

# **The Military and Disaster Management: A Canadian Perspective on the Issue**

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## **Abstract:**

The purpose of this paper is to introduce students to the role of the military throughout a range of crisis situations, ranging from emergencies, to disasters, to catastrophes, primarily from a Canadian perspective. Specifically two issues are examined: (1) the role of the military within the disaster/emergency management cycle, and (2) the implications of militarization for crisis management. The military plays an important role in disaster management, particularly during large scale catastrophes, due to their special expertise, ability and resources. Controversy exists, however, as how to best place them within the disaster management cycle and to what extent the military model is appropriate. This paper discusses issues such as command and control decision making structures, and the use of and constraints to use of military forces in disaster management, mainly within a Canadian context (with some comparisons with other countries). Critiques of military style approaches to disaster management, and potential weaknesses in the critiques (that are mainly written from a U.S. perspective) when applied to the Canadian Forces are analyzed.

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## Introduction

The purpose of this paper is to introduce students to the role of the military throughout a range of crisis situations, ranging from emergencies, to disasters, to catastrophes, primarily from a Canadian perspective. Emergencies, disasters and catastrophes are words that do not have a universal definition. For the purpose of this paper the United Nations International Strategy for Disaster Reduction (2009) definition of disaster will be used: “A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources“. For a more in-depth discussion, the reader is referred to Perry and Quarantelli (2005). Emergencies are considered to be lesser disruptive events that do not exceed the coping ability of a community. Catastrophes are considered to be disasters so severe that people and institutions involved in response and recovery are themselves victims in a significant way.

Throughout this paper we use the phrases emergency management and disaster management. The terms are not identical, and have different definitions in the literature (for example, see Drabek, 1991 for a definition of emergency management and Lindel, Prater and Perry, 2007, for disaster preparedness). We argue against definitions that emphasize bureaucracies, technology and plans. The phrases are best understood broadly within a social context, acknowledging the range of definitions of the terms emergency and disaster, and encompass a

wide range of processes and actions throughout military and civil society, which include social capital as well as formal planning processes.

Two issues are examined: (1) the role of the military within the disaster/emergency management cycle, and (2) the implications of militarization for crisis management. For the purpose of this paper, the term militarization (which is quite different from use of the military) refers to assigning increased responsibilities and powers to the military, and/or having civilian disaster management agencies adopt a more military-like culture and way of operating.

## **Environmental Change & Emergency Management in Canada**

Following devastating wildfires in California in the early 1970's, the FIRESCOPE project examined ways to overcome the very significant coordination and cooperation problems that were associated with the multi-agency response to those fires (Buck, Trainor and Aguirre, 2006). What is now known as ICS, Incident Command System, as part of the broader IMS (Incident Management System) was developed as an adaptation of the military command and staff model to the civilian context of emergency management. Variations of IMS are now widely used not only in the USA, but also in Canada, Great Britain, and Australia (Buckle et al, 2000; Perry 2003). There are 5 main elements of an ICS system:

1. Command (a designated Incident Commander or, alternatively, unified command by two or more key agencies. Command staff also typically include Safety, Information, and Liaison personnel)
2. Operations (the personnel responsible to the Command element for effectively addressing the current operational demands)
3. Planning (the element involved with future planning re: the emergency/disaster)
4. Logistics (primary responsibility for resource requisitioning) and
5. Finance/Administration (cost accounting and time-keeping function)

Some of the benefits commonly associated with ICS are a workable span of control, unitary or unified system of command, common job descriptions, and a modular approach which can build or reduce elements depending upon the nature of the incident(s) and associated personnel and resource requirements. Also, the provision of an EOC (Emergency Operations Centre), which is concurrently a 'function, place, and a structure' has been found to be a key asset in success crisis responses (Perry, 1991, 204)

However, as with any system, ICS also has its limitations. It is best suited for large-scale complex disasters, rather than localized emergency situations (Perry, 2003). Also, although it has been 'adopted' by many agencies, that does not necessarily mean that personnel understand the system and are utilizing it properly (Wenger et al, 1989). Furthermore, it is predicated upon the requirement that emergency management personnel take responsibility for the development of plans which are communicated, known, and tested by those who be using them, and not just 'paper plans' (Quarantelli, 1998). However, as was the case for the state of Louisiana during Hurricane Katrina, too often civilian EM plans are neither known nor tested for their operational viability, a major factor in the failure of civilian EM response during that disaster. For example:

