pan-Canadian innovative, comprehensive and coordinated solutions to our HR challenges.

The CAHRSD Steering Committee has set three fundamental strategic directions:

- 1. *Establish ‘competencies-based, outcomes-driven’ principles as the foundation for defining industry positions and conducting individual assessments / evaluating gaps / directing learning and development, as a highly efficient and effective approach to developing and advancing our current employees, and equally for bringing new people into our industry. This approach will establish a ‘Common Currency’ for the industry in communication and development of critical competencies across the entire workforce, and will provide an Industry standard and common language within the industry, educators and other strategic partners. Timelines for results are short to medium (1 – 3 years).***
- 2. *Target Canadian youth as ‘new entrants’ to our industry and, as a first priority in that overall effort, aggressively build our strategic partnership with the Air Cadet League, to take full advantage of the 27,000 Air Cadets across Canada between the ages of 12- 18 who have displayed a keen interest in aerospace and aviation and whose attributes of leadership, discipline, teamwork and citizenship (among others) match well with those valued by our industry. Timelines for results are medium to long (3 – 10 years).***
- 3. *Target also those already skilled / experienced / qualified people (or nearly so) from other industry sectors, new Canadians, and non-traditional groups as further ‘new entrants’ to our industry, whose entry can be significantly quicker and more successful through our ‘competencies-based’ methods for assessing and evaluating and bridging critical gaps. Timelines for results are short to medium (1 – 3 years).***

The resultant Integrated Strategic Initiatives presented in this report are clustered around these ‘strategic directions’ and represent the initial ways forward for the Canadian aerospace industry to take action on its strategic HR thrusts and achieve its overall HR goals and objectives.

Strategic Initiatives Cluster 1	Career Pathfinder Development & Hiring Portal Position Profiles Framework	<i>New entrants, current employees, and under-represented groups</i>
Strategic Initiatives Cluster 2	Career Pathfinder Mobile Learning Modules PILAT Action Teams	<i>Youth – Air Cadet & others</i>
Tactical Initiative #1	Demographic Due Diligence	<i>Aerospace / aviation firms</i>
Strategic Enabling Initiative #1	Aerospace HR Net	<i>All stakeholders & partners</i>

Here are brief descriptions of each of these Integrated Strategic Initiatives:

■ **Career Pathfinder**

- An interactive, state of the art, web-enabled system to provide active career ‘pathfinding’ guidance for youth, current employees, and other entrants, showing “bridges & ladders” using industry-defined, education-supported architecture
- Match a user’s ‘aptitudes and interests’ to industry job families using ‘competencies’
- Provide useful information about expected future demand for positions / careers, including geographic locations in aviation/aerospace related careers in public and private sectors
- Enable users to access realistic ‘experience opportunities’ regarding jobs and careers of interest to them
- Track career pathways of current Air Cadets to support evaluations of the effectiveness of PILAT initiatives (voluntary participation)

■ **Development & Hiring Portal**

- An Interactive web-enabled method / system which offers three primary functions:
 - a. Enables companies to develop customized, competency-based Position Profiles for current and new positions within the company, starting with the pro forma Position Profiles from the Position Profiles Framework ‘library’.
 - b. Enables companies to screen job applicants efficiently and reliably by assessing the actual competencies of a particular individual (using the Assessment Methods from the Position Profiles Framework) and comparing this Personal Profile against the Position Profile.
 - c. Enables companies to assess the actual competencies of current employees (using the Assessment Methods from the Position Profiles Framework) and identify gaps against those competencies needed in their current or intended Positions.

■ Position Profiles Framework

- A 'library' of industry-defined, pro-forma, customizable, competency-based Position Profiles that capture the Technical (job-specific), Business and Relational competencies (knowledge, skills / abilities and work values) required by employers
 - Structured within 'job families' and among related 'job families' to define "ladders and bridges" for employees to advance in their career
 - Structured to provide industry recognition for proven progress by individuals in achieving all essential competencies for defined Positions
 - Focused initially on the most critical positions in the industry (at risk occupations, most critical for future success, shortages, etc.)
- A range of Assessment Methods that will assist employers in gauging the actual competencies of an individual vs. those required in a particular Position such as employees newly assigned and external candidates for a Position

