

2005 ANNUAL REPORT



NATIBO

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**North American Technology and Industrial Base Organization
(NATIBO)
Calendar Year 2005 Annual Report**

Background

At the 1985 Shamrock Summit, Ronald Reagan, President of the United States, and Brian Mulroney, Prime Minister of Canada, pledged to work to reduce barriers and to stimulate the two-way flow of defense goods, establish a free exchange of technology, knowledge, and skill involved in defense production. This led to the establishment of the NADIBO Charter signed by the two Nations' Defense Departments on March 23, 1987. At that time the NATIBO focused on the combined capacity and capability of the defense industrial bases of the U.S. and Canada to jointly support military requirements. In 1992, the Organization determined it needed to review its objectives and explore new roles and initiatives to respond to the challenges of the 1990s. This change was reflected in more focus on technology vice industrial capacity issues.

The 21st Century has presented new challenges for the national and economic security needs of the U.S and Canada. In 2005, NATIBO responded by expanding the areas it supports beyond traditional industrial base/preparedness concerns to include leveraging technology. This includes the assessing of infrastructure to develop and transition new military technology, as well as the ability to transfer technology between civilian and military applications and develop manufacturing technologies to support military transformation production strategies.

Focus/Objectives of NATIBO

- Promote the development, administration, communication, and execution of the U.S. Department of Defense and Canadian Department of National Defence technology and industrial base programs and policies.
- Foster cooperation between the Governments of the United States and Canada in development of coordinated technology and industrial base policies and programs, including policies and programs that promote the integration of the defense and commercial industrial sector and the greater use of dual use products and technologies.
- Leverage resources through cost sharing and economies of scale afforded through coordinated studies and projects involving research, development, industrial capability, and logistics programs.
- Promote the interchange of technology and industrial base data between Canada and the U.S., the military services, other government agencies, and industry.

- Promote coordination of technology and industrial base planning and insertion programs undertaken by the responsible U.S. and Canadian departments and agencies in support of their national security responsibilities.
- Facilitate enhanced joint activity through Canada/U.S. involvement in studies and implementation of resulting technology and industrial base recommendations.
- Ensure that North American technology and industrial base considerations are taken into account during U.S. or Canadian military and/or civilian emergency planning activities.
- Enhance the national security of both nations by promoting the competitiveness of the North American technology and industrial base.
- In performing the above, raise issues with relevant bi-lateral committees in those cases where interface between the NATIBO and these committees is determined to be advisable.

Memorandum of Understanding (MOU)

On May 30, 2001, the Department of Defense of the USA and the Department of National Defence for Canada entered into an agreement whereby the Defense Departments can more efficiently continue their efforts to improve the defense posture of the North American technology and industrial base. The MOU (short title NATIBO) is an umbrella document that covers research, development, technical demonstration and technology insertion activity in the two Defense Departments and “grandfathers” activity performed by NATIBO under the charter. The MOU allows three basic activities: Information Exchange, the creation of Working Groups, and formal Project Arrangements (PAs). The MOU provides a recognized framework for which funds can be transferred between the participants in support of NATIBO studies and projects.

The objectives of the MOU are to:

- Effectively leverage dollars/resources and reduce redundant efforts through bilateral cooperation on studies and projects relating to the defense technology and industrial base of the USA and Canada.
- Achieve rapid technology insertion and commercialization of emerging technologies that can be used in the manufacture and repair of military weapon systems.
- Permit a wide variety of work to be accomplished on a single project from paper studies and initial research to technology insertion efforts.

Organization

The NATIBO is co-chaired by the Director, Office of Technology Transition (OTT), for the U.S. and the Director General, International & Industry Programs (DGIIP, for Canada. U.S. members represent the Office of Secretary of Defense (OSD), Army, Navy, Air Force, Missile Defense Agency (MDA), Defense Logistics Agency (DLA), and Defense Contract Management Agency (DCMA). Canadian representation is from the Department of National Defence (DND). These representatives form the Steering Committee and provide strategic direction, make recommendations on proposed projects, review the progress of the organization, and act as a conduit for addressing recommendations to U.S. and Canadian authorities. Under the provisions of the MOU, Terms of Reference (TOR) for the Steering Committee were prepared, staffed and implemented July 11, 2001. There are five observing organizations that provide assistance to the Steering Committee as appropriate. These observers are the U.S. Federal Emergency Management Agency (FEMA), U.S. Department of Commerce (DoC), Public Works and Government Services Canada (PWGSC), Industry Canada (IC), and Canadian Commercial Corporation (CCC).

