THE MEANING OF EXPEDITIONARY OPERATIONS FROM AN AIR FORCE PERSPECTIVE.

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Introduction

The following essay offers general considerations on the capability requirements associated with expeditionary operations with an application to Canada's air force. It is divided in three parts. The first one discusses the meaning of the term expeditionary and comes to the conclusion that this term can be conceived in two ways: the baseline expeditionary model and the robust expeditionary model. The second part of the essay describes the specific capability requirements that make up each model. Finally, the last part deals with the relationship between capability requirements derived from expeditionary operations and those stemming from a greater emphasis on homeland security and continental defence.

Defining Expeditionary Operations and Forces

Before proceeding with a discussion of the capability requirements associated with air expeditionary operations there is a need to define the meaning of being "expeditionary". The term is not common in Canadian Forces' (CF) doctrine and Department of National Defence's policy or strategy documents. A word search of CF operations doctrine only generated two instances of it with regard to personnel support,

while CF aerospace doctrine makes no mention of the term.[1] In the absence of a CF definition of what is an expedition, or an expeditionary force, it is useful to start our search for a meaning by looking at the United States where some definitions exist.

American joint doctrine defines an expedition as "a military operation by an armed force to accomplish a specific objective in a foreign country" and an expeditionary force as "an armed force organized to accomplish a specific objective in a foreign country".[2] These definitions apply to all the U.S. services, but historically the "expeditionary" focus has been closest to the institutional mission and identity of the U.S. Marine Corps (USMC), which actually has a doctrine on the subject.[3] The USMC sees expeditionary operations and forces as serving national interests and national security, and as a requisite for crisis response across the spectrum of operations:

> "Crisis response requires the full spectrum of military capabilities, including the capability for forcible entry—the introduction of military forces in the face of organized, armed resistance. National interest requires an expeditionary crisis-response force specifically organized, trained, equipped, and deployed to project military power overseas. Because of the unpredictability of potential crises, such crisis-response forces should be designed with a broad range of capabilities rather than in response to a specific threat. Such a rapid-response, general-purpose force must maintain itself in a continuous state of readiness, ready to deploy rapidly by both air and sea and able to adapt to a broad range of operating environments on short notice".[4]

As a result, when the Marines speak of an expeditionary force, they mean more than just a force organized to accomplish a specific objective in a foreign country. In the words of the 32nd Commandant of the Marines Corps, General James L. Jones, an expeditionary force is: "an agile and flexible force organized to accomplish a broad range of military objectives in a foreign country or region. Such a force must be able to deploy rapidly, enter the objective area through forcible means, sustain itself for an extended period of time, withdraw quickly, and reconstitute rapidly to execute follow-on missions".[5]

While the USMC is the U.S. service with the best claim to being expeditionary in the full sense described above, the United States Air Force (USAF) and Army are also in the process of becoming more expeditionary in response to the new conditions of operations that have emerged since the end of the Cold War. Foremost among these conditions are the need to sustain a greater variety of operations, often of a contingent nature, at a higher operational tempo than during the Cold War, with a smaller force largely or exclusively based in North America, but deployed almost anywhere in the world. The USAF experienced these conditions during the 1990s and found it difficult to mount and sustain such operations on an ad hoc basis. The difficulties encountered during Operation Vigilant Warrior—a deployment of fighters and bombers to the Gulf in order to counter Iraqi military movements against Kuwait in 1994—led to the creation of a series of four aerospace expeditionary forces (AEF I to IV) to better respond to the airpower needs of Central Command in the Gulf region over the period 1995-97.[6] The experience of these four initial AEFs, as well as those of other operations, led to the extension of the AEF format to the whole USAF under the framework of the

