



Arctic Planning Scenarios

Scenario #2 – Safety and Security Scenario

David Mugridge
Peter Avis
Lansdowne Technologies Inc.

Peter Race
CAE Professional Services (Canada) Inc.

DRDC CORA CR 2011-098
July 2011

Defence R&D Canada
Centre for Operational Research & Analysis

Strategic Analysis Section

Arctic Planning Scenarios

Scenario #2 - Safety and Security Scenario

David Mugridge
Peter Avis
Lansdowne Technologies Inc.

Peter Race
CAE Professional Services (Canada) Inc.

Prepared By:
Lansdowne Technologies Inc.
1001-247 Slater Street
Ottawa ON, K1P 5H9
Contractor's Document Number:
Contract Project Manager: Peter Avis, 613-747-8121
PWGSC Contract Number: NMSOW24062-030150/035/ZG
CSA: Shaye K. Friesen/Peter Archambault, DRDC CORA, 613-947-9698/613-990-3650

The scientific or technical validity of this Contract Report is entirely the responsibility of the Contractor and the contents do not necessarily have the approval or endorsement of Defence R&D Canada.

Defence R&D Canada – CORA

Contract Report
DRDC CORA CR 2011-098
July 2011

Principal Author

Original signed by P. Avis; D. Mugridge; P. Race

P. Avis; D. Mugridge; P. Race

Lansdowne; CAE PS

Approved by

Original signed by Dr. Greg Smolyne

Dr. Greg Smolyne

Section Head - Strategic Analysis

Approved for release by

Original signed by Paul Comeau

Paul Comeau

DRDC CORA Chief Scientist

Defence R&D Canada – Centre for Operational Research and Analysis (CORA)

© Her Majesty the Queen in Right of Canada, as represented by the Minister of National Defence, 2011

© Sa Majesté la Reine (en droit du Canada), telle que représentée par le ministre de la Défense nationale, 2011

Abstract

With the change in Northern climate over the past decade, current policy and media discussions have focused on the future of the Arctic. DRDC CORA has taken on a number of thrusts, including the development of a Capability Inventory Tool (CIT) to identify and characterize legislation and policy on the Arctic, with a view to developing scenarios for future planning. This report presents one of two scenarios, focused on a public safety and security-centric response scenario. The scenario makes use of the CIT to present an overview of the current situation, presents a projection out to 2020 to set context for a security environment in which illegal trafficking via northern routes poses a significant challenge to security in the Arctic. It is designed to stimulate several functions and mandates involved in Canadian emergency response and management, focusing on eliciting a Whole of Government (WoG) response. While all efforts have been taken to present a plausible scenario, it is not based on any intelligence assessments and is not intended to be considered a likely future. Rather, it presents a context for testing a range of capabilities required for Canada to be able to meet its strategy and policy objectives.

Résumé

Compte tenu des changements survenus dans le climat nordique au cours des dix dernières années, la politique actuelle et les discussions dans les médias portent essentiellement sur l'avenir de l'Arctique. RDDC CARO a entrepris un certain nombre d'activités, y compris le développement d'un outil d'inventaire des capacités (OIC) pour déterminer et caractériser les lois et les politiques sur l'Arctique, en vue d'élaborer des scénarios pour la planification future. Ce rapport présente l'un des scénarios, qui est axé sur une intervention centrée sur la sûreté et la sécurité publiques. Le scénario utilise l'outil d'inventaire des capacités (OIC) pour présenter un aperçu de la situation actuelle et fait une projection jusqu'en 2020 en vue d'établir le contexte pour l'environnement de sécurité dans lequel le transport illégal de marchandises à travers les routes du Nord pose un important problème à la sécurité dans l'Arctique. Il vise à stimuler de nombreuses fonctions et mandats qu'impliquent l'intervention d'urgence et la gestion connexe au Canada, en suscitant une intervention pangouvernementale. Bien que toutes les mesures aient été prises pour présenter un scénario plausible, celui-ci n'est pas basé sur des évaluations du renseignement et ne constitue pas un futur probable. Au contraire, il présente un cadre pour la mise à l'essai d'une gamme de capacités dont le Canada a besoin pour atteindre ses objectifs stratégiques et politiques.

This page intentionally left blank.

Executive summary

Arctic Planning Scenarios: Scenario #2 - Safety and Security Scenario

Mugridge, D; Avis, P.; Race, P.; DRDC CORA CR 2011-098; Defence R&D Canada – CORA; July 2011.

Introduction or background: With the change in Northern climate over the past decade, current policy and media discussions have focused on the future of the Arctic. DRDC CORA has taken on a number of research projects, including the development of two Arctic Security Scenarios, a scenario development methodology, and a Capability Inventory Tool (CIT) to identify and characterize legislation and policy on the Arctic, with a view to developing scenarios for future planning. This report presents one of two scenarios, focused on a safety and security centric response.

Results: The scenario makes use of open source references and the CIT to present an overview of the current situation, presents a projection out to 2020 to set the context for a future security environment in which there are threats of illegal immigration, organized crime, and human smuggling and illegal narcotic importation that piggy-back onto the increased shipping and tourism that is likely to take place. The use of the northern approaches for illegal activity and entrance into North America is seen to be a common concern. While all efforts have been taken to present a plausible scenario, it is not based on any formal intelligence assessments and is not intended to be considered a likely future. Rather, it presents a forum designed to test a range of capabilities required for Canada to be able to meet its strategy and policy objectives.

Significance: CORA defence scientists and researchers as well as planners from the Chief of Force Development (CFD) and others involved in Canadian defence planning will need a full set of scenarios to evaluate current and potential future capabilities in an Arctic context. This scenario, building upon select historical trends, current events, and academic projections, is designed to test CF capabilities within the context of current strategy, policy and doctrine. While not being prescriptive, the audience will become more informed on the challenges and constraints of operating in Canada's North.

Future plans: This scenario will prove itself useful for the research, the planning, and the operational communities for the examination of operational capabilities in the Arctic in the future. In addition, the "side products" to this scenario – the scenario development methodology and CIT – were created to exist beyond this document. It is hoped that all of these deliverables serve a lasting purpose within the operational research and analysis community.

Sommaire

Arctic Planning Scenarios: Scenario #2 - Safety and Security Scenario

Mugridge, D; Avis, P.; Race, P.; DRDC CORA CR 2011-098; Defence R&D Canada – CARO; Juillet 2011.

Introduction ou contexte : Compte tenu des changements survenus dans le climat nordique au cours des dix dernières années, la politique actuelle et les discussions dans les médias portent essentiellement sur l'avenir de l'Arctique. RDDC CARO a entrepris un certain nombre de projets de recherche, y compris le développement de deux scénarios de sécurité, une méthodologie d'élaboration de scénarios et un outil d'inventaire des capacités (OIC) pour déterminer et caractériser les lois et les politiques sur l'Arctique, en vue d'élaborer des scénarios pour la planification future. Le rapport présente l'un des scénarios, qui est axé sur une intervention centrée sur la sûreté et la sécurité publiques.

Résultats : Le scénario utilise des sources ouvertes et l'outil d'inventaire des capacités (OIC) pour présenter un aperçu de la situation actuelle et fait une projection jusqu'en 2020 en vue d'établir le contexte pour l'environnement de sécurité dans lequel il y a des risques d'immigration illégale, de crime organisé, ainsi que du passage de clandestins et de l'importation illicite de stupéfiants, qui tirent avantage de l'accroissement très probable de la navigation commerciale et du tourisme. L'utilisation des voies nordiques pour des activités illégales et comme porte d'entrée en Amérique du Nord est perçue comme une préoccupation commune. Bien que toutes les mesures aient été prises pour présenter un scénario plausible, celui-ci n'est pas basé sur des évaluations du renseignement et ne constitue pas un futur probable. Au contraire, il présente un cadre pour la mise à l'essai d'une gamme de capacités dont le Canada a besoin pour atteindre ses objectifs stratégiques et politiques.

Importance : Les scientifiques et les chercheurs du secteur de la défense de CARO ainsi que les planificateurs de l'organisation Chef – Développement des forces (CDF) et d'autres personnes qui participent à la planification de la défense du Canada auront besoin d'un jeu complet de scénarios pour évaluer les capacités actuelles et futures éventuelles dans le contexte de l'Arctique. Le présent scénario, basé sur des tendances historiques choisies, des événements d'actualité et des projections académiques, a pour but de mettre à l'essai les capacités des FC dans le contexte de la stratégie, de la politique et de la doctrine actuelles. Sans toutefois être normatif, le scénario informera davantage le public des difficultés et des contraintes connexes aux opérations dans le Nord du Canada.

Perspectives : Le scénario s'avérera utile pour les chercheurs, les planificateurs et les collectivités opérationnelles pour l'examen des capacités opérationnelles futures dans l'Arctique. De plus, il a pour effet parallèle additionnel la création d'une méthodologie d'élaboration de scénarios et d'un outil d'inventaire des capacités. On espère que tous ces produits livrables auront une utilité durable pour la collectivité des chercheurs et des analystes.