Steering Committee Members

Mr. John Todaro, U.S. Co-Chair
Mrs. Cynthia Gonsalves, OSD
Mr. Luis Garcia-Baco, U.S. Army
Mr. John Carney, U.S. Navy
COL Craig Kimberlin, U.S. Air Force
Mr. Steven Linder, MDA
Mr. John Christensen, DLA
Mr. William Ennis, DCMA
Mr. David Shaffer, U.S. Army

Mr. John Neri, Canadian Co-Chair
Mr. Michael Slack, DGIIP

Secretariat

The U.S. Army Materiel Systems Analysis Activity is the NATIBO Secretariat. The Secretariat is responsible for all business management functions in support of the NATIBO, including the planning and recording of meetings, the correspondence with and between sub-committees, the maintenance of a central repository of data/files on NATIBO activities, and other business management duties as assigned by the Steering Committee. The Secretariat is also responsible for selected functions in support of the MOU.

Business Development Working Group (BDWG)

The BDWG provides a permanent forum for the exchange of views on the means of utilizing the technology and industrial base to meet defense program objectives, and through this forum identify mutually beneficial cooperative technology and industrial base activities between DoD and DND. The BDWG will also facilitate exploratory discussions and review documentation prepared by proponents for the purpose of

establishing a Working Group or PA under the provisions of the MOU. The BDWG will also advocate and increase awareness of all NATIBO sponsored activities.

Calendar Year 2005 Activity

Operations and Three Year Business Plan. Following the 2004 Steering Committee Meeting, the NATIBO Co-Chairs tasked the BDWG to develop a dynamic Business Plan to provide direction for the NATIBO. The Plan covers the period from January 1, 2005 through December 31, 2007. In the process of developing the Plan, the BDWG identified NATIBO's who, what, when, and where in the following Mission Statement: "In support of North American national security, the NATIBO facilitates technology and industrial base efforts between the U.S. and Canadian Defense Departments."

The Plan allows the NATIBO Co-Chairs, Steering Committee, Secretariat, and Business Development Working Group to focus resources to obtain identified goals, layout processes, generate specific products, and measure progress. Several work plans are identified in the Business Plan:

- The Advocacy Plan which includes initiatives to redesign the website to add expanded information on leveraging NATIBO products and processes.
- Work is currently underway on the 2nd and 3rd Work Plans in the form of two HD-related studies:
 - 1) Potential Areas for DND/DoD Cooperation on Homeland Defense
 - 2) First Responder Access to Military Equipment
- Revise the MOU, which was signed in 2001, to include U.S. export control-related language and to add other improvements.
- The Airborne Surveillance Work Plan will identify common U.S./Canadian airborne surveillance technologies, systems and techniques that Homeland Defense and Homeland Security could utilize.

Working Groups Established. The NATIBO MOU continues to generate considerable interest. The following Working Group was established this calendar year.

- **Homeland Defense Working Group (HDWG).** The HDWG was established to monitor the respective initiatives/projects of the U.S. DoD/HD and DND, to identify potential HD-related cooperative projects and to conduct bilateral HD-related studies/projects under the NATIBO MOU. In addition, the HDWG will provide the framework for the exchange of information and identify potential Project Arrangements (PAs) for the DoD (Office of the Assistant Secretary of Defense for HD), Department of Homeland Security (DHS), DND, Public Safety and Emergency Preparedness Canada (PSEPC) and First Responders. The TOR was signed on April 6, 2005.
- **HDWG Work Plans.** Two HD-related studies were identified in the NATIBO Business Plan. The HDWG completed their research in late CY2005 and began drafting two separate reports documenting the results of their studies.

- The purpose of the first study, entitled “Potential Areas for DND/DoD Cooperation on Homeland Defense,” was to identify current cooperative DND/DoD HD initiatives in the fields of acquisition, logistics and technology. The study identifies ongoing or planned projects and programs and gaps in current planning and provides recommendations for future cooperative projects and programs.
- The purpose of the second study, which is entitled “Military Equipment for First Responders: Benefits and Challenges for DoD and DND Cooperation,” is to enhance the First Responders (FRs) preparedness in both countries by giving them access and use to the best equipment, technologies, training and exercise resources available to the Canadian and U.S. military forces. This study identifies barriers to the transfer of critical equipment/items in either the U.S. or Canada. The term “transfer” stands for both the direct delivery of equipment and acquisition of pertinent military equipment by FRs.
- It is envisioned that these two studies will lay out the framework by which both Defense Departments will achieve true bilateral acquisition and logistics cooperation in the domain of HD for the foreseeable future

Ongoing Efforts from 2004. The NATIBO MOU was signed in the spring of 2001 and several working groups were established from 2001 through 2003. These working groups continue to work under and support NATIBO MOU objectives.