Expeditionary Aerospace Force (EAF) presented in the summer of 1998 and implemented since 2000.[7] The EAF framework created 10 virtual force packages in the USAF, called again AEFs, each with a selection of capabilities relevant across the spectrum of operations. These 10 AEFs follow a 15-month schedule during which two of them are deployed (or on call for deployment) for a 90-day period while the eight other AEFs are either standing down after their deployment (or on-call period), are undergoing normal training and exercises, or are ramping up their preparation in order to be one of the next two AEFs on deployment or call. When elements of an AEF are committed to expeditionary operations with their command and control and support elements they are called an aerospace expeditionary task force (ASETF), which can be made up, depending on the mission, of aerospace expeditionary wings, aerospace expeditionary groups, aerospace expeditionary squadrons, or other expeditionary elements below squadron levels.[8] An AEF is not a formed unit, but rather a pool of geographically distributed air force units ready to deploy. A notional AEF can include as many as 175 aircraft. The AEF is in large part designed to alleviate the operational tempo problem (and attending personnel retention problem) experienced by the USAF in the 1990s through a more stable and predictable schedule of deployment for the personnel and greater integration of the Air Reserve Forces and Air National Guard in expeditionary forces. However, the AEFs do not include many of the high-demand/low-density assets that are often required in expeditionary operations such as the airborne command and control, and intelligence, surveillance and reconnaissance platforms, strategic airlift, combat search-and-rescue, and (air force) special operations assets. These assets have to be assigned to the elements of an AEF as they become an ASETF. Thus, the aircraft most often found in the AEF

resource pool are air superiority fighters, fighter-bombers (including aircraft capable of suppressing air defences), bombers, tankers, and medium and light transport planes.

As developed the EAF/AEF construct addresses the basic challenge of being an expeditionary force, that is, to be able to respond quickly to crises abroad through the deployment of military units (often over strategic distances) and to sustain the tempo of such operations over time. However, as we saw in the context of the USMC, an expeditionary force can also be understood as requiring additional capabilities above those required to meet the basic challenge described above. These additional capabilities allow, among other things, a force to get access to an area of operations despite opposition, or in the absence of host nation support. For the USMC, no force can claim to be expeditionary if it cannot fight its way in, or sustain itself in an austere environment.

Interestingly, the USAF has introduced a concept to deal in part with this more ambitious set of expeditionary criteria, it is called the global strike task force (GSTF).[9] As introduced by General John P. Jumper, the GSTF concept is designed to "kick down the door", that is, to provide an aerospace force capable of establishing and maintaining theatre access for joint, air, land, and sea forces. The concept relies on AEF resources, advanced technology, and significant intelligence, surveillance, and reconnaissance capabilities. The GSTF is clearly intellectually linked to the earlier EAF/AEF construct[10] and sets the USAF on a course of development that will bring it closer to the Marines understanding of what constitutes an expeditionary force.

This succinct review of the meanings given to expeditionary operations and forces in the United States was designed to underline two possible understandings of the term expeditionary, the baseline expeditionary model and the robust expeditionary model. The

baseline model refers to the ability to respond quickly to crises abroad through the deployment (often over strategic distances) of a task-tailored military force for an operation limited in time. The robust model builds upon the baseline model but adds a series of additional requirements; for the purpose of this paper, it can be defined as the ability to respond quickly to crises abroad through the deployment or re-deployment (often over strategic distances) of a military force with a broad range of capabilities, despite opposition and lack of host-nation support in theatre.

The Capability Implications of Being an Expeditionary Force

Expeditionary capabilities are appealing, in particular for a nation like Canada with international security commitments and a force largely based in Canada. What is perhaps less understood are the implications of developing and maintaining expeditionary capabilities. We just saw that the term expeditionary can be defined either through a baseline or a more robust model. This part of the essay elaborates on the capability requirements associated with both models in order to promote a more informed debate on expeditionary capabilities. The analysis, although illustrated with air force examples, is of general application to the other environments.

The Baseline Expeditionary Model

The following capability requirements define the characteristics of the baseline expeditionary model:

- high readiness;
- sustainable expeditionary force generation;
- strategic mobility;
- deployable command and control element;
- interoperable with main coalition partners;
- lean in-theatre support; and
- modular force package (task-tailored).

Each of these capability requirements can be further analyzed. For the purpose of this paper, however, this analysis will be limited to giving a sense of what is meant by each of these capability requirements and indicating where Canada's air force roughly stands with regard to each of them.