The state of Louisiana was not prepared to interface with NIMS despite previous training and the earlier Hurricane Pam exercise. Louisiana officials actually had to hire consultants to train elements of their state government on the basic of NIMS two days after Katrina made landfall. The earlier NIMS training was arguably ineffective. The power and authority ended up being negotiated during the disaster. (Lester and Krejci, 2007, p87)

Also, ICS is most suitable for dealing with 'response' issues where time and circumstances require a more directive approach, and less appropriate during other phases of the emergency cycle (Drabek, 1987). Furthermore, it is problematic to assume that any disaster can be completely 'controlled' or managed, irrespective of the system adopted. ICS is certainly no panacea, and if ICS proponents labour under the false assumption that they control all variables in a disaster, then usage of ICS may be problematic (Buck, Trainor, and Aguirre 2006; Wenger, Quarantelli and Dynes, 1991). By the same line of reasoning, critics of ICS have also failed to develop a workable alternative disaster system to ICS, probably because no such proactive plan could be effectively devised.

Military involvement in disasters has included a range of activities when local and civilian capacity has been exceeded. These include debris removal and route clearance, multiple remote field hospitals, dyke building during flood events, water purification and provision, providing security for Non Government Organizations (NGO's) distribution of food and supplies, and search and rescue.

The Canadian military has a long history of assisting civilian authorities in emergencies, disasters and other humanitarian operations (Scanlon. Maloney, 1997). Apart from the ongoing provision of Search and Rescue anywhere in Canada, the Canadian Forces (army, air force, navy) have provided ongoing emergency and disaster assistance operations to support civilian authorities. Examples include Hurricane Hazel in Toronto (1954), the Barrie Tornado, the

Province of Manitoba during the 1950 and 1997 Red River Floods in the Province of Manitoba (in 1997 over 8,000 soldiers were deployed to assist with the Red River flood in Manitoba, largely to assist with the building of dykes and patrolling rural areas), the Saguenay Floods in Quebec, the 1998 Eastern Canadian Ice Storm (when over 12,000 soldiers helped to clear roads and downed power lines, conduct house-to-house surveys and assist in many support activities such as distributing firewood), the 2003 Eastern North America Power Failure, and the 1999 Toronto Winter Emergency. During the 1999 winter storm emergency in Toronto, Mayor Mel Lastman requested army assistance in helping clear the streets and walkways, since existing civilian equipment and manpower was insufficient. The use of these military resources, along with their equipment, was critical to the response efforts.

Canadian military assistance to civilian authorities has not just been offered to domestic provincial civilian agencies, as military assets have been deployed in response to requests for assistance from international countries such as Haiti in 2010 (Incident Management System for Ontario, 2008. Scanlon, n.d.).

In response to the January 12, 2010 catastrophic earthquake in Haiti, the Canadian military launched 'Operation Hestia' and sent a Task Force Headquarters of over 2,000 army, navy and air force personnel to provide assistance following a request from the stricken Government of Haiti. The military's DART (Disaster Assistance Response Team) was given dispatch priority in order to provide lifesaving medical care, drinking water, and perform lifesaving engineering tasks. The deployment of two Royal Canadian Navy ships (HMCS Halifax and HMCS Athabaskan) and a continuous shuttle from Canada of heavy airlift transport aircraft, enabled the quick insertion of a light infantry battalion (3<sup>rd</sup> Battalion, Royal 22<sup>er</sup> Regiment) and other army, navy and air force specialist personnel who provided search and rescue capability, the provision of large amounts of emergency medical supplies, food, water, tents, tarpaulins, reverse osmosis water purification units, and field hospitals to provide medical care to remote areas of the country. Military police assisted civilian police in safeguarding civilian aid workers in their distribution of food and water, and military engineers re-opened roads and other transportation links by the removal of debris, enabling military transportation units (trucks and helicopters) to provide aid to the stricken communities (National Defence and the Canadian Forces, 2010). This is the 16<sup>th</sup> Canadian Forces civil-assistance mission to Haiti since 1963 (Harvey, 2010).