- **BDWG.** The BDWG had a variety of inquiries from potential users, mostly via phone call, regarding the use of the NATIBO MOU on a broad spectrum of topics. Several projects were not within the scope of the MOU and the BDWG suggested other international agreements or referred proponents to their International Programs Office for guidance.
- **Multi-Service Regenerative Electrolyzer Fuel Cell Working Group (MREFWG).** The program is continued to be underwritten by a "Purple Consortium" that includes the U.S. Navy ONR/Crane, U.S. Air Force Warner Robbins AFB, U.S. Marine Corps ONR/Expeditionary Power, the Corp of Engineers Construction Engineering Research Laboratory, U.S. Army RDECOM TARDEC and NASA/Glenn. The successful completion of Phase III marked the end of CY2005. Throughout the course of CY2005 the Phase III prototype was built and tested. Initial desire was to have the unit tested at a proving ground; however, due to circumstances, the testing for Phase III was conducted on-site at TACOM. The testing largely utilized simulating the power supply and power demand for "Silent Watch" testing. Results showed the Stryker Reconnaissance Vehicle (~0.5kW) to be around 65 hours, while the Command Vehicle (1.5kW) was around 30 hours. The MREFWG has continued to enjoy multiple Program Executive Office/Project Manager endorsements that included early support from the Project Manager Stryker Brigade Combat Team. The MREF Auxiliary Power Unit is of a modular

design and the componentry can be readily broken out into additional platform spaces and purposes such as forklifts, boats/ships and future propulsion venues.

- **Light Armored Vehicle Working Group (LAVWG).** The LAVWG has had no activity under the NATIBO MOU in the past year. However, meetings have been conducted under the Data Exchange Agreement (DEA) on Light Armored Ground Combat Vehicles between the Canadian LAV III Office and the Stryker Office. Both offices have established a collaborative program to develop a mine protection kit for the LAV IIIs and the Strykers.
- **Medium Logistics Vehicle Replacement Working Group (MLVRWG).** Although the MLVRWG has had no activity in CY2005 that produced any significant results, the group is expecting enhanced activity within the second half of CY2006.
- **Army Tactical Communication and Information System Modeling Working Group (ATCISM WG).** The ATCISM WG has had no activity in the past year that produced any significant results. There are no plans to extend the ATCISM WG TOR period beyond the April 2006 expiration date.

NATIBO Website. As one of the initiatives of NATIBO's Operations and Three Year Business Plan, the website was redesigned during 2005. Information on existing NATIBO working groups, briefings, and publications is included on the site. The website also has information, including examples, on how to prepare required documentation when forming a working group or preparing a PA to be implemented under the MOU.

The enhanced site will be launched in early 2006. The URL for the enhanced website is <http://www.acq.osd.mil/ott/natibo/>. Updates will continue to be made when appropriate.

Steering Committee Meeting. The CY2005 Steering Committee meeting, hosted by Canada's Department of National Defence, was held June 14-15 in Victoria, British Columbia, Canada. In addition to the business meeting, attendees toured the Canadian Forces Base (CFB) Esquimalt, Headquarters of Canada's Maritime Forces Pacific (MARFAC). Participants also toured Her Majesty's Canadian Ship Algonquin; the Fleet Maintenance Facility (FMF) Cape Breton; the Acoustic Data Analysis Centre (ADAC (P)); and the Naval Officers Training Centre located at CFB Esquimalt.

Exhibit. The NATIBO exhibit is displayed at selected forums, conferences and expositions. The exhibit was placed and staffed at the 2005 Defense Manufacturing Conference held November 28-30. This forum provided an opportunity for approximately 1,000 leaders from government, industry and academia to exchange perspectives and information about critical DoD technology and sustainment initiatives.

Presentations. Members are frequently invited to make presentations on NATIBO projects to their senior staff or other departments, agencies, activities. In response to

calls for papers, submissions are frequently selected for presentation at conferences and symposiums. Some of these events are described below.

- Defense Manufacturing Conference 2005, November 30, 2005, Orlando, FL, Technology Transfer briefing, Mrs. Cynthia Gonsalves
- Defense Manufacturing Conference 2005, November 30, 2005, Orlando, FL, NATIBO briefing, Major Robert Boucher
- Armaments Cooperation Management Committee, December 2005, Ottawa, Ontario, NATIBO Update Briefing, Mr. Steve Dundas
- Air Force U.S.-Canada Agreement Review, Washington, DC, December 5, 2005, Major Robert Boucher

Awards. The NATIBO Certificate of Achievement was presented to Mr. Jim Miodek in recognition for his outstanding contribution as the U.S. Project Officer for the Multi-service Regenerative Electrolyzer Fuel Cell Working Group. Mr. Miodek retired in December 2004 and was replaced by Mr. Chris Spangler in January 2005.