It is useful to consider readiness first in discussing expeditionary capability requirements. Contemporary and future expeditionary forces need to be at a high level of readiness in order to generate rapid response to crises that erupt with little or no warning. Contrary to their forebears of the First and Second World Wars, contemporary armed forces cannot take months or years to train and equip for an expedition abroad. They need to be already equipped and trained for a range of contingencies. High readiness is therefore a broad capability requirement that affects various aspects of force generation. The training dimension will be emphasized here, as it can easily be overlooked by outside analysts. Training acts as a force multiplier, allowing an individual, a crew, or a unit to optimize the use of available equipment. But the skills and proficiency generated by training need to be periodically refreshed. For instance, a study found that the bombing accuracy of American F/A-18 pilots brought to a peak after attending the U.S. Navy

"Strike University" had returned to the initial lower level of proficiency after 45 days.[11] Training is not cheap, especially when it involves aircraft and realistic training. Our air force has generally maintained a high level of training for flying crews relative to many other air forces. It is also pursuing various initiatives to exploit simulation technologies to provide realistic training at lower costs than through actual flying.[12]

The tempo of expeditionary operations has been sustained since the end of the Cold War for the CF and the armed forces of some of our Allies. This has translated into various problems including declining combat skills, the repetitive deployment of limited numbers of specialized assets or personnel, and more generally, quality-of-life and personnel retention problems. This is not just an issue of force size—although it does matter—since even a large force like the USAF suffered from these problems. It is also an issue of organization as underlined by the fact that in the United States the navy and its air and land components have generally handled the tempo of expeditionary operations better than the army or air force, because they have been organized to deal with such operations for a longer time. As mentioned earlier the need to establish a sustainable expeditionary force generation model was the impetus behind the USAF's EAF/AEF construct.

The air force in Canada also attempts to manage its various forces so that they can respond to contingencies abroad while minimizing negative impacts on force generation over the long term. However, it does not have an overarching concept like the USAF, but rather arrangements based on the particular circumstances of each community. The fighter squadrons found in 3 and 4 Wings come closest to the USAF construct as these four squadrons can support a 3-to-1 deployment ratio, with one squadron ready for

deployment for up to six months, while the other three are training or recuperating. Some other communities, on the other hand, are developing more unique solutions to meet their requirements. For instance, 1 Wing, which oversees the helicopter squadrons working in support of the army, is experimenting with the "12 V" concept (12 for 12-month squadron deployment, V for variable personnel tour lengths) whereby key personnel deploy abroad for six months while the remainder of the unit personnel deploy on shorter 56-day rotations.[13] The maritime patrol, maritime helicopter, and transport communities operate with fewer squadrons and have so far generated forces for expeditionary operations on a more ad hoc basis, drawing upon available resources from all the squadrons if necessary to support the operations of the lead squadron(s). Overall, while organizational improvements are possible and desirable, it seems that in the case of our air force size (rather than organization) might increasingly become the determining factor of our ability to maintain the operational tempo associated with an expeditionary force posture under contemporary and future conditions.

Strategic mobility is another essential capability requirement for expeditionary operations in the current security environment where forces are no longer forward deployed in one or a few theatres, but are projected from national bases to almost anywhere in the world on short notice. As a result, transport and air-to-air refueling aircraft are assets that are in high demand and that figure in the modernization programs of most nations seeking greater power projection. Our air force has a relatively good record with regard to strategic mobility. We operate a fleet of transport aircraft that is relatively large for the size of the CF and that has served us well in our foreign operations over the years. For the future, we plan to renew the strategic air-to-air refueling capability

through the modification of two of our CC-150 Polaris transport planes and are considering the various options to get a more capable strategic airlift capability (i.e., with more range and a capability to handle outsized or oversized cargo) to support CF operations.[14]

Elements of the CF when deployed abroad need a command and control organization to ensure that the mission objectives are realized, that resources are used efficiently, and that Canadian interests are taken into account. The precise structure of this organization will depend on the nature of the operation. For international contingency operations involving more than one environment of the CF there is a deployable command and control capability provided by the Canadian Forces Joint Operations Group. Elements of the air force can also deploy with basic command and control capabilities (with the support of 8 Air Communications and Control Squadron based in Trenton, Ontario).