There have been a number of events over the past decade that have given the issue of the role of the military in crisis management increased prominence. After September 11, 2001 significant changes were made to how emergency management is conducted in the United States in that greater attention was paid to terrorist threats that required a centralized, national military response (Tierney et

al, 2006; Canton, 2007). A similar trend occurred in Canada. In particular, in the U.S. it led to the creation of the Department of Homeland Security, under which the Federal Emergency Management Agency (FEMA) was subsumed. Four years later, the role of the military in managing emergencies and disasters received increased attention in the wake of the 2005 Hurricane Katrina Disaster. The primary reason for this is that civilian agencies such as FEMA were seen to have been overwhelmed and ineffective, while the military leadership of General Honoré and military organizations such as the U.S. Coast Guard were perceived as having a much more successful response. It is within this context that these issues are addressed.

A more detailed literature review of the material discussed above is presented in section 3.

## **Interpreting Disaster and Disaster Management**

As previously noted, the meaning of the word ‘disaster’ has been interpreted in various ways (Perry and Quarantelli, 2005). The United Nations definition of a disaster includes an extraordinary wide range and type of events that might be physical, social or cultural in nature and occur over short or long time periods. Like the hazards that trigger them (Burton et al, 1999; Perrow, 1984), typologies of disasters includes categories of slow or rapid onset, concentrated or diffuse, social/physical/cultural, natural/technological/ human, known versus unknown, local/ national/international and linear versus complex – in short, the variety of disaster types is enormous. A successful disaster management strategy needs to take into account the type of disaster being addressed. This does not suggest an abrogation of all-hazards planning (an integrated approach to planning that emphasized that there are many commonalities with respect to planning for different hazards, such as having an evacuation plan), but simply recognition that some events have particular characteristics that require special attention. Examples of this are security issues in terrorist attacks, medical issues in pandemics and mold issues from floods. In some disasters, like the 1998 Ice Storm (Kerry et al, 1999) or the 1997 Red River flood (Shrubsole, 2000), there was a clear role for the military due to the overwhelming scale and reach of these events, which surpassed civilian EM capabilities and resources. The military has also been used substantially in responding to some more recent international disasters, such as the Sichuan, China earthquake of 2009 and the Haiti and Chile earthquakes of 2010, though evidence for that need, though seemingly compelling, is thus far anecdotal. For others, such as domestic periods of drought or mild epidemics, the role of military forces in Canada may be marginal at most. The issue of scale is an important one for this paper, since it largely determines the need for military response, which is decided at the federal level in Canada.

The U.N. International Strategy for Disaster Reduction (2009) uses two terms to encompass disaster management:

- “Disaster risk management” - “The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.”
- “Disaster risk reduction” – “The conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.”

Disaster management, like emergency management, typically is understood to encompass the four<sup>4</sup> interdependent phases of mitigation, preparedness, response and recovery. Mitigation refers to long-term actions that reduce the risk of natural disasters, such as constructing dams and prohibiting people from building homes or businesses in high-risk areas. Preparedness involves planning for disasters and putting in place the resources needed to cope with them when they happen. Examples include stockpiling essential goods and preparing emergency plans to follow in the event of a disaster. Response refers to actions taken after a disaster has occurred. The activities of police, firefighters, and medical personnel during and immediately after a disaster fall into this category. Recovery encompasses longer-term activities to rebuild and restore the community to its pre-disaster state. This is also a good time to engage in activities that reduce vulnerability and mitigate future disasters, such as strengthening building codes or modifying risky land-use policies. The phrase comprehensive emergency or disaster management is often used to refer to these phases, which typically are represented in a cyclic format (Coppola, 2006): mitigation, preparedness, response, recovery, mitigation and so on, that are incorporated into standards such as the Canadian Standards Association Z1600-08<sup>5</sup> and a federal EM Framework (PSC, 2007).

This cycle is useful in terms of understanding militarization and will form the basis of the analysis. The cycle happens within the context of several

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<sup>4</sup> Prevention is sometimes listed as a fifth phase

<sup>5</sup> Available from Canadian Standards Association [www.csa.ca](http://www.csa.ca)

processes – 1) the formal systems that comprise planning, such as emergency plans, legislation and mutual aid agreements, 2) informal networks and community engagement, and 3) system capacities within government, the private sector and NGOs, all of which determine the effectiveness of disaster management processes. In order to achieve successful disaster planning, military assets form a critical component of each of these processes, and military forces world-wide have been heavily involved with disaster management and response for many years (Anderson, 1994; Kohn, 2003).