Table of contents

Abstract	i
Résumé	i
Executive summary	iii
Sommaire	iv
Table of contents	v
Acknowledgements	vii
1 Introduction.....	1
1.1 Assumptions	1
1.2 Scenario Outline	2
2 Strategic Environment (Winter 2010).....	3
2.1 The Arctic Environment	4
2.1.1 Change in the North	4
2.1.2 Distances	4
2.1.3 Arctic Infrastructure	4
2.1.4 Logistics Support	5
2.1.5 Search and Rescue.....	5
2.2 A Strategic Viewpoint -- Dr. Rob Huebert [3]	5
2.3 Diplomatic Shifts in the Warming Arctic.....	6
2.4 Threat of Illegal Migration through the Arctic.....	8
2.4.1 Threat of Organized Crime	9
2.5 Role of CSIS & Priority Areas	10
2.6 Role of RCMP and Priority Areas.....	10
2.7 Role of CBSA and Priority Areas.....	11
2.8 Immigration and Refugee Policy	12
2.9 Articles 3 and 5 of the Protocol on Trafficking in Persons	13
2.10 Shipping and the Arctic	13
2.10.1 Arctic Shipping and the Law.....	14
2.10.2 Climate Change and Its Impacts on Shipping	15
2.10.3 Impacts on Shipping.....	15
2.10.4 Cruise Ships	15
3 Strategic Assumptions and Environment 2020.....	17
3.1 Assumptions 2010-2020	17
4 Projected Arctic Tension in 2020 – Proximal Causes	18
4.1 Security (Law Enforcement and Defence)	18
4.2 Legal.....	19
4.3 Environmental	19

4.4	Economic.....	20
4.5	Political.....	21
4.6	Social.....	21
5	Scenario Events – Organized Crime in the North (2020).....	22
	References	25
	List of symbols/abbreviations/acronyms.....	28

Acknowledgements

The project team would like to acknowledge CORA Defence Scientists Shaye Friesen and Peter Archambault for their guidance and contribution to this report. Their advice and effort elevated the final result to what is presented here.

This page intentionally left blank.

1 Introduction

Over the next decade, Canada's involvement in the Arctic will likely increase and take on a heightened strategic importance for the country. The ever-intensifying Arctic strategy and policy of the Government of Canada frames a vision that will require new capabilities for ensuring sovereignty, public safety, and security in the North. Scenarios serve as a context for characterizing the operating environment, shape planning and training. This scenario was prepared for Defence Research & Development Canada's Centre for Operational Research and Analysis (DRDC CORA) as a means to describe one possible multi-dimensional public safety and security scenario for considering future Canadian capabilities in responding to a complex emergency in the Arctic.

This safety and security scenario was developed based on current Canadian strategy, policy, and legislation, as well as independent research to ensure that sound logic formed the foundation for the flow of events within the scenario. The scenario events portrayed are fictional, and were selected to capture what the authors considered core aspects of a future Arctic operating environment which would assuredly require interdepartmental cooperation and whole of government, even whole of nation, approaches to managing emergencies in the North.

Much of the contextual information is based directly on primary and published secondary sources. Where possible, the original text is used, with additional annotations by the authors to provide sufficient context to the final events. All references have been duly footnoted and annotated in order to confer the appropriate recognition of authorship.

1.1 Assumptions

The following scenario was developed with the following assumptions:

- The scenario is set in the mid-term future (2020);
- The scenario was selected based on the methodology laid out in a separate contractor report. As a result, it was selected to incorporate the greatest number of scenario dimensions or attributes to evaluate arctic capabilities. It is focused on a Whole of Government (WoG) response, involving multiple departmental mandates, as well as international jurisdictional considerations;
- Scenarios are grounded in current policy and strategy, which is assumed to continue through to the scenario events in 2020; and
- The extrapolation of future events is selective to ensure plausibility, but is not based on defence intelligence assessments (i.e. no assessment with likelihood is associated with this scenario).
- The scenario is developed as a skeleton for high-level planning activities, and as such provides only the amount of information necessary for initial mission analysis and gap analysis activities. In its current form, it does not contain the level of detail required for training exercises. However, the scenario structure provides the skeleton necessary to develop a future Master Scenario Events List (MSEL).

1.2 Scenario Outline

This scenario is divided into three sections:

- Section 1: Strategic environment (Winter 2010). This section outlines the current strategic environment for the Arctic, and includes all of the underlying factors that will set the foundation for the rest of the scenario;
- Section 2: Proximal Events (2020): This presents a multi-dimensional perspective of the security environment in 2020.
- Section 3: Scenario Events and Triggering Events (2020): Outlines the high-level scenario event timeline.

A separate contractor report to the scenario includes coverage of the overall scenario development methodology to serve as a guide for scenario developers.

2 Strategic Environment (Winter 2010)

While many say that terrorism changed the battle-space after the events of 9/11 in 2001, it is certainly safe to say that in 2010 Canadians live in a world characterized by volatility and unpredictability. The 1990s saw the emergence of difficult security challenges, including failed and failing states, civil wars, and global / non-state terrorism. Many countries, including Canada, were slow to fully appreciate and adjust to these new realities. Today, in 2010, we all live in an uncertain world; and its security challenges are very real. Globalization has resulted in a situation in which developments abroad can have a profound impact on the safety and interests of Canadians at home. Ethnic and border conflicts, fragile states, insurrection against regimes of long-standing dictators (particularly in the Arab world), resurgent nationalism, and global criminal networks continue to threaten international stability. In addition, unequal access to resources, uncertain food supplies and uneven economic distribution are proving to be sources of increasing regional tension. [22]

The proliferation of advanced weapons and the potential emergence of new, nuclear-capable adversarial states headed by unpredictable regimes are particularly worrisome. Canada also faces challenges on the home front. Natural disasters such as ice storms, floods, forest fires, hurricanes, and earthquakes increasingly test the capabilities of local authorities.

In Canada's Arctic region, changing weather patterns are altering the environment, making it more accessible to sea traffic and economic activity. Retreating ice cover has opened the way for increased shipping, tourism, and resource exploitation. Moreover, new transportation routes are being considered, including through the Northwest Passage and routes to ports in Hudson Bay. While this promises substantial economic benefits for Canada, it has also resulted in new challenges in guaranteeing public safety and security and responding to potential catastrophic events in the North. Changes in the Arctic could also spark an increase in criminal activity with important implications for Canadian sovereignty and security. This situation could very likely cause a potential requirement for additional military support in events where law enforcement (RCMP) or Customs and Border Service Agency (CBSA) officials will require support to enforce the laws of the land.¹

For Canada, one of the greatest challenges is determining what is determining the relationship between Arctic sovereignty and security. Throughout much of the Cold War, Arctic security became associated with defence against the Soviet Union, a mission primarily left to the US. Canada did cooperate with the US in the establishment of the Distant Early Warning (DEW) Line and North American Aerospace Defence Command (NORAD), but Canada allowed the US to pay for most of these and left the maritime dimensions of Arctic security entirely in American hands. [3]

However, today's sovereignty and security are interconnected and cannot and should not be separated. In the international system of the 21st century, sovereignty is the ability of a government of a people to enforce a final, authoritative decision within a territory that has a clearly defined set of borders. The existence of sovereignty is ultimately confirmed when other members of the international community accept the right of the government to make and enforce

¹ RCMP & CBSA are both agencies within PSC.

decisions within these borders. [3] Within the accepted borders of Canada then, the Canadian government will have to assert its decisions that affect National Security and North American security.

2.1 The Arctic Environment

2.1.1 Change in the North

The summer of 2010 saw the third-lowest amount and extent of Arctic sea ice ever recorded. By the end of summer 2010, sea ice covered only 4.6 million km² of the 14.1m km² Arctic Ocean. [1] This was 31% below the average summer minimum during the last two decades of the twentieth century, marking a continuing trend of decreasing ice minimums, ice cover, and overall volume of ice in the last ten years leading up to 2015. Change is also visible in winter ice cover: the maximum extent in March 2010 was 4% below the 1979–2000 average of 15.8m km², an area greater than the Arctic Ocean itself, since many areas outside the Arctic also freeze. The extent of ice cover is not the only story. Given that the proportion of multi-year to newly-formed ice is also declining, the likelihood of an accessible Arctic is increasing. Some projections, such as the Intergovernmental Panel on Climate Change's (IPCC) 2007 Assessment Report, predict an ice-free Arctic by the end of the twenty-first century, with others predicting ice-free seasons decades earlier.[1]

2.1.2 Distances

For comparison purposes, the distances between most Canadian cities is less than the distance maritime forces would have to travel when operating in the Canadian Arctic Archipelago. It is not until one begins to travel from Victoria to Montreal, or from Victoria to Halifax that one begins to approach distances similar to those required to travel from either Halifax or Esquimalt to Nanisivik. While there is certainly no intention to suggest that the Arctic is a foreign or international operational environment, the vast distances involved make it a uniquely challenging environment. Additionally, the lack of infrastructure and support facilities also complicates maritime operations in the North.

2.1.3 Arctic Infrastructure

From a strategic perspective, the Arctic's lack of infrastructure – particularly maritime infrastructure such as port facilities, modern hydro-graphic data and support services – directly influences the level of risk associated when transiting northern waterways. In more temperate maritime areas, deepwater ports, support, and service facilities are typically located close to major Sea Lines Of Communication (SLOCs). The situation in the Arctic, however, is vastly different. Deepwater ports, places of refuge, and adequate support facilities are either not located closely together, or rarely available. The anticipated increase in human and maritime Arctic activity will place an even greater strain on the limited infrastructure of the circumpolar states and the environment.

The Government of Canada has also proposed the development of a deepwater resupply port at Nanisivik on Baffin Island, and a Joint Arctic Warfare Training Centre at Resolute Bay.

Nanisivik is not situated near a major population center, near a major shipping route, or near a Railroad, but will be used primarily by DND to defend and enhance Canadian sovereignty and security in the North.