The fact that most CF international operations take place in a multinational context creates a requirement for interoperability with our main coalition partners (the United States and other NATO nations). The most deployable force will not be considered by a coalition if once deployed it cannot operate effectively with other members due to language or doctrinal barriers, or incompatibility in equipment and supplies. Canada's air force operates closely with U.S. forces as part of NORAD, maintains regular contacts and exchanges with U.S. aviation communities as well as with selected NATO air forces and aviation communities. There is room for improvement in interoperability (notably in the area of communications and datalinks where initiatives are underway or under consideration). And there is certainly no place for complacency in

light of the fact that U.S. forces are pursuing the current revolution in military affairs more forcefully than we or other NATO forces are. Nevertheless, our air force maintains a relatively high level of interoperability with close allies and notably U.S. forces that many other air forces would envy.

Another desirable capability feature for expeditionary forces is the ability to operate with only the essential support required for the mission. Lean, in-theatre support is sought notably to minimize strategic mobility requirements and the number of personnel forward deployed. Advances in technology can and could increasingly allow forces to deploy with smaller amounts of supplies and munitions and to receive support from capabilities kept at home through reach back. In the meantime, however, lean, in-theatre support for our air force often means essentially being capable of supporting operations with fewer support personnel than some larger and wealthier air forces because our personnel are more versatile and multi-skilled.

The multinational nature of contemporary expeditionary operations and the fact that they span the spectrum of operations from humanitarian assistance to a conventional war means that the expeditionary forces sent are rarely complete formations, but more often task forces put together on the basis of the specific mission to be performed and integrated into a larger whole. Therefore, the forces generated need to be modular, capable of being taken from a mother unit and temporarily integrated into a combined or joint task force. The forces generated should provide a range of capabilities, in order to meet contingencies across the spectrum of operations, but they do not necessarily have to produce a full and integrated menu of capabilities that can be deployed as a single formation, at least in the baseline expeditionary model.

The Robust Expeditionary Model

As discussed before, what is implied by the term expeditionary can give rise to two models, the baseline model just described and a more ambitious one referred to as the robust expeditionary model that some believe characterizes a true expeditionary force. The robust expeditionary model, or force, is characterized by the following features that can be conceived as options added to the baseline model:

- capable of operating in any terrain and climate;
- capable of forcible entry;
- full-spectrum force protection;
- capable of reconstitution while forward deployed;
- capable of sustaining itself in an austere environment without host nation support; and
- multi-mission capable (general-purpose[15] task force).

Another difference between the baseline and the robust model is that while the former represents a relatively coherent whole—you can hardly develop only one or two of the seven capabilities of the baseline model without needing the other ones—the latter is slightly looser, some discretion can be exercised in choosing among the six capability requirements. Although strict advocates of robust expeditionary capabilities could argue that there is, for instance, no point in having a forcible-entry capability if you do not have very robust force protection measures.

The ability to operate in any terrain or climatic conditions is a desirable feature for robust expeditionary forces. Expeditionary forces can be expected to operate in

deserts, built-up areas, mountains, plains or jungles and forests, from searing heat and humidity to subarctic-like conditions (from the jungle of East Timor to the mountains of Afghanistan in winter). This comes with a price in equipment and preparation of personnel (training, health and sanitary issues). This is probably the only capability in the robust expeditionary model that our air force can claim to possess to a significant degree. We have operated aircraft in a variety of climatic conditions over sea and land in some of the harshest weather. This capability, however, is in large part derived from our need to operate over Canadian territory and approaches, not from a conscious decision to develop a robust expeditionary capability.