Funding

The NATIBO has no direct funding line in U.S. or Canadian defense budget systems. Projects are funded from the operating budget of member organizations. The U.S. Army, U.S. Navy, U.S. Air Force and Canada's Department of National Defence equitably support the NATIBO Secretariat.

The NATIBO functions with 'payment in kind' contributions from its members. The U.S. Army prints and publishes studies and brochures. The U.S. Air Force pays expenses associated with the exhibit. OSD sponsors the website and Canada has provided materiel for the exhibit. All the Services and Canada have had employees staff the exhibit at events.

Planned Activities for Calendar Year 2006

BDWG. The BDWG will continue to work with prospective users of the MOU to ensure that prospective activity is consistent with the objectives of the NATIBO MOU. They will assist users in the preparation and staffing of documentation required for international activity. The BDWG will continue to work closely with the Steering Committee and Co-Chairs regarding the business activity of the NATIBO.

- **Multi-Service Regenerative Electrolyzer Fuel Cell Working Group (MREFWG).** Expectations are that Phase IV of the project will begin in early 2006. Phase IV will consist of the packaging and integration of the MREF Auxiliary Power Unit (APU) inside of a Stryker vehicle and/or Coyote vehicle. The design should include ability to withstand harsh conditions and military ruggedness. Field testing would include a series of "Silent Watch" scenarios and potential mobile tests. The US and Canada will work collaboratively to identify and structure the requirements, output desired, and funding for this

phase. Anticipate this working group will draft and staff a Project Arrangement for Phase IV in CY2006. Phase V of the MREF APU effort would likely involve full military testing. The unit will undergo destructive, dust, fog, and lifetime checks with over 1,000 hours of operations. Phase V may take up to 2 years to complete.

- **US/CA Critical Infrastructure Protection/Defense Industrial Base Working Group (CIP/DIB WG).** The BDWG initiated action late in CY2005 to establish the US/CA Critical Infrastructure Protection/Defense Industrial Base Working Group (CIP/DIB WG). The purpose of the CIP/DIB WG will be to share information, provide guidance, monitor progress against the workplan, and develop joint interaction with respect to the critical assets identification, assessment and assurance of the Defense Industrial Base Sector. In addition, the CIP/DIB WG will provide the framework for the exchange of information, identification of potential Project Arrangements. The U.S. Project Officer is from the Office of the Assistant Secretary of Defense for Homeland Defense and Canada's Project Officer is from the National Defence Headquarters. The CIP/DIB WG is expected to stand up in early CY2006.
- **US/CA Homeland Defense Working Group (HDWG).** The HDWG will finish drafting and staffing the reports that document the group's findings, conclusions, and recommendations on the two HD studies conducted during CY2005. The final reports will be published prior to the June 2006 Steering Committee Meeting.

Operations and Three Year Business Plan. The Critical Infrastructure Protection Work Plan mentioned in the U.S./Canada CIP/DIB WG TOR will be added to the Business Plan as a new work plan. Looking ahead in 2006 and beyond, the BDWG will actively seek opportunities for additional collaborative activities/studies planning. The Plan will be updated to include new projects and activities as appropriate.

Exhibit Schedule. The tentative NATIBO exhibit schedule for CY2006 follows:

November Defense Manufacturing Conference, Nashville, Tennessee

The BDWG is also exploring possibilities to display the exhibit at a few of the large Service related conferences that are heavily attended by Program Managers.

Conclusion

The NATIBO is a driving force behind the U.S./Canadian defense technology and industrial base program. It is an organized vehicle for coordination and cooperation between the two Defense Departments. The 21st Century provides us with an opportunity to shape a safer, freer world. By working together for the interests and values we share, we can respond to the political and humanitarian crises affecting so much of the world.

In an era of declining defense budgets, changing threats to national security, and increasing “equipment geriatrics,” the North American technology and industrial base faces the challenges of advancing and maintaining technological superiority with reduced government research and development funding. Meeting these challenges requires the leveraging and promoting of commercial use and investment in technologies which will have both defense and industrial applications. Broadening the technology industrial base to include both US and Canadian resources so that investment costs may be shared across a broader base will better prepare us to face these challenges and improve the affordability of defense systems. The key to the future is rational use of industrial, economic, and technological resources in the U.S. and Canada to achieve the greatest attainable military capability at the lowest cost. In this regard, NATIBO is considered to be one of the organizations that could be utilized to achieve that end.