2.1.4 Logistics Support

The limited number of logistical and operational infrastructure hubs in Canada's Arctic places considerable pressure on the Canadian Forces' limited logistical capabilities. In the Arctic, two distinct situations exist in relation to the provision of logistics. The first situation is when an incident occurs within a reasonable distance of established infrastructure and support networks. The second situation is when an incident occurs in a more remote setting, or requires a significant response from the south. However, more remote incidents require logistical support over vast distances. Even with the proposed infrastructure upgrades at Resolute Bay and Nanisivik, the distances between points of infrastructure, coupled with the unpredictability of weather, may complicate access to and supply of operations. Arctic operations call for mobile and self-sustaining logistical networks.

2.1.5 Search and Rescue

From a domestic perspective, the use of the Arctic for shipping purposes creates several challenges for the CF. Regardless of whether maritime traffic is Trans-Arctic, intra- Arctic, or destinational, the requirement for patrolling, monitoring, and providing search and rescue (SAR) and other services in the north may become routine before climatic conditions realistically permit. In addition, the distances involved in patrolling, monitoring, and responding to events in these waterways are vast. Working with other Canadian SAR partners, the CF plays a vital role in a world-class SAR system that answers the call of those in need. Today, the CF annually responds to approximately 8000 incidents, tasking military aircraft or ships in about 1100 cases; historically, these actions have saved on average over 1200 lives and provided assistance to over 20,000 persons each year. [8] SAR in the North as human activity increases will sorely test the capabilities of Arctic nations to respond.

2.2 A Strategic Viewpoint -- Dr. Rob Huebert [3]

As one of Canada's pre-eminent Arctic experts it is appropriate to include this extract from Huebert's catalogue of articles on the Arctic and Canada's North. This section is included to provide the reader with an illustration of the strategic viewpoint from this Canadian source.

"A new Arctic age is emerging. New forces are transforming the very fabric of the entire region. Some of these changes will positively benefit those people who call the region home, while some will have negative impacts. Decision-makers in the Arctic nations will need to be increasingly mindful of these changes and need to develop policies that are innovative, proactive and intelligent.

Climate change is transforming the physical nature of the north. Arctic ice is melting at a record rate. Burgeoning natural resources development is already creating new economic and environmental realities in the region. In a very short timeframe, Canada has moved from being a

non diamond producer to being the third largest producer of diamonds in the world on the strength of its Arctic mines. Oil and gas companies are preparing for large-scale exploration projects in the waters off the Mackenzie Delta into the Beaufort Sea. The entire geo-political nature of the region is also rapidly evolving. The United Nation's Convention of the Law of the Sea (UNCLOS) is redrawing the boundaries of the Arctic Ocean and most of Canada's Arctic neighbours are revitalizing their Arctic security capabilities.

The challenges of developing a rational and proactive Arctic policy are formidable. While the Arctic is changing, it is still, and will remain, a very expensive place to do business. But more problematic is the current nature of Arctic affairs. While the forces that are transforming the region are only now being appreciated, their long-term impacts are not yet understood. Change is coming, but it is not clear what that change ultimately will be. Further complicating the picture is the lack of understanding as to how these forces will interact in both the short and long term.”

2.3 Diplomatic Shifts in the Warming Arctic

As has been mentioned, the summer of 2010 saw the third-lowest amount and extent of Arctic sea ice ever recorded. The Northwest Passage between Greenland and Alaska and the Northern Sea Route between Norway and Kamchatka were ice-free – something that had not happened before 2008 in recorded history. [1] As the physical state of the High North has changed, so too has the diplomatic and geopolitical environments.

International governance in the Arctic is dominated by a complex web of interlocking and overlapping bilateral and multilateral agreements and institutions, mostly dealing with narrow topics such as maritime safety and regulation, search and rescue, and environmental protection. Claims to 200-nautical-mile exclusive economic zones (EEZs) and to continental shelves extending beyond 200nm are subject to the 1982 UN Convention on the Law of the Sea (UNCLOS). Norway and Russia have submitted claims to an extended continental shelf; Canada and Denmark have until 2013; the United States has not ratified the convention and would have ten years after ratification to make a claim.

The Arctic Council, established in 1996, comprises the five Arctic littoral states (Canada, Denmark, Norway, Russia and the US – collectively, the A5) and three other states – Finland, Iceland, and Sweden. A number of other European states, as well as some international organisations and NGOs, have observer status. Security issues are explicitly excluded from its remit. In the 2008 Ilulissat Declaration, the Arctic Council (and in particular the US) emphasized that existing legal frameworks (e.g. US Convention on Law of the Sea) were sufficient and that no additional “Arctic Treaty”, akin to the Antarctic Treaty, would be required. [2]

Since four of the five A5 states are members of NATO, there have been suggestions that the NATO–Russia Council could be the ideal forum for discussions of Arctic security. The foreign ministers of the A5 met in Chelsea, Canada, in March 2010, but little of substance was decided. There were concerns from non-A5 states, and even some of the A5, that this informal grouping excluded countries (and constituencies such as indigenous peoples) with strong stakes in the Arctic and undermined the Arctic Council.

The issue of Arctic sovereignty is complicated by the maritime dimension of the region. Within the international law of the sea, the right to make final decisions about what activities occur within maritime zones is not absolute but is modified by the nature of the waterway. Simply put, there are rules that reduce what states can do the farther one goes beyond the coastlines.

There are several potential territorial disputes that have yet to be harmonized. With the exception of Denmark's assertion of ownership of Hans Island, no other actors in the international system challenge Canada's right to control its Arctic land mass. However, the challenge does emerge over Canada's claim to its Arctic maritime space. The US disagrees with how to draw the boundary line dividing the Beaufort Sea. Likewise, Denmark disagrees on how to divide the Lincoln Sea (though only in two small regions.) It is also likely that Canada will have disagreements with the U.S., Russia and Denmark in its expected claim over its continental shelf boundaries in the Arctic Ocean. [3] Notably, Russian claim over the Lomonosov Range as an extension of its continental shelf would significantly increase its ability to use the area for resource exploration. The claim runs in competition with Canadian territorial interpretations.

All five Arctic littoral states have issued regional strategy documents in the last few years. All emphasise environmental protection and sustainability, scientific research, strengthening regional institutional arrangements, and engagement of indigenous peoples -- even where they include defence-related policies, sovereignty issues, and territorial claims.

An important element of the US strategy, embodied in a 9 January 2009 Presidential Directive on Arctic Policy, was prompt ratification of UNCLOS by the US Senate to support a range of US national security interests. The policy, although drafted by and issued in the closing days of the George W. Bush administration, reflects a broad bipartisan consensus. But there remains strong opposition on the part of a number of Republican senators: the political dynamics are similar to those with regard to ratification of the New START nuclear-disarmament treaty with Russia, a top priority of Barack Obama's administration at the time. This suggests that, whether or not New START is ratified by the end of the year, the chance of ratification of UNCLOS before the 2012 elections had declined significantly.

In August 2010, Canada issued its principal Arctic strategy document, the *Statement on Canada's Arctic Foreign Policy*, drawing on its earlier Northern Strategy. The exercise of sovereignty over the country's North is recognised as the most important foreign-policy priority. The search for and exploitation of new resources are identified as a potential security threats -- not because of conflict over ownership, but because it would lead to increased maritime vessel traffic, environmental threats, search-and-rescue emergencies, and illegal activities. The Statement sets out a whole-of-government approach to the exercise of sovereignty in which basing and operations of the Canadian Forces (CF), Canadian Coast Guard (CCG), and Royal Canadian Mounted Police (RCMP), are just one part. Nevertheless Canada, like Russia, is making significant investments in this regard. Ottawa is, moreover, cooperating with the US on missile defence, and in August 2010 the US took part in Canada's annual Arctic Security exercise, Operation NANOOK.

In contrast to Canada's position, in September 2010, after 40 years of negotiation, Norway and Russia signed a treaty on Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean. It settled overlapping claims to some 175,000 km² of continental shelf and 200nm EEZs, essentially splitting the difference between the claims. It also extends existing fisheries

cooperation agreements; but replaces an interim 'grey zone' agreement of 1978. There are also detailed provisions for cooperative exploitation and management of oil and gas deposits that might extend across the boundary. Hydrocarbon exploration in the disputed area has been on hold for more than 20 years pending agreement on the delimitation line.

The agreement is expected to put pressure on other Arctic nations to resolve outstanding territorial disputes – between Canada and Denmark, Canada and the US, and over the US–Russia boundary — so as to create a more stable framework for resource exploitation. Despite these outstanding disputes, and the unresolved and pending claims to extended EEZs under UNCLOS, the Arctic states have been cooperating widely on exploration and scientific research. In summer 2010, for example, the US and Canada conducted a joint research project in the disputed area of the Beaufort Sea. In October 2010, a new Arctic Regional Hydro-graphic Commission was established by the A5, making it the last region of the globe to be covered by a regional commission under the aegis of the International Hydro-graphic Organisation.