The most common capability requirement associated with a robust expeditionary model is the ability to forcibly enter an area of operations. Arguably, this capability is rarely required to conduct expeditionary operations—when is the last time the USMC conducted an amphibious assault, for instance—yet it does define true expeditionary capabilities in the eyes of some services and analysts. For land forces, whether they come from the sea or from the air, the forcible-entry capability can often be viewed as a tactical problem—securing a beachhead or an airfield for instance. For air forces, however, forcible entry tends to be defined almost from the start at the operational (theatre-) level given the range of aircraft and missile systems. Thus, the problem requires a range and quantity of capabilities that defy the military means of a middle power like Canada. At best, we could, in theory, contribute some specific capabilities (e.g., suppression of enemy air defences if we were to acquire that capability) in a broader coalition attempting forcible entry.

There is a general agreement that under contemporary and future conditions, forcible-entry operations against a capable regional power are likely to be met with strong defences and counter-offensive measures ranging from sophisticated air defences, to missile strikes with possible use of weapons of mass destruction, and unconventional attacks (terrorist and commando-like actions, computer attacks) against the infrastructure and communications networks that support air operations. As a result, and for that type of contingency, forcible entry necessitates a full spectrum of force-protection measures ranging from airfield security and defence, to theatre-missile defence, and robust and redundant communications and geo-location systems to mention just a few capabilities.

The USMC considers "reconstitution" among its essential expeditionary capabilities. Reconstitution for the Marines refers to "the ability of an expeditionary force to regenerate, reorganize, replenish, and reorient itself for a new mission after employment elsewhere without having to return to home base".[16] This ability to reconstitute and be re-assigned to a new expedition while being forward deployed is much more demanding than the more common practices of reconstituting expeditionary units at home, or of regenerating expeditionary forces in the context of a single mission through rotations or reinforcements.

A robust expeditionary force should be able to sustain itself in austere environments, and in situations where host nation support is deficient or unavailable.[17] This capability can be critical for operations in the developing world and in situations where local infrastructures have been degraded by war or natural disasters.

Finally, a robust expeditionary force can be understood as one that can assume, or effect a transition through, a range of tasks or missions during a single expedition. This

requires a general- or multi-purpose expeditionary force. A deployed force that can, for instance, deliver aid, maintain peace, or fight in the context of a single mission. Both the USMC and USAF in their expeditionary force structures prepare for multi-purpose force packages; although the reality of operations may not require such forces most of the time.

Expeditionary Capabilities and "Homeland Security"

The events of 11th September, 2001, make it difficult to discuss expeditionary operations without discussing issues of defence and security closer at home. Expeditionary operations can be conceived as a first line of defence for the ultimate protection of Canadian territory and values, and this makes sense in times when direct threats to North America are limited (e.g., in the First and Second World Wars). Expeditionary operations, however, may start to compete with the defence and security of Canada when more direct threats are perceived or actualized against North America and when the resources allocated to defence and security receive no more than marginal increases. Thus, as the conference organizers indicated, there is a need to discuss expeditionary operations in light of the "imperatives of homeland security and the defence of North America". Three main options seem possible in that regard.

The first option would entail favouring expeditionary capabilities even at the expense of homeland and continental security. One could argue that forward defence is the best defence whether it takes the form of conflict prevention and peacekeeping or of warfighting to deter or retaliate against aggressors. Furthermore, countering the terrorist

threat against North America remains an activity where intelligence and police organizations have the lead and where the CF generally act in support.

If one explores the expeditionary option further in the context of the air force, at least three paths seem possible. One involves emphasizing greater interoperability with allied air forces in the context of combined operations abroad. Both the fighter and transport communities are obvious candidates for this path; but it is also applicable to our long-range surveillance platform, the CP-140 Aurora, if we continue its development as a multi-mission surveillance platform capable of operating over land as well as over water. The U.S. Navy's use of P-3s over Afghanistan and their experimentation to make it an airborne ground surveillance platform (under the Hairy Buffalo technology demonstration) are excellent indications of the future potential of the aircraft over land, assuming a relatively benign air environment.[18] The second expeditionary path would put the emphasis on developing air support to a joint formation. This path has been recommended notably by the Royal Canadian Military Institute, which put forward the notion of CF amphibious-airmobile expeditionary units supported by CC-130 Hercules and armed helicopters.[19]

Finally, the third expeditionary path would pursue capabilities relevant to both combined and joint operations as we currently do. This path can be followed for most systems—perhaps, however, at the risk of increased costs—or we could selectively develop certain systems for joint operations and others for combined air operations—perhaps, this time, at the risk of the coherence of the whole air force.