The circumstances of military usage during disaster in countries such as Canada differ markedly from the unique circumstances of the United States, where there exists a more complicated array of political, legal and jurisdictional disputes that have at times led to significant problems of deployment and coordination between the distinct Federal [‘active’/regular] and Local/State [‘national guard’] military personnel and equipment—each of which differs with respect to equipment, policy and communication capabilities (See White House, 2006, Winthrop, 1997, Maloney, 1997, etc.). For example, when President Bush began to make a federal push to take care of New Orleans, Mayor Ray Nagin said, “Since I have been away a day or two, maybe he’s the new crowned federal mayor of New Orleans” (Connolly 2005 quoted in Lester and Krejci, 2007, p 87). Along these lines, it was also noted that “Because state and local officials were overwhelmed, and the Department of Homeland Security and DOD waited for requests for assistance rather than deploying a proactive response, some of the military’s available communication assets were never requested or deployed. In addition, some deployed National Guard were underutilized because the sending states placed restrictions upon their use.” (Excerpt from the Report to the Congressional Committee on Hurricane Katrina by the US Government Accountability Office May 2006, quoted in ‘IMS in Ontario’, page 133).

Canadian Provincial Premiers, as with the local heads of government in the regional governments of most Western democratic nations, do not control military assets of their own to be used to augment civilian emergency management resources, such as those normally under the control of each State Governor (the National Guard). As a result, although Canadian military personnel and equipment are Federal resources stationed across the country in every Province and Territory of Canada, their deployment to assist Provinces in emergencies and disasters is a clearly defined and well understood process explicitly specified in the Federal Emergencies Act. Some of the legislative and policy limitations imposed upon deployment and usage of different types of military forces in US disaster assistance operations (e.g. the Posse Comitatus Law, Title 10 Forces versus Title 32 Forces etc.) do not exist in Canada and most other countries, which may help to reduce the time and deployment issues associated in providing well coordinated military assistance to civilian authorities,



subsequent to a request from the appropriate civilian head of government. This is also noted in Maloney, (1997, p146); “Recent Canadian legislation, by contrast, is simple, straightforward, and flexible while at the same time incorporating important safeguards for the civil population.”

Much of the criticism of the usage of military resources in emergencies and disasters, emanating from US-based EM researchers focusing almost exclusively on the US domestic context, seem predicated upon the belief that federal politicians and military commanders are universally seeking to supplant duties and responsibilities of paid civilian emergency management and response personnel (Kelly, 1996). However, official strategic mission statements, operational goals, and policy decisions made by various democratically-controlled military forces do not support this perspective (see for example, the Canadian Forces strategy (2010), Kohn 2003, p177, etc.). As well, even in the unique context of the USA, there are numerous instances when the US Department of Defense has refused requests for military assistance to civilian authority (MACA) due to legal or policy grounds (Winthrop, 1997). National security and war-fighting capability, not the provision of emergency management and response, are the primary missions for military forces (e.g. Siegel, Keefer et. al, 1996). “Military assistance will complement and not be a substitute for civil participation in civil defense operations. Military plans and plans developed by civil authority must recognize that civil resources will be the first resources used to support civil requirements with military resources being used only when essential to supplement the civil resources” (US Department of Defense Directive 3025.10, paragraph 220.4 as quoted in Anderson, 1968).

At times military commanders have often been ordered by civilian authorities to supplement or replace civilian emergency management and response agencies when the latter have struggled or failed in the performance of their mandated duties to the public, as occurred during Hurricane Katrina (Lester and Krejci, 2007; White House, 2006)

In addition to the above, other arguments have been made for use of the military. Over and above the provision of supplemental military personnel, and specialist training and resources that arrive when military forces are assisting civilian EM agencies, there can also be significant ‘intangible’ benefits to their presence: “The involvement of the military in a community disaster may also have morale-boosting consequences. The presence of military troops seems to symbolize efficiency and authority to many local residents and officials. Thus, even if the military organization operating in the disaster area made no conscious attempt to enhance community morale, its presence would probably have this latent consequence anyway.” (Anderson, 1968, p29).