■ PILAT Action Teams

- Widely engage Provincial 'Action Teams' stakeholders - Firms, Industry Associations, Air Cadet League and DND representatives, educational institutions and others to participate actively in their Provincial Industry / League Action Teams, develop plans and take actions to identify resources needed and available. Link local companies and local squadrons together to mobilize available resources and meet defined needs and to create a forum for provincial, regional, and national industry stakeholders to work together actively and cooperatively

■ MOBILE Learning Modules / PILAT Mobile

- Create a number of transportable "Mobile Learning Modules", each consisting of a set of active training equipment / materials and related supplementary learning support tools that will enrich / enable successful technical aerospace / aviation learning by Canadian youth and other learners, focusing initially on defined elements of the (updated) Air Cadet Training Program
 - Deploy (with managed access) these Mobile Learning Modules throughout each province / region in all geographic locations - particularly rural and remote areas.
 - Provide related supplementary learning support tools for delivery via PILAT Net, as appropriate.

■ Demographic Due Diligence

- A reliable, easy and broadly accepted method / software tool to assist companies with data collection and analysis to predict future critical shortages in their workforce.
- A first step has been taken: a tool has been developed and piloted with a limited number of employers in Manitoba and Atlantic Region;
- Feedback has been largely positive; enhancements are required to make this tool available widely with simple, reliable usability and awareness of/access to the tool must be addressed.

■ Aerospace HR Net

- An interactive, web-enabled service delivery and communications conduit that will link aerospace industry firms / Provincial Associations, Air Cadet Squadrons / provincial Air Cadet organizations, DND personnel (Air Cadet related), Educators, PILAT Action Teams, the Canadian Aviation Maintenance Council and other stakeholders as appropriate to:
 - a. deliver / support Career Pathfinder, Development & Hiring Portal, Demographic Due Diligence, and Mobile Learning Modules
 - b. inventory and coordinate available industry resources – equipment, facilities, instructors, funding, etc. – to enrich current Air Cadet training, activities and initiatives
 - c. provide an evergreen database of past Cadets, Cadet Instructors, and League members (voluntary participation basis):
 - d. track career pathways of current Cadets to support evaluations of the effectiveness of youth initiatives (voluntary participation basis)

ORGANIZING FOR SUSTAINABILITY

The CAHRSD Steering Committee concluded that additional information and consideration was required regarding various alternative governance / management / operating models.

CAAHRA will continue to be the coordinating mechanism for the Provincial Associations, for the time being and until such time as these arrangements are not practicable. The current Steering Committee design will be used to provide leadership and guidance for the implementation of initiatives. CAAHRA will work cooperatively with the Canadian Aviation Maintenance Council in these implementations.

SUMMARY REMARKS

The CAHRSD initiative has enabled the industry stakeholders to craft a shared vision and strategic initiatives that respond to their most critical issues. Provinces have shared their own successful experiences and examined innovative initiatives from other jurisdictions. Several Strategic Initiatives will build on these. The 'Development & Hiring Portal', enabled by the 'Position Profiles Framework', will directly assist current employees in making progress in their own careers. Individuals from other sectors, new Canadians, and non-traditional employees will find value in both **Career Pathfinder** and **Development & Hiring Portal** to assist them in finding and accessing opportunities within the aerospace / aviation industry.

Over 220 individuals from stakeholder groups across the country participated in the CAHRSD project: Industry Firms, Industry Associations, Air Cadet League, Educational Institutions, Provincial Government, Federal Government, Municipal Government, Labour Organizations, DND, Canadian Aviation Maintenance Council and Consultants.

Communication among the stakeholders was enhanced. Existing relationships were bolstered with renewed momentum and new potential strategic relationships were identified and initiated. Further resources are required to fully develop and implement the above strategic initiatives.

Information about 'best HR practices' have been shared among all provinces and the strategic initiatives offer good potential for increased utilization of best HR practices; actual progress will come later.

NEXT STEPS

CAAHRA will lead the work to prepare proposals for the defined Integrated Strategic Initiatives with the guidance of Task Forces comprised of industry and other stakeholder volunteers, and in cooperation with the Canadian Aviation Maintenance Council for submission to HRSDC for funding.

Provincial Associations and Provincial HR Organizations will continue to work together through CAAHRA and will, on a non-priority basis, consider how best to organize, on a pan-Canadian aerospace industry basis, to provide ongoing oversight of the development and implementation of HR initiatives and to continue to bring a strategic HR perspective for the future.