The second option with regard to expeditionary operations and homeland security would argue for prioritizing the latter over the former. While expeditionary operations are

important; they remain largely discretionary when more pressing demands are made at home. These demands include the increased effort Canada could be required to put into homeland security in light of the importance of this issue in the United States (even before the events of 11th September, 2001), as well as our own needs for greater surveillance and control capabilities in support of Canadian sovereignty (e.g., in the Arctic). When considered together, these demands constitute a strong case for making a greater effort in solving problems close at home rather than far abroad.

Most air forces in Latin America as well as those of neutral European countries (Austria, Switzerland, Sweden until recently) represent models of air power centered on territorial defence and enforcement of sovereignty with little or no power projection capabilities. This option could have less drastic implications for our air force than one would assume because the size of our country and the remoteness of many operating areas make many expeditionary capabilities relevant to operations in Canada: for instance, air-to-air refueling, long-range airlift, or the ability to operate from airfields with limited facilities. However, other capabilities would be much less in demand and difficult to rationalize; for instance, precision strike, fire support to naval and land forces, and robust self-protection measures for aircraft. Again, to take the earlier example of the CP-140 Aurora, a focus on security and defence issues closer at home could mean that the aircraft would remain a maritime patrol aircraft with little or no requirement for an overland surveillance capability.

The third option would attem

selective contributions for expeditionary operations. This option is appealing because it offers a way out of the dilemma of choosing between expeditionary operations and security and defence at home. In practice, however, it is not without its own problems. First, it assumes that excess capacity is generated in support of homeland security and continental defence or that national/continental operations will not be concomitant with expeditionary operations; otherwise, insufficient forces will be generated to meet both national/continental and expeditionary contingencies. The weeks and months following the September 2001 terror attacks demonstrated how an increased effort in homeland and continental security can be required at the same time that expeditionary operations are planned and implemented.

The second difficulty with this model is that it assumes that the forces generated for national/continental use would have the extra capabilities required for expeditionary operations. This may be the case, for instance, in the area of communications where effective continental defence with U.S. forces would translate into a need for interoperability in that area that would be transferable in part to expeditionary operations; but, on the other hand, it is not clear that aircraft meant to operate strictly over Canada and North America would need self-protection measures like aircraft that are expected to operate in theatres where there are surface-to-air missile and fighter aircraft threats. The same logic applies to many of the capability requirements of the baseline expeditionary model described earlier. As a result, while the third option is appealing it is far from clear that it would generate as much savings as one could anticipate because of the excess capacity and extra costs required to make systems and organizations capable of expeditionary operations.

This is the broad range of options within the air force with regard to the implications of homeland security, continental defence, and expeditionary operations. However, one more option can be envisaged if one considers these requirements at the CF level. In that case, the fourth option would consist in limiting expeditionary capabilities to only one of the CF environments (and any supporting air force elements in the case of the navy and army). The case has already been made that the navy should be that expeditionary environment.[20] But other analysts could equally argue that the air force, or the army, should be the expeditionary element of the CF. This fourth option has the merit of limiting the resource investment in expeditionary capabilities and of clearly indicating to other nations what they can expect from Canada. The problems with it are related to flexibility in military options and perceived value. For example, despite the small size of the CF and other operational commitments, the Canadian government was offered a variety of military options for participation in the international campaign against the Afghan sanctuary of the al-Qaeda movement and ultimately did send navy, air force, and army elements to Southwest Asia as part of Operation APOLLO. Yet in the perceptions of the Canadian media, our degree of commitment to the U.S.-led campaign seemed to have been heavily influenced by the deployment and withdrawal of the army contingent only.[21]

Conclusion

The present paper did not argue for or against expeditionary forces. This is a choice that can only be made after discussing broader issues of defence and foreign policies that are beyond the scope of this paper. Instead, in order to promote an informed debate on expeditionary operations and their implications in terms of military capabilities, this paper offered two models of capability requirements for expeditionary forces: the baseline and the robust model. This framework can be applied to the CF in general. In the case of the air force, I argued that it generally meets the requirements of the baseline expeditionary model.