Also, given the dire, complex and dangerous circumstances under which military deployments have often taken place, they have learned how to conduct

highly effective training systems that also test key leadership appointments: “Military training exercises often involve the entire chain of command. Governmental disaster response organizations would do well to copy this military model. NIMS could conceivably provide the locus for this type of training.” (Lester & Krejci, 2007, p89)

## **Two Perspectives on Militarization of Disasters**

Core to this discussion is what is meant by “military culture”. There are certainly differences between civilian and military cultures<sup>6</sup> (DND, 1997), nevertheless, the authors feel it is important to emphasize that military culture is heterogeneous, varying not only from country to country (e.g., English, 2004), but also varying greatly within national military structures (Capstick, 2003, page 48), who notes that:

Defining a specific military culture is no easy task. It is particularly difficult in an organization as diverse as the Canadian Forces (CF), with three ‘services’, an integrated military-civilian command structure, and a force structure based on a mix of Regular and Reserve components. There can be no doubt that each of these ‘parts of the whole’ has developed a distinct culture based on their own unique operational requirements, history, and traditions. In other words, the military culture and organizational climate of an infantry unit on operations will be distinct from that found in National Defence Headquarters or in a fighter squadron. The result is that there is probably no unitary CF culture that can be applied across the entire institution.

The critiques noted above will therefore have varying relevance, depending upon a particular military culture.

The word culture has been used in many ways, both within general society and academic literature. For this research, the word culture will be used to mean the customs, beliefs, entire way of life, activities, of a people, group, or society (Smith and Riley, 2009). Schein (2004) notes that culture is at the heart of an organization’s stability; culture is so deep that it is mostly unconscious, and

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<sup>6</sup> For example: “It is a well accepted axiom that a soldier's regiment is his family. Many studies of battlefield stress and why soldiers fight have reinforced the notion that a soldier will risk his life for his comrades and for the honour and survival of his regiment. This issue is fraught with emotion. Many officers and soldiers spend their entire lives in a single regiment and they *naturally* become blind to many of its faults. Criticism of one's regiment, especially from an outsider, is tantamount to blasphemy and is not tolerated” (quoted from DND, 1997)

covers all aspects of how an organization works. Culture can be viewed as an autonomous force steering society and/or something that society creates. Both perspectives have value. For example, with respect to the latter the Canadian Armed Forces has an explicit set of ethical principles and obligations that are intended to be a cultural guide to its soldiers (Statement of Defence Ethics, 2010): The three ethical principles are: “Respect the dignity of all persons”; “Serve Canada before self”; and “Obey and support lawful authority”. Their six ethical obligations are: Integrity, Loyalty, Courage, Honesty, Fairness and Responsibility.

There are two divergent perspectives on the role of military assets in disaster situations, one supportive of increased militarization, and the other not. With reference to the former, following the debacle of preparedness and response to Hurricane Katrina, President Bush stated that “It is now clear that a challenge on this scale requires greater federal authority and a broader role for the armed forces -- the institution of our government most capable of massive logistical operations on a moment's notice” (U.S. Department of Defence, 2005). The U.S. Conference of Mayors stated that “Because of the sheer magnitude of the hurricane events recently experienced, and because acts of terrorism may spring up during or in the wake of such natural disasters, it is advantageous to consider an increased role for the military in disaster response.” (Government Executive, 2005). This may be part of a larger trend, as noted by Davies (2000) who observed that in the U.S. the President and Congress have increasingly tended to direct the military into traditionally civilian operations.

Increasing the roles and involvement of the military is not as simple as it may seem. First, the primary mandate of military forces is war-fighting capability to safeguard the national interest, not responding to domestic or international disasters. There are concerns regarding civil liberties, as noted by Mitchell (2003) who noted that increased military involvement of the military in disasters might signal an erosion of citizen rights and responsibilities to those who are advocates of civil authority. Additionally in the international realm the use of military can create special problems, particularly if there are competing factions within a country and the aid is perceived as being biased, or if the military forces are utilized by non-democratic regimes as a control mechanism to oppress and exploit the country's citizenry. In these latter situations, uniformed military troops may be feared for good reason, as there is little chance of them providing positive disaster interventions that uphold the United Nations' humanitarian principles of neutrality, impartiality and humanity (Oslo Guidelines, 2006).