There have been suggestions that NATO might play an increased role in the High North, but there is no agreement among member states, and the region was not mentioned in the new NATO Strategic Concept adopted in November 2010. Denmark is the only European Union member among the A5, and it is an Arctic state only by virtue of its responsibility for the foreign affairs and defence of Greenland, which otherwise has home rule and is not part of the EU. The other three members of the Arctic Council, however, are also current (Sweden and Finland) or candidate (Iceland) EU members, and the EU has been gradually developing an Arctic policy, with a 2008 Commission report and another one in June 2011. An EU application for observer status at the Arctic Council was turned down in 2009 because of an expected EU import ban on seal products, eventually imposed in August 2010. [1]

2.4 Threat of Illegal Migration through the Arctic

The chilling prospect of terrorists or other extremists exploiting the Canadian Arctic has attracted the watchful eye of federal security agencies. One intelligence assessment raised the spectre of the North as a conduit for international or domestic radicals. “In recent years, vessels with links to human smuggling, drug trafficking, and organized crime have attempted to access the Canadian Arctic,” says the report. [4]

The assessment was prepared by the Integrated Threat Assessment Centre (ITAC), which includes representatives of the Canadian Security Intelligence Service (CSIS), the RCMP, and other law enforcement and security-related agencies. The January 2010 report, titled “The Canadian Arctic: Threat from Terrorists and Extremists,” indicates the security agencies are wary of threats from both within Canada and beyond its borders. [4]

The population of the Canadian Arctic has climbed 16 per cent over the last decade, and the vast, frozen region draws an increasing number of tourists, with some 15 cruise ships operating in its waters every summer, the report notes. Roadways and other infrastructure are limited due to the sprawling expanses of tundra and thawing permafrost; but that has not made the area immune to crime. The assessment points out that the RCMP works with other federal agencies to monitor incoming people and goods from the North, and a multi-agency border team patrols the Mackenzie River and other Arctic waterways.

“Issue-based activist groups in Canada continue to engage in generally peaceful protest activities to promote their respective causes,” the report states. “Some activist groups have also resorted to the use of direct action tactics to further their aims.” Furthermore, “While protest activities by activist groups generally take place in large urban centres, they have also occurred in remote locations, including the Canadian Arctic.” [4] The assessment also mentions that Osama bin Laden's al-Qaeda network has identified Canada as a target on several occasions, though any analysis of those threats in the northern context do not appear in report.

It is clear that the possibility of a terrorist attack in the North is highly unlikely. However, foreign extremists could take advantage of spotty surveillance in the region as a means of entering North America. “They're not going to attack a small-level target when they can attack a big-scale target. But the big concern has always been the North as an entry point.” [3] Mr. Huebert recalls the 1999 arrival of the Xue Long, a scientific research vessel, at Tuktoyaktuk, NWT. This vessel's appearance caught Canadian officials off guard – an event that suggests slipping into an Arctic port undetected is not as far-fetched as it might seem.

The RCMP has previously underscored the rapid loss of ice shelves in the Canadian Arctic due to rising temperatures. They predicted that the opening of viable shipping and navigation routes would lead to rising levels of marine traffic of all kinds in the area in 2007. In addition, labour market shortages in the North have prompted employers to turn to a foreign work force which “for the most part is not subjected to security screening prior to entering Canada,” the RCMP said. [4]

2.4.1 Threat of Organized Crime

Within Canadian law enforcement, a legal definition for organized crime has only existed since the late 1990's following the enactment of Bill C-95. Amendments to this area of the Criminal Code have led to the present legal definition found within section 467.1(1) of the *Criminal Code of Canada*, which states a "criminal organization" means a group, however organized, that:

- a. is composed of three or more persons in or outside Canada; and
- b. has as one of its main purposes or main activities the facilitation or commission of one or more serious offences, that, if committed, would likely result in the direct or indirect receipt of a material benefit, including a financial benefit, by the group or by any one of the persons who constitute the group.

Globally, a consensus on a definition for organized crime was reached in 2002. The UN Convention on Transnational Organized Crime, Article 2 defines "organized criminal group" as follows: a group having at least three members, taking some action in concert (i.e., together or in some coordinated manner) for the purpose of committing a 'serious crime' and for the purpose of obtaining a financial or other benefit. The group must have some internal organization or structure, and exist for some period of time before or after the actual commission of the offence(s) involved.

Most of the major international organized crime groups are active within Canada. These groups include: Asian, Eastern European, Italian and Latin American organizations; outlaw motorcycle gangs, and a variety of domestic groups. The fluid nature of modern organized crime makes it

difficult for law enforcers to cast their nets over or identify for public use the names of particular ethnic groups or motorcycle gangs; organized crime members often change partners when they commit crimes making trends hard to identify. New forms of transnational cooperation between organized criminal groups emerged in the closing decades of the 20th Century.

The RCMP has underscored the threat of organized crime and its widespread impact to all areas of Canadian society. Economic crimes committed by organized crime groups cost Canadians billions of dollars every year. The impacts of organized crime also go far beyond monetary effects. Violence, intimidation, and corruption are mainstays of many organized criminal groups. They affect public confidence in our most fundamental sources of solace and security our homes, neighbourhoods and communities. The RCMP is committed to helping ensure safe homes and safe communities.

Given the current and potential future impact of organized crime on Canadian safety and security, protection against entry via northern trading routes is of grave concern. The rapid increase in maritime traffic and trade across the North that is forecasted will supply a vector for criminal activity.

Canada works in partnership with other countries to fight organized crime and other transnational crimes. Efforts of the international community to develop international instruments to counter transnational organized crime reflect the recognition that the problem has become much more serious and borderless. Globalization of economic systems and developments in transportation and communications technologies has created enormous opportunities for human communication and economic development. However, they have also created significant new opportunities for organized crime.

2.5 Role of CSIS & Priority Areas

CSIS is responsible for collecting and analyzing information and intelligence related to threats to Canadian security.

The security screening program area is core to the surveillance and monitoring activities in a coordinated response to illegal entry through the Arctic. CSIS is charged with providing security assessments on behalf of federal government departments and agencies (except for the RCMP) on individuals who require access to classified information or sensitive sites, and on prospective immigrants, refugee claimants and citizenship applicants. [5]

2.6 Role of RCMP and Priority Areas

The RCMP has the lead in addressing organized crime within Canada. Their Organized Crime Strategy is focused on “Reducing the threat and impact of organized crime”. In countering the growth of these groups, and dismantling or disrupting their structures and sub-groups, a critical component is the improved coordination, sharing and use of criminal intelligence. This intelligence is used in support of integrated policing, law enforcement plans and strategies as well as initiatives designed to communicate the impact and scope of organized crime.

Utilizing the intelligence base established by CISC (Criminal Intelligence Service Canada), operations will provide leadership in developing and implementing intelligence-led tactical operational plans, in partnership with other police and law enforcement agencies.

The creation of legislation such as the *Organized Crime and Law Enforcement Act* provides Canadian law enforcement with new powers to further combat organized crime. These powers enable the RCMP to continue its efforts to counter organized criminal activities. In addition to providing more latitude for undercover officers, the Act -- passed by Parliament in early 2002 -- simplifies the definition of organized crime, makes it an offence to impede the administration of justice through intimidation and targets those who recruit others to join a criminal organization. [6]

2.7 Role of CBSA and Priority Areas

Public safety is a priority for the Canada Border Services Agency (CBSA). The CBSA and Citizenship and Immigration Canada (CIC) work together to enforce the *Immigration and Refugee Protection Act* to ensure that Government of Canada immigration priorities are met.

CIC officers work at visa offices overseas to assess and process the applications of people who want to come to Canada as permanent residents or refugees. These officers also assess the applications of those who wish to come to Canada to study or work. When applications are approved, applicants are provided with the documents they need to present when they arrive at a Canadian port of entry. Based on the documents presented and on any necessary follow up, CBSA officers either permit applicants to enter Canada or deny access to people who have been involved in serious crimes, who pose a threat to Canada's security or for other reasons specified in the *Immigration and Refugee Protection Act*.

In Canada, CBSA officers remove people who are inadmissible for such reasons as security, terrorism, criminality, espionage and violations of human or international rights, including war crimes and crimes against humanity. To support its work outside Canada, the CBSA has 56 migration integrity officers located in 46 locations abroad. [7]

The CBSA collaborates with international and Canadian partners, including CIC, the RCMP, the Canadian Security Intelligence Service and municipal and provincial law enforcement agencies. The common goal is to prevent criminals, people involved in organized crime or in human or international rights abuses, and people who pose a security threat from taking advantage of Canada's immigration program.

The Minister of Citizenship and Immigration issues a danger opinion if he or she believes that the person is a danger to the Canadian public or a danger to Canada's security. The Minister can issue danger opinions against Convention refugees facing removal from Canada and against persons claiming protection. Officials review the history of each case to determine if the danger the person represents to Canada outweighs the risk of removing the person to the country from which he or she fled.

A danger opinion allows the CBSA to remove a Convention refugee from Canada. It also means that a refugee claimant cannot be referred to the Refugee Protection Division of the Immigration and Refugee Board of Canada. The Minister of Public Safety and the Minister of Citizenship and

Immigration review and sign each security certificate. Certificates cannot be issued against Canadian citizens; they can only be issued against permanent residents of Canada and foreign nationals. A security certificate is one way for the CBSA to remove a person who is inadmissible to Canada for reasons of security, for violating human or international rights, for serious criminality or for organized criminality. A security certificate is only issued when information must be protected from disclosure because its release would be injurious to national security or to the safety of a person or persons.

If the person named in the certificate is detained, the judge conducts regular reviews of the reasons for the person's continued detention. The judge may order the person to remain in detention, to be released or to be released on conditions.

Most proceedings under the *Immigration and Refugee Protection Act* are suspended until the Federal Court makes a decision on the reasonableness of the security certificate. The only proceedings that may take place before the Federal Court decision include those related to detention or the terms and conditions of release; the pre-removal risk assessment; and the danger opinion (or principle of non-refoulement).

The person named in a certificate may be detained if the Minister of Public Safety and the Minister of Citizenship and Immigration issue a warrant for the arrest and detention of the person.