Making a choice between either model depends again on the resolution of broader issues relating to defence and foreign policy. Just like consumers are advised to determine their transport needs before choosing between modes of transportation and if they choose to own or rent a car what type of car they need, nations should determine first their need for expeditionary forces and then choose between the baseline or robust model according to their needs.

An increased focus on homeland security and continental defence would certainly affect the capability portfolio of the air force as illustrated by a few examples; however, a complete assessment would necessitate a review of all capabilities, a task that is beyond the scope of this paper. Similarly, if the CF were required to assume a more assertive or explicit expeditionary stance some choices could confront the air force: namely to what extent expeditionary capabilities should be sought through greater joint or combined integration, or both as we have done so far.

Finally, if expeditionary operations and homeland security / continental defence are to compete against each other for the same defence dollars there may not be an easy

answer. While building on the requirements for homeland security and continental defence to create a portfolio of capabilities from which to draw from for expeditionary operations might appear compelling, such a solution may not be cheap. Alternatively, specializing only one environment of the CF for expeditionary operations may drastically limit the military options of the government and the leverage it can expect from the remaining options at home or abroad.

Endnotes

[*] Dr. Thierry Gongora is a defence scientist attached to the air staff at National Defence Headquarters, Ottawa. The opinions and conclusions contained in this essay are his own and do not necessarily reflect the views of the air staff, the Department of National Defence, or the government of Canada.

[1] Department of National Defence, *Canadian Forces Operations* (Ottawa: Department of National Defence, publication B-GG-005-004/AF-000, 2000), p. 18-1; and 1 Canadian Air Division, *Out of the Sun. Aerospace Doctrine for the Canadian Forces* (Winnipeg, MB: Craig Kelman & Associates, 1997).

[2] Department of Defense, *Dictionary of Military and Associated Terms* (Washington, D.C.: Joint Doctrine Division, publication JP 1-02, 2001), p. 156.

[3] U.S. Marine Corps, *Expeditionary Operations* (Washington, D.C.: Department of the Navy, Headquarters United States Marine Corps, publication MCDP 3, 1998).

[4] *Ibid*., chapter 2, p. 2.

[5] General James L. Jones, "What's in a Word? 'Expeditionary Means More than Just Getting There Quickly", *Armed Forces Journal International*, vol. 138, no. 3 (October 2000), p. 60.

[6] See William L. Dowdy, *Testing the Aerospace Expeditionary Force Concept: An Analysis of the AEFs I-IV (1995-97) and the Way Ahead* (Maxwell AFB, AL: College of Aerospace Doctrine, Research and Education, 2000). The first four AEFs were actually *air* expeditionary forces, the term *air* was later changed for *aerospace*.

[7] On the EAF and AEFs see General Michael E. Ryan, *Expeditionary Aerospace Force. A Better Use of Aerospace Power for the 21st Century*, slide package available at http://www.fas.org/man/dod-101/usaf/unit/docs/eafpa4_0/sld001.htm; F. Whitten Peters and General Michael Ryan, *Air Expeditionary Forces* (Washington, D.C.: Department of Defence Press Briefing, 4 August 1998); Bryan Bender, "The new air force line-up—'lighter, leaner and more lethal", *Jane's Defense Weekly*, vol. 32, no. 10 (8 September 1999), pp. 34-35; Bill Sweetman, "Expeditionary USAF sets course. Aerospace Expeditionary Forces hold key to future readiness", *Jane's International Defense Review*, vol. 33, no. 5 (May 2000), pp. 30-37; and more generally the description and resources available at http://www.fas.org/man/dod-101/usaf/unit/aef.htm .