Typically, military forces are constrained by legislation and policy in order to maintain a strategic national defensive capability, and to avoid undue risks to civil liberties. This is achieved in most democratic nations by employing military assets in disasters only after having received a formal request from

elected state/provincial officials, and having them work under the constraints imposed by that civilian authority. For example, the 1878 Posse Comitatus Act in the U.S. restricts federal military personnel and units of the United States National Guard from acting as a police force (Trebilock, 2000). Similar constraints operate within Canada. For example, the Emergency Management Act, 2007, c.15, though specifically indicating that federal ministers must “support the Canadian Forces” and allows the Government of Canada to invoke exceptional powers to deal with disasters, “offers full protection for the fundamental rights and freedoms of Canadians during national emergencies”, as guaranteed by the Canadian Charter of Rights and Freedoms (Emergency Management Act, 2007; Emergency Act, 1985; Canadian Charter of Rights and Freedoms, 1982). Therefore, changing the role of military assets in disaster situations is certainly not as clear-cut as it might seem given that it presents political and legislative difficulties, including the very real possibility of federal/provincial jurisdictional turf wars. As well, many senior military officers have grave misgivings about the misemployment of scarce military resources that conflict with their primary roles and *raison d’être*, as well as operating as a post-disaster clean-up crew.

The second alternate perspective, which is critical of military approaches to managing disasters, largely emerges from academic literature and emergency management practitioners. For example, the U. S. National Emergency Management Association (NEMA, 2005) wrote a Policy Position on the Role of the Military in Disaster Response stating that “The National Emergency Management Association does not support an increased role for the active military in disaster response. ... NEMA does recommend improved procedures, and a greater understanding by state and local officials of those procedures that allow civilian authorities to request assistance and support from the military in a timely and efficient manner in those rare and catastrophic circumstances that require response capabilities of a magnitude only DoD can provide.”. Similarly, Waugh (2006) refers to strong opposition to giving the military a lead responsibility in catastrophic disaster response.

Though emergency and disaster management grew out of a civil defence model developed during and after World War II, there has been a trend towards a broader more comprehensive approach (Canton, 2007), increased sharing of decision-making with disaster victims, and coordination between various responding agencies that require cooperation and negotiation. Hierarchical command and control models based upon a pyramidal authority structure have been criticized as not being the most effective for handling complex disasters. In particular, these approaches can fail to sufficiently incorporate local concerns, authority, culture and expertise. Hightower and Cotou (1996, page 69) note that “top-down vertical structure is incompatible with the horizontal coordination

needed to achieve effective disaster response in complex multi-jurisdictional settings”, that “horizontal coordination helps replace inappropriate and ineffective command and control structures”, and that “a hierarchical command structure, confidentiality of plans and situation information, and isolation of the system itself – is not the best way to involve civilian and volunteer agencies...”, though it “is appropriate within some organizations, e.g., police and fire...” Using a similar line of reasoning, Drabek (2003) observed that an emergency resources coordination model is more effective for emergency management than one based upon command-and-control.

Waugh (1996, page 347) observed that “sensitivity is necessary for intergovernmental and multi-organizational efforts to operate smoothly and effectively. That is one reason why military-style command and control structures are often inappropriate in disaster operations”, and that a “...clash of civilian and military organizational cultures...”, with “some perceived disrespect for local capabilities” result in less effective disaster management than would be wished for.

Clarke (2006, page 168) emphasizes the importance of informal actions: “There are problems... with responding to all problems through rules and bureaucratic organization, especially when it comes to disasters ... many of the demands that disasters place on society are not well met by bureaucracies... Social networks, rather than formal organizations, are far more likely to save... life.” Other authors who have commented on weaknesses of the command and control model with respect to aspects of disaster management (which tend to be based upon the myth of panic, and that confuse control with coordination) include Dynes (1994) and Quarantelli (1989).