The ministers issue a warrant if they have reasonable grounds to believe that the person is a danger to national security or to the safety of any person, or the person is unlikely to appear at a proceeding or for removal from Canada.

2.8 Immigration and Refugee Policy²

Each year approximately 300,000 people are allowed entry into Canada, twice the number per capita that the United States allows. [10] In addition, few restrictions apply to countries of origin for persons seeking entry into Canada. Unlike the visa waiver program in the United States, which grants entry without a visa to residents of only 27 countries, Canada grants visa-free entry to residents of nearly 60 countries. This number includes Greece, Mexico, South Korea, and Saudi Arabia. Canada relies on paper identification for immigrants, forged versions of which are available on the black market for roughly \$1,000. [11] Asian criminal groups, especially those from China, Hong Kong, Macau, and Taiwan, as well as terrorist groups, exploit these policies. [12] A report in the *Hong Kong Kuang Chiao Ching* indicated that Chinese organized crime groups from these regions are increasingly using Canada as a base because of their ability to obtain legal residency in Canada relatively easily and then freely enter the United States. Canada's refugee policy has been very welcoming since the mid-80s. It was then that the Canadian Supreme Court broadened the definition of "refugee" by guaranteeing a hearing for anyone entering the country claiming to be a refugee, even if that person could provide no documentation. The new *Immigration and Refugee Protection Act*, which took effect in June 2002, does not challenge this right to a hearing without documentation, although it does implement a number of changes that make it more difficult for terrorists or international criminals to gain entry to or stay in Canada. [9] The new Act requires a reasonable explanation for a lack of

² Abridged section taken from Neil S. Helfland, "Asian Organized Crime and Terrorist Activity in Canada, 1999-2002," Federal Research Division, Library of Congress, July, 2003.

documentation and penalizes the failure to take reasonable steps to obtain such documents. In contrast to the situation in the United States, however, people rarely are detained because of lack of identifying papers. Even under the newly passed *Immigration and Refugee Act*, appeals are automatically heard. [12] Additional changes to the law include measures designed to detect fraudulent asylum applications and significantly harsher penalties for those caught smuggling people into Canada. The process of determining a person's eligibility for refugee status can take years, and even if a refugee claim is denied claimants often can stay in Canada if they declare that they will be put in danger when returning to their native country. [10] While awaiting a scheduled hearing, a refugee claimant is eligible for welfare or employment and is covered by the national healthcare system. Refugee claimants may also avail themselves of the public education system.

2.9 Articles 3 and 5 of the Protocol on Trafficking in Persons³

For those States that are Parties to the *Protocol on Trafficking in Persons*, article 5 requires them to establish the offence of trafficking in persons. [13] Trafficking in persons is defined, and for the first time internationally, in article 3 of this Protocol. Any legislation that criminalizes trafficking in persons must consist of three basic elements:

- The action of: recruitment, transportation, transfer, harbouring or receipt of persons;
- By means of: the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person;
- The purpose of exploitation, which include, at a minimum: the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs.

This can be done as a single offence or a combination of offences that cover the full range of conduct. It should be remembered that trafficking is the combination of constituent elements and not separate elements themselves.

State Parties must also criminalize participating as an accomplice and organizing or directing other persons to commit the offence.

2.10 Shipping and the Arctic

Arctic shipping in Canada is governed by several pieces of legislation. Principally these are the Arctic Waters Pollution Prevention Act and its regulations, the Canada Shipping Act 2001, the Marine Liability Act, the Marine Transportation Security Act, the Coasting Trade Act, and the Canada Labour Code. These acts were created to enhance safety and to protect life, health,

³ Section taken from Eileen Skinnider, "Defining Organised Crime in Canada – Meeting Our Obligations under the UN Convention Against Transnational Organised Crime and its Protocols against Trafficking of Persons and Smuggling of Migrants?", International Centre for Criminal Law Reform and Criminal Justice Policy, February 2006.

property and the marine environment. It is the responsibility of ship-owners and operators to ensure that they comply with all applicable acts and regulations. [14]

Ships must be designed, built, and equipped to resist ice loads and to handle Arctic weather and operating conditions. Canadian construction standards for ice class ships are found in the Arctic Shipping Pollution Prevention Regulations. It is the responsibility of shipbuilders and owners to ensure that their ships are built to proper standards.

It is also the responsibility of owners and operators to ensure that they operate in a safe and environmentally sustainable way. Discharges to the water, emissions to the air, ballast water release and hull fouling all impact the environment. Complying with the acts, regulations, standards, and guidelines, and employing trained and experienced staff will support safe operations.

The Arctic Waters Pollution Prevention Act and its regulations aim to prevent pollution in Canadian Arctic waters. By following best practices and complying with the acts and regulations, ship-owners and operators can reduce their impact.

Guidelines for the Operation of Passenger Vessels in Canadian Arctic Waters and Pollution Prevention Guidelines for the Operation of Cruise Ships under Canadian Jurisdiction help cruise ships operate in a safe and sustainable way.

Shipping generates different impacts on the environment, both through normal operations and through incorrect or abnormal operations. The different impacts are addressed in Canadian regulations, and some international standards and guidelines.

It is the responsibility of ship operators and owners to comply with these regulations, and follow recognized standards and best practice with experienced crewmembers. Pollution prevention officers may inspect any ship within the Shipping Safety Control Zones for compliance. The National Aerial Surveillance Program has aircraft patrols to prevent ships from making illegal discharges, and for finding oil spills. It is the responsibility of ship operators to comply with all applicable regulations when doing oil transfers, and to report any oil or petroleum-lubricating product spills immediately to NORDREG and the 24-hour Spill Report Centre.

2011 saw the Government of Canada sign the first Satellite based Automatic Identification System (AIS) surveillance contract with Exact Earth. This \$4.7m contract gives the 3 National Marine Security Operations Centres (MSOCs) access to near global AIS information for Maritime Domain Awareness and Intelligence purposes.

2.10.1 Arctic Shipping and the Law

The Arctic Water Pollution Prevention Act (AWPPA) and the Arctic Water Pollution Prevention Regulations (AWPPR) provide measures to prevent pollution from ships, and in particular, the deposit of waste into Arctic waters. The Arctic Shipping Pollution Prevention Regulations (ASPPR) deals with construction and operational aspects of navigating in the Arctic; including the need for Ice Navigators. The ASPPR contains the Zone/Date System (Z/DS), which is a system dividing the Arctic into 16 Safety Control Zones, each with fixed opening and closing dates for ships of various ice capabilities. The Arctic Ice Regime Shipping System (AIRSS) was

introduced as a more flexible system that uses the actual ice conditions to determine whether entry is allowed in an ice regime. An Arctic Water Pollution Prevention Certificate may be issued to a vessel outside of Canada by an IACS recognized Classification Society.

The Canada Shipping Act (CSA) 2001 is Canada's principal legislation for shipping. It applies in all Canadian waters, including the Arctic. The Marine Liability Act (MLA) makes the owners and/or operators of vessels responsible and liable for their vessels and the consequences of its operations. The Marine Transportation Security Act (MTSA) provides for the security of marine transportation. It applies to ships and marine facilities in Canada, and to Canadian ships outside of Canada. The Navigable Waters Protection Act (NWPA) protects navigation from being impeded or made more dangerous, and it regulates ferry cables and draw bridges.

Through these Acts and Regulations, Canada implements various International Maritime Organization Conventions.

2.10.2 Climate Change and Its Impacts on Shipping

The temperature in the Arctic has raised, on average, 3-4 °C over the past 50 years. The Arctic Climate Impact Assessment has found that this increase represented almost twice the rate of that of the rest of the world. With higher temperatures, recent summers have had record minimum amounts of sea ice. Over the past three decades, the annual average sea ice extent has declined by 3-4 % per decade, and also, ice thickness has been reduced by as much as 40 % for the thickest ice. Climate models predict that summer sea ice in the Arctic will decrease up to 80 % by 2100 as a result of climate change. Reduced sea ice is likely to facilitate an increase of marine traffic in the Arctic, and providing greater access to resources.

2.10.3 Impacts on Shipping

Even with significant warming in the Arctic, research predicts that Canada's Northwest Passage will remain difficult for large-scale commercial shipping. It also indicates that, under certain conditions, melting ice could make shipping in the Canadian Arctic more dangerous; not less.

With ice melting in the Arctic Archipelago, multi-year ice in the Arctic Ocean can flow into shipping lanes. Old ice is thicker and stronger, and may present serious navigational hazards that can cause greater damage to a ship's hull as compared to first-year ice. This ice presents a hazard to most vessels.

Studies are ongoing on the melting of sea ice in the Canadian Arctic, the likelihood of shipping through the Northwest Passage, and the impacts this could have on the Canadian Arctic.

2.10.4 Cruise Ships

Cruise ship operators and crews are to be familiar with the content of the Arctic Shipping Pollution Prevention Regulations (ASPPR). The Guidelines for the Operation of Passenger Vessels in Canadian Arctic Waters provides additional information about pollution prevention,

ship safety, national security, vessel traffic management, ice navigation and ice regimes, tourism affecting Arctic communities, search and rescue, and Arctic marine survival.