[8] On the variable composition of USAF expeditionary forces and their command arrangements see USAF, *Organization and Employment of Aerospace Power* (Maxwell AFB, AL: Headquarters Air Force Doctrine Center, publication AFDD-2, 2000), pp. 33-46.

[9] General John P. Jumper, "Global Strike Task Force. A Transforming Concept, Forged by Experience", *Aerospace Power Journal*, vol. 15, no. 1 (Spring 2001), pp. 24-33; and David A. Fulghum, "USAF Plans Rapid, All-Stealth Task Force", *Aviation Week and Space Technology*, vol. 154, no. 9 (26 February 2001), pp. 24-25.

[10] General Jumper has been involved in the development and promotion of both concepts, see also United States Air Force Scientific Advisory Board, *Report on United States Air Force Expeditionary Forces* (Washington, D.C: Air Force Scientific Advisory Board, document SAB-TR-97-01, November 1997) where the AEF concept is explored as a power projection tool more than as a construct to manage the operational tempo associated with expeditionary operations.
[11] Defense Science Board, *Training Superiority & Training Surprise* (Washington, D.C.: Office of the Under Secretary of Defense for Acquisition, Technology & Logistics, January 2001), p. 5.
[12] Holly Bridges, "Modeling and simulation: The new air force tool box", *The Maple Leaf*, vol. 5, no. 13 (3 April, 2002), p. 12; and David Pugliese, "Canada's Simulation Plans Keeping Pace with Aircraft Updates", *Defense News*, vol. 17, no. 14 (8-14 April 2002), p. 17.
[13] Rick Perreault, "Shorter deployments mean better quality of life", *The Maple Leaf*, vol. 4, no. 42 (21 November 2001), p. 8; and Rick Perreault, "430 Tactical Helicopter Squadron deploy…again", *The Maple Leaf*, vol. 5, no. 7 (1 May 2002), p. 12.
[14] Holly Bridges, "In search of global reach: Gearing up for a Future Strategic Airlifter", *The Maple Leaf*, vol. 5, no. 7 (20 February 2002), p. 11; Sharon Hobson, "Canada—Two Polaris transport to get aerial tanker conversion", *Jane's Defence Upgrades*, 10 January 2001; and Mike Reyno, "New Strategic Airlifters for Canada", *Wings Magazine*, vol. 41, no. 6 (December 2000-February 2001), pp. 40-43.
[15] "General-purpose" is the adjective used by the USMC, it is here used interchangeably with multi-purpose—a term recognized in our defence policy.
[16] U.S. Marine Corps, *Expeditionary Operations*, chap. 2, p. 11.
[17] *Ibid*., chapter 2, p. 10; and Jones, "What's in a Word?" in *Armed Forces Journal International*, p. 62.
[18] David A. Fulghum, "Navy Exploits P-3 in Overland Recce Role", *Aviation Week & Space Technology*, vol. 156, no. 9 (4 March 2002), pp. 60-62; and David A. Fulghum, "Navy Claims Victories In Mobile Target Chase", *Aviation Week & Space Technology*, vol. 155, no. 5 (30 July 2001), pp. 50-51.
[19] Royal Canadian Military Institute, *A Wake Up Call for Canada. The Need for a New Military* (Toronto: Royal Canadian Military Institute, 2001), pp. 18-20.
[20] Andrew Richter, "Strategic Ambitions and Fiscal Realities: Give the Navy Priority", *Policy Options*, vol. 23, no. 3 (April 2002), pp. 27-31, and p. 56.
[21] On 21 May 2002, Art Eggleton, then Defence minister, announced the withdrawal of the 850-strong infantry battle group from Afghanistan, leaving close to 1,300 CF personnel still committed to the campaign in Southwest Asia mainly from navy and some air force units. Yet, editorials back at home decried the battle-group withdrawal as if it constituted a complete withdrawal of the CF from the campaign. See, for instance, "Putting peacekeeping before warmaking", *National Post*, 23 May 2002, p. A19; "Canada's serious troop shortage", *EdmontnEdmotiona*