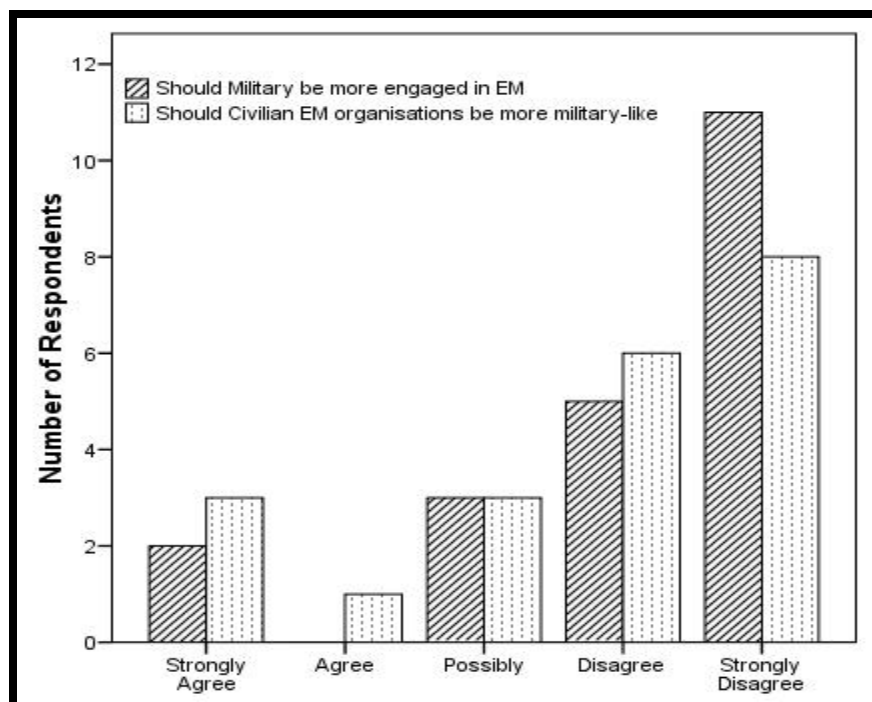
Military forces are typically equated with ‘command and control’ management approaches. We argue that this is too simplistic a perspective, as military forces themselves are not necessarily bureaucratic nor ‘command and control’ oriented, especially during crisis/emergency situations (Quarantelli 1998, p8). And, as noted previously, US-based EM research observations may be less valid outside their particular cultural contexts. Certainly, as was tragically apparent during Hurricane Katrina, senior civilian emergency managers can become embedded in bureaucratic ‘command’ rule-compliance, delay and inaction (Lester & Krejci, 2007, White House, 2006, etc.), which resulted in of supplies and equipment from the Red Cross and other agencies being turned back by governmental and/or FEMA officials due to some minor process or procedural irregularity, despite the vast cries from the public for assistance (White House 2006)

The above discussion brings forth a number of valid concerns in terms of using military resources as part of a disaster management strategy. Aspects of military culture may be counterproductive in disaster management, and there are

risks to civil liberties that must be considered. At the same time, the military is an important part of society and must be involved, both because of the special expertise and resources that they can bring to bear and because they are an important stakeholder in society. The important question to be asked is: How should the military be best engaged in the various phases of emergency and disaster management? Certainly it is considered to be important by many Canadian communities, though inclusion of them in their emergency plans is not always evident. One national survey found that “85 percent of responding municipalities expect the Canadian Forces to play a role in their community in the event of a major disaster. But only 43 percent have included the Canadian Forces Reserves in their emergency plans.” (Emergency Preparedness in Canada: Report of the Standing Senate Committee on National Security and Defence, Government of Canada, 2008, page 15)

In one survey of emergency managers in Ontario, Canada, Nirupama and Etkin (2009) found a preference for the military not to have a greater engagement than they currently have in disaster management (Figure 1).

**Figure 1: Responses by professional emergency managers in Ontario to the question: “Should military be more engaged with managing emergencies or civilian emergency management organizations follow military model?”**



Some evidence, primarily from studies of the U.S. military operating in international conditions, suggests that NGO-military relationships are an uneasy partnership. Winslow and Dunn (2002) found five main sources of tensions, these being: 1) organizational structure and culture; 2) tasks and ways of accomplishing them; 3) definitions of success and time frames; 4) abilities to exert influence and control information; and 5) control of resources. Though no similar studies