Cruise ship owners and operators are responsible for preventing pollution from their vessels. By ensuring that they comply with all regulations, such as the ASPPR, and following good practices and guidelines, such as the Pollution Prevention Guidelines for the Operation of Cruise Ships under Canadian Jurisdiction, cruise ship owners and operators will reduce their impact on the environment. The Arctic Pollution Prevention Certificate is evidence that a ship complies with the ASPPR. Operating in the Arctic has additional challenges due to ice and lack of readily available facilities. Cruise ship operators are responsible for operating safely in the Arctic and carrying all supplies needed for the voyage. Cruise ship operators are responsible for complying with the Marine Transportation Security Regulations. The operator must contact Canadian officials for custom and security screening formalities.

3 Strategic Assumptions and Environment 2020

3.1 Assumptions 2010-2020

Threats from terrorism and extremism remain prevalent throughout the following two decades. Organised Crime continues to pose a serious threat to the Canadian way of life. Border security and immigration controls are a highly political issue and Canada can no longer rely on its geographical isolation as a guarantee of its land, sea, and air border integrity.

In the period of 2010 -2020 the following key points should be noted:

- Mexico's membership in NAFTA & SPP has been suspended due to its governance failure in the face of the Drug Cartels;
- Canada is now one of the world's biggest manufacturers of marijuana – a distribution business centred on the Hell's Angels in Eastern Canada and the Chinese Triads in BC. There exists a criminal transit way between both coasts and significant collaboration exists between the regions. Narcotics are traded in bulk with cocaine & ecstasy going west and heroin going east;
- The US land border is now sealed behind a physical fence to the North & South. Washington is pursuing an aggressive strategy to counter illegal immigration which makes Canada an easier target for those wanting a North American lifestyle;
- Diaspora groups are particularly active in illegal immigration – recent evidence shows the link between high threat groups of Somalis, Chechens, Tamils, and Nigerians and the recent upsurge in mass illegal migration;
- Many vessels used for illegal smuggling carry weapons for the crew and have demonstrated a willingness to use force to carry the day with federal and territorial law enforcement agencies. This has prompted many to advocate a more serious maritime security role for the CCG; and
- RCMP and CBSA agents in the Arctic have noted the escalating problem of drugs and alcohol which accompanies the cruise liner / tourist trade.

4 Projected Arctic Tension in 2020 – Proximal Causes

4.1 Security (Law Enforcement and Defence)

During the tough fiscal years of 2010-2015 government spending had been squeezed to a point where major infrastructure and support projects did not receive a sufficient head water of funding commensurate with government aims. A significantly increased security presence in the Arctic was stymied by a lack of appropriate infrastructure. This was particularly the case within the security communities (DND, RCMP and CBSA) where the facility expansion programme fell behind the pace of socio-economic growth. Late running and mismanaged projects saw an increased differential exist between the capacity of the security organisations to enforce the rule of law and the criminals' ability to prosper from crime.

Lessons had not been learned from the establishment of Maritime Security Operations Centres (MSOC) in the South and organisational stove-piping was very much the order of the day in the Arctic domain. The paucity of assets and infrastructure became a political issue with many First Nations leaders protesting about the speed of progress not keeping pace with the socio-economic demands of the people who becoming increasingly well-educated and techno-savvy.

Reports in the media from leaked RCMP and CSIS documents caused a furore on Parliament Hill, when it became apparent just how soft a target Canada's Arctic underbelly had become to the forces of organised crime in the period 2015 to 2020. In academic circles, the Canadian Navy's approach to Arctic operations was criticised as being underfunded, under-resourced, and failing to grasp the realities of their constabulary role. The arrival of the AOPS platforms could provide only summer operational coverage and there was little corporate appetite to advance the operational role beyond that of a federal taxi service for RCMP and CBSA. The serious damage to one of the new AOPS hulls last October has set the Navy back in confidence levels concerning the capability of AOPS to navigate in first-year ice.

The following issues represent assumption-based proximal causes for security vulnerabilities in 2020:

- Lack of Intelligence Sharing between “constabulary organisations” including DND;
- One of the new AOPS platforms is berthed alongside in Thule, Greenland for a diplomatic visit;
- The national infrastructure plan is significantly under-funded to deliver on the big projects outlined in the Northern Strategy; and
- In 2018, 356 illegal immigrants (mixed nationalities) were found onboard a Tanzanian registered coaster off the coast of Labrador, having been denied a Port of Refuge from Danish Authorities in Greenland.

4.2 Legal

The discovery of mineral wealth in the territories (Yukon, NWT, and Nunavut) followed the earlier example of Newfoundland when renegotiating the Atlantic Charter. Local politicians followed a populist card as they sought to negotiate considerable influence over how federal funds were spent in the Arctic. This independence of thought extended as far as renegotiating a discontinuance of RCMP policing contracts in favour of more local and “culturally relevant” policing. The resulting fragmentation saw a reversal in federal government legal presence and significantly slowed progress on the whole of government response to the issues of managing threats from organised crime and Diaspora Terrorist groups seeking to maximise illegal entry and exit of Canada. There were a number of notable cases in which organised crime sought to maximise confusion over jurisdictional issues and gaps in legal authority between federal and territorial agencies. Record numbers of drug seizures were taking place in the last five years as organised criminals sought to profit from the population and industrial growth in the North. Several local politicians have been suspected of compliance/ complicity with organised crime; including 3 in 2018, who were found guilty of conspiracy to supply illegal narcotics and involvement in human trafficking to support the sex industry.

The following issues represent assumption-based proximal causes for security vulnerabilities in 2020:

- The RCMP are now assigning extra officers from the South to deal with the summer 2020 crime wave;
- CBSA looking to establish a new sub- regional HQ to provide a pool of manpower for operations and a Northern immigration processing centre;
- Canada has raised the legal sentence for conspiracy to support illegal immigration from 5 to 10 years; and
- There is still no large federal penitentiary north of 60North.

4.3 Environmental

The exponential rise in Arctic tourism as a result of climate change began to have a distinct impact upon the once pristine Arctic. For the last decade cruise liner numbers and size have increased year after year and have become increasingly adventurous in the areas explored. The lack of modern hydro graphic surveying was becoming critical as on average a liner a year has run aground in areas that lacked sufficient charting. The environmental impact was immediate as CCG Emergency Response teams struggled to deal with even small slicks in the far North. Designated commercial response organisations struggled to keep pace with the tourist industries’ rapacious appetite and unintentional environmental impact.⁴ The impact on the indigenous environment was evident to all when an enterprising entrepreneur opened a small Arctic theme and wildlife park and turned once pristine tundra into a veritable Eskimo Disney-world. Outside

⁴ CCG ER has 75 qualified persons on its books.

of extractive mineral industries tourism accounted for \$1 in every 3 spent in the Arctic, with tourist numbers rising by 500,000 per annum from the 2011 figure of 1 million tourists.

The following issues represent assumption-based proximal causes for security vulnerabilities in 2020:

- On average 1-2 medium sized oil slicks are reported from damaged ships each year, primarily due to the lack of hydro-graphic surveys of the main approach routes;
- The UN declared the Mackenzie River and its approaches a World Heritage Site after the discovery of the remains of a Woolly Mammoth encased in ice in 2018;
- Costs are high in the North where even garbage removal alone costs the ship-owners \$25,000 per load; and
- Demographic differences have created ghettos in the towns that service the mining industry.

4.4 Economic

For over one hundred years, Canadians have been aware of the vast riches of the North but they have been virtually impossible to commercially extract them from the frozen lands north of 60:

R.G. McConnell of the Geological Survey wrote in 1889: “The Devonian rocks are nearly everywhere more or less petroliferous and over large areas afford promising indications of the presence of oil in workable quantities....The possible oil country along the Mackenzie valley is thus seen to be almost co-extensive with that of the valley itself. Its remoteness from the present centres of population and its situation north of the still un-worked Athabasca and Peace River oil field will probably delay its development for some years to come, but this is only a question of time.” [16]

For Canada, the Arctic has become an increasingly important source of economic well-being. Manufacturing industries in Ontario and Quebec have experienced huge losses due to increased competition and isolationism from the US. At the same time the extractive industries began to make important discoveries in the North. This, in part, has accounted for an economic refocus of the nation’s funding -- a shift away from the big two provinces. A recent study carried out by Wood Mackenzie on Arctic potential comments that the likely remaining reserves will be 75% natural gas and 25% oil. It highlights four basins that are likely to be the focus of the petroleum industry in the upcoming years: the Kronprins Christian Basin, which is likely to have large reserves, the southwest Greenland basin, due to its proximity to markets, and the more oil-prone basins of Laptev and Baffin Bay.

In scenes reminiscent of the California Gold Rush in the 1890s, the diamond discoveries off the tributaries of the Mackenzie River in 2013 saw the local population rise from 1400 to 25,000 during the summer months.⁵

⁵ Of whom 1500 were illegal Burmese & Chinese labours.

The following issues represent assumption-based proximal causes for security vulnerabilities in 2020:

- The price of oil is now \$200 per barrel;
- Canada is now world's third largest diamond exporter after Russia and South Africa;
- Reported Crimes against property have increased 300% over last 3 years; and
- Canada returned to a fiscal deficit in 2017.

4.5 Political

For many Canadians, the Arctic has risen in their level of consciousness to become one of the regions that defines the nation. Clearly, most Canadians are happy to live within 100 miles of the US and fly south in the winter; however, they remain resolute in their "Arctic" character. Politicians of all parties and national groups have been quick to jump on this populist band wagon and brandish their Arctic credentials to the world press. Any major government announcements to do with the Arctic sees a ministerial entourage leave Ottawa for a stage-managed photo opportunity worthy of a Royal Wedding. Such is the political sensitivity of the Arctic that during the 2016 General Election, a leaders' debate was held before media in a CF Base in Nunavut. Here all were united in the mantra of "use or lose it" made newsworthy by the last Prime Minister.

4.6 Social

Many Canadians found Hillary Clinton's criticism of Canada's narrow view on the representation required by the Arctic Council in 2010 as the first sign of an international Inuit political identity. [17] This raised level of socio-political consciousness quickly gravitated across the Inuit bands of NWT and Nunavut. It also drew support from those Southern Canadians who felt at one with their Arctic heritage. This consciousness ensured plenty of media coverage at times of Arctic conferences or man-made incidents / accidents. Aboriginal Senators have resigned as the party whips in protest at this aspect of Canada's foreign policy.

5 Scenario Events – Organized Crime in the North (2020)

The following tactical level events have been documented to provide clear and irrefutable sources of jurisdictional friction to those reviewing this scenario from the high-level operational to low-level strategic levels. Having outlined the various issues and departmental priority areas, these areas of friction will ensure activation of the Federal Emergency Response Plan (FERP) and guarantee Public Safety Canada (PSC) stands up the Government Operations Centre (GOC) and various departments have what they consider to be a leading role and issues which invoke the concept of Ministerial Responsibility. The following force disposition assumptions set the scene for this scenario based around organized crime / terrorism in the North:

- 1 Arctic Offshore Patrol Ship (AOPS) Deployed on the Pacific Coast – 2 Days sailing, no Helicopter embarked, no other government department (OGD) representatives onboard;
- 1 CCG Icebreaker + Helicopter - 2.5 Days sailing, no OGD representatives onboard;
- 1 CCG Mid-sized Patrol Vessel - 1.5 Days sailing, no OGD representatives onboard.
- US Department of Homeland Security (DHS) and Department of Defense (DoD) offering assistance – high level briefing (Ministerial level) as to possible identity of the three terrorists;
- 1 Halifax frigate+ Helicopter (High Readiness) alongside in Seattle (No JSS Available);
- 1 RCMP Emergency Response Team (ERT) Detachment in Vancouver;
- 1 CBSA Detachment in Prince Rupert;
- Pacific MSOC fully operational in Esquimalt; and
- Pacific Region CCG ER fully operational.

July 2020 – Triggering Event: Notice of a Panamanian-flagged bulk cargo vessel *MV Northern Voyager IV*, labelled as a Category 2 Vessel of Interest (VOI), suspected of conducting smuggling activities, reports indications to transit from Vladivostok, Russia to Dutch Harbour, Alaska. The vessel's manifest indicates mostly fertilizer and some HAZMAT chemicals stored on deck. NORAD and JTF (N) track vessel.

July 21, 2020 – The Catalyst:

11:10 - Vessel off-course, with dead reckoning indicating of the ship heading towards Tuktoyaktuk, NWT.

11:40 – vessel ran aground 69°27'46"N, 132°59'37"W. Bunker oil is leaking in the area. No additional passengers indicated on manifest. The ship is moving violently on the rocks and considerable structural damage is evident.

13:15 – Imagery of bunker oil leak taken by provincial airlines over flight. The ruptured tank was holding approximately 1820 tonnes of oil.

14:00 – Imagery from a CNN spotter plane transmits the first images of the slick as it comes ashore in an area of First nations’ significance.

15:00 – Crew recover ashore. 36 additional passengers not on manifest recovered. All are requesting asylum as refugees to SAR personnel at scene. Witnesses indicate 3 additional passengers had jumped from the ship. All were male of South Asian appearance, carrying large back packs and were said to be well equipped to the cold conditions. Those remaining illegal passengers are being held by 2 RCMP Constables and 1 CBSA Agent in a dilapidated farm building 1.5 miles from the wreck.

15:30 – closure of shipping lane in and out of the nearby port is causing issues with commercial carriers, who are asking for compensation in lost revenue due to redirection. The First Nations’ clan leader interviewed on the TV protests directly to the national government for a nationwide response so that his forefathers’ internment site will be returned to its UNESCO Heritage site condition.

17:40 – Of three who jumped overboard, intelligence indicates one is a known member of trafficking in drugs and people and one other is a former member of the Liberation Tigers of Tamil Eelam (LTTE). INTERPOL has standing warrant for the Sri Lankan for war crimes during the 2010 Jaffna Peninsula campaign. The third was described by ship’s captain as of Arab appearance but spoke English well and had a North American accent. Both men had been locked in discussions during the passage.

18:00 – GOC Activated by Minister for PSC to facilitate and support government response. Premier of NWT goes public with multi-media broadcast criticising Federal Government’s response towards environmental damage to coastline and first nations’ historic site.

18:45 - First reports from the ship’s master that chemical hold has been breached.

21:00 – Bodies of 2 first nations fishermen found with recent multiple gunshot wounds, their boat is missing (less than 300 tonnes, no AIS, few distinguishing marks).

21:30 – CBC overflies the wreck and internment camp with negative images of both being transmitted on “The National.”

22:30 – Captain confirms that ship’s hull has been breached and bulk fertilizer (60% Nitrogen) is being released into water.⁶

23:45 – Communications lost with RCMP and CBSA personnel at internment camp.

23:59 – Prime Minister receives a call from US President with the identities of the three missing passengers and documents their believed role in a multi-target terrorist campaign that includes Canada and US, the scale of which has not been experienced since 9/11. This time the plot

⁶ Enriched Nitrogen Fertilizer has been used extensively by terrorist organisations in their manufacture of low grade high explosive.

focuses upon Critical Infrastructure. In the US, both the Central Intelligence Agency (CIA) and Federal Bureau of Investigation (FBI) are on an emergency footing trying to locate other ringleaders. The Arab suspect is a nephew of Osama bin Laden and seen as a young Turk in North America's Al Qaeda Franchise. He holds a degree in chemical engineering from Harvard.

References

- [1] “Diplomatic Shifts in the Warming Arctic,” International Institute for Strategic Studies, Vol. 16 (December, 2010).
- [2] Jesper Hansen, “After the Ilulissat Declaration,” Arctic Council, 25 June, 2008. http://arctic-council.org/article/2008/6/after_the_ilulissat-declaration. Last accessed 10 January, 2011.
- [3] Rob Huebert, “Polar Frontiers,” Armed Forces Journal (2010). <http://www.armedforcesjournal.com/2010/03/4500480/>. Last accessed 11 January 2011.
- [4] “Arctic terror threats real: security agencies”, CBC News 10 November 2010. <http://www.cbc.ca/news/canada/north/story/2010/11/10/cp-arctic-security-threats.html>. Last accessed 14 January 2011
- [5] Canadian Security and Intelligence Service, “Role of CSIS” (website). <http://www.csis-scrs.gc.ca/bts/rlfcss-eng.asp>. Last accessed 27 February 2011.
- [6] Royal Canadian Mounted Police, “Organized Crime: Overview,” <http://www.rcmp-grc.gc.ca/fs-fd/org-eng.htm>. Last accessed 27 February 2011.
- [7] Canadian Border Services Agency, “Keeping Canada Safe”, (website), <http://www.cbsa-asfc.gc.ca/media/facts-faits/055-eng.html>. Last accessed 27 February 2011.
- [8] Canada Command (website), <http://www.canadacom.forces.gc.ca/site/index-eng.asp>. Last accessed 11 Jan 2011.
- [9] Helfland, Neil S. “Asian Organized Crime and Terrorist Activity in Canada, 1999-2002”. Federal Research Division, Library of Congress, July, 2003.
- [10] Berlau John. “Canada Turns into Terrorist Haven”. *Insight on the News*. Washington, June 24, 2002.
- [11] Berry, LaVerle. *Russian Organized Crime and the Global Narcotics Trade*. Washington: Library of Congress, Federal Research Division, March 2002.
- [12] “Asian Organized Crime,” *International Crime Threat Assessment*, 2000. Taken from Neil S. Helfland, “Asian Organized Crime and Terrorist Activity in Canada, 1999-2002”, Federal Research Division, Library of Congress, July, 2003.
- [13] Skinnider, Eileen. “Defining Organised Crime in Canada – Meeting Our Obligations under the UN Convention Against Transnational Organised Crime and its Protocols against Trafficking of Persons and Smuggling of Migrants?”. International Centre for Criminal Law Reform and Criminal Justice Policy, February 2006.
- [14] Transport Canada, “Marine Transportation” (website). <http://www.tc.gc.ca/eng/marine-menu.htm>. Last accessed 7 January 2011.

- [15] Security Foresight, "Future Issue: The Arctic." October, 2009.
- [16] "Canada's Arctic," Alberta Online Encyclopaedia, http://www.albertasource.ca/petroleum/industry/historic_dev_canada_arctic.html. Last accessed 11 January, 2011.
- [17] Woods, Allan. "Canada gets cold shoulder at arctic meeting". The Star, 29 March, 2010. <http://www.thestar.com/news/canada/article/787178>. Last accessed 27 February, 2011.
- [18] Jim Bronskill, "Federal security agencies raise spectre of Arctic terror threats." Globe and Mail, 10 November, 2010.
- [19] National Security Policy (April, 2004).
- [20] Royal Canadian Mounted Police, "Serious and Organized Crime." <http://www.rcmp-grc.gc.ca/oc-co/index-eng.htm>. Last visited 10 January, 2011.
- [21] Government of Canada, "Northern Strategy," 2009. http://www.international.gc.ca/polar-polaire/arctic-northern_strategy_strategie-nord-arctique.aspx?lang=eng. Last accessed 10 January, 2011.
- [22] Government of Canada, "Federal Emergency Response Plan," November, 2009.
- [23] Government of Canada, *Canada First Defence Strategy*. (Ottawa: Government of Canada, May, 2008).
- [24] Conference Board of Canada. "Security in Canada's North: Looking Beyond Arctic Sovereignty"; 2010. <http://www.conferenceboard.ca/documents.aspx?did=3887>. Last accessed 7 January, 2011.
- [25] Bishop, P., Hines, A. and Collins, T. "The current state of scenario development: an overview of techniques", *Foresight*, Vol. 9 No. 1; 2007, pp. 5-25.

This page intentionally left blank.

List of symbols/abbreviations/acronyms

A5	"Arctic five", referring to Canada, US, Russia, Denmark and Norway
AGI	"Auxiliary General Intelligence", intelligence collection vessels
AIRSS	Arctic Ice Regime Shipping System
AIS	Automatic Identification System
ALEA	Aid to Law Enforcement Authorities
ARCG	Arctic Response Company Group
ASPPR	Arctic Shipping Pollution Prevention Regulations
AWPPA	Arctic Waters Pollution Prevention Act
AWPPR	Arctic Water Pollution Prevention Regulations
C4ISTAR	Command, Control, Communications, Computers, Intelligence, Surveillance, Target Acquisition and Reconnaissance
Canada COM	Canada Command
CANOSCOM	Canadian Operational Support Command
CANSOFCOM	Canadian Special Operations Forces Command
CASARA	Civil Air Search and Rescue Association
CBSA	Canada Border Services Agency
CCG	Canada Coast Guard
CCGA	Canada Coast Guard Auxiliary
CEFCOM	Canadian Expeditionary Force Command
CF	Canadian Forces
CFATC	CF Arctic Training Centre
CFD	Chief of Force Development
CFDS	Canada First Defence Strategy
CFIA	Canadian Food Inspection Agency
CIA	Central Intelligence Agency
CIC	Citizenship and Immigration Canada
CORA	Centre for Operational Research and Analysis
CRPG	Canadian Rangers Patrol Group
CSA	Canada Shipping Act

DEW	Distant Early Warning
DFO	Department of Fisheries and Oceans
DHS	Department of Homeland Security
DND	Department of National Defence
DoD	Department of Defense
DRDC	Defence Research & Development Canada
DRDKIM	Director Research and Development Knowledge and Information Management
ECS	Extended Continental Shelf
EEZ	Exclusive Economic Zone
ERT	Emergency Response Team
ESF	Emergency Support Function
EU	European Union
FBI	Federal Bureau of Investigation
FERP	Federal Emergency Response Plan
GC	Government of Canada
GOC	Government Operations Centre
HAZMAT	Hazardous Materials
ICSAR	Interdepartmental Committee on SAR
INAC	Indian and Northern Affairs Canada
IPCC	International Panel on Climate Change
IRPA	Immigration and Refugee Protection Act
JRCC	Joint Rescue Coordination Centre
JTF(N)	Joint Task Force (North)
LTTE	Liberation Tigers of Tamil Eelam
MLA	Marine Liability Act
MRSC	Marine Rescue Sub-centre
MSEL	Master Scenario Events List
MSOC	Marine Security Operations Centre
MTSA	Marine Transportation Security Act
NATO	North Atlantic Treaty Organization
NDA	National Defence Act

NEO	Non-combatant Evacuation Operations
NGO	Non-Government Organization
NM	Nautical Mile
NOAA	National Oceanic and Atmospheric Administration
NORAD	North American Aerospace Defence Command
NORDREG	Northern Canada Vessel Traffic Services Zone
NR Can	Natural Resources Canada
NSP	National Security Policy; National SAR Program
NSS	National Search and Rescue Secretariat
NWT	Northwest Territories
OGD	Other Government Department
PHAC	Public Health Agency of Canada
PSC	Public Safety Canada
R & D	Research & Development
RCMP	Royal Canadian Mounted Police
SAR	Search and Rescue
SLEEPS	Security, Legal, Economic, Environmental, Political, Social
SLOC	Sea Lines of Communication
SPP	Security and Prosperity Partnership
SRR	Search and Rescue Region
START	Strategic Arms Reduction Treaty
UN	United Nations
UNCLOS	United Nations Convention on Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNSC	United Nations Security Council
US	United States
USCG	United States Coast Guard
USSR	Union of Soviet Socialist Republics
VOI	Vessel of Interest
WoG	Whole of Government

DOCUMENT CONTROL DATA		
(Security classification of title, body of abstract and indexing annotation must be entered when the overall document is classified)		
<p>1. ORIGINATOR (The name and address of the organization preparing the document. Organizations, for whom the document was prepared, e.g. Centre sponsoring a contractor's report, or tasking agency, are entered in section 8.)</p> <p>Lansdowne Technologies Inc. 1001-247 Slater Street Ottawa ON, K1P 5H9</p>	<p>2. SECURITY CLASSIFICATION (Oversight security classification of the document including special warning terms if applicable.)</p> <p style="text-align: center;">UNCLASSIFIED (NON-CONTROLLED GOODS)</p> <p style="text-align: center;">DMC A REVIEW:GCEC APRIL 2011</p>	
<p>3. TITLE (The complete document title as indicated on the title page. Its classification should be indicated by the appropriate abbreviation (S, C or U) in parentheses after the title.)</p> <p style="text-align: center;">Arctic Planning Scenarios: Scenario #2 - Safety and Security Scenario</p>		
<p>4. AUTHORS (last name, followed by initials – ranks, titles, etc. not to be used)</p> <p style="text-align: center;">Avis, P.; Mugridge, D.; Race, P.</p>		
<p>5. DATE OF PUBLICATION (Month and year of publication of document.)</p> <p style="text-align: center;">July 2011</p>	<p>6a. NO. OF PAGES (Total containing information, including Annexes, Appendices, etc?)</p> <p style="text-align: center;">44</p>	<p>6b. NO. OF REFS (Total cited in document.)</p> <p style="text-align: center;">25</p>
<p>7. DESCRIPTIVE NOTES (The category of the document, e.g. technical report, technical note or memorandum. If appropriate, enter the type of report, e.g. interim, progress, summary, annual or final. Give the inclusive dates when a specific reporting period is covered.)</p> <p style="text-align: center;">Contract Report</p>		
<p>8. SPONSORING ACTIVITY (The name of the department project office or laboratory sponsoring the research and development – include address.)</p> <p style="text-align: center;">Defence R&D Canada – CORA 101 Colonel By Drive Ottawa, Ontario K1A 0K2</p>		
<p>9a. PROJECT OR GRANT NO. (If appropriate, the applicable research and development project or grant number under which the document was written. Please specify whether project or grant.)</p>	<p>9b. CONTRACT NO. (If appropriate, the applicable number under which the document was written.)</p>	
<p>10a. ORIGINATOR'S DOCUMENT NUMBER (The official document number by which the document is identified by the originating activity. This number must be unique to this document.)</p>	<p>10b. OTHER DOCUMENT NO(s). (Any other numbers which may be assigned this document either by the originator or by the sponsor.)</p> <p style="text-align: center;">DRDC CORA CR 2011-098</p>	
<p>11. DOCUMENT AVAILABILITY (Any limitations on further dissemination of the document, other than those imposed by security classification.)</p> <p style="text-align: center;">Unlimited</p>		
<p>12. DOCUMENT ANNOUNCEMENT (Any limitation to the bibliographic announcement of this document. This will normally correspond to the Document Availability (11). However, where further distribution (beyond the audience specified in (11) is possible, a wider announcement audience may be selected.)</p> <p style="text-align: center;">Unlimited</p>		

13. **ABSTRACT** (A brief and factual summary of the document. It may also appear elsewhere in the body of the document itself. It is highly desirable that the abstract of classified documents be unclassified. Each paragraph of the abstract shall begin with an indication of the security classification of the information in the paragraph (unless the document itself is unclassified) represented as (S), (C), (R), or (U). It is not necessary to include here abstracts in both official languages unless the text is bilingual.)

With the change in Northern climate over the past decade, current policy and media discussions have focused on the future of the Arctic. DRDC CORA has taken on a number of thrusts, including the development of a Capability Inventory Tool (CIT) to identify and characterize legislation and policy on the Arctic, with a view to developing scenarios for future planning. This report presents one of two scenarios, focused on a public safety and security-centric response scenario. The scenario makes use of the CIT to present an overview of the current situation, presents a projection out to 2020 to set context for a security environment in which illegal trafficking via northern routes poses a significant challenge to security in the Arctic. It is designed to stimulate several functions and mandates involved in Canadian emergency response and management, focusing on eliciting a Whole of Government (WoG) response. While all efforts have been taken to present a plausible scenario, it is not based on any intelligence assessments and is not intended to be considered a likely future. Rather, it presents a context for testing a range of capabilities required for Canada to be able to meet its strategy and policy objectives.

14. **KEYWORDS, DESCRIPTORS or IDENTIFIERS** (Technically meaningful terms or short phrases that characterize a document and could be helpful in cataloguing the document. They should be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location may also be included. If possible keywords should be selected from a published thesaurus, e.g. Thesaurus of Engineering and Scientific Terms (TEST) and that thesaurus identified. If it is not possible to select indexing terms which are Unclassified, the classification of each should be indicated as with the title.)

Arctic; Scenario Development; Capability Based Planning; Defence

Defence R&D Canada

Canada's Leader in Defence
and National Security
Science and Technology

R & D pour la défense Canada

Chef de file au Canada en matière
de science et de technologie pour
la défense et la sécurité nationale



www.drdc-rddc.gc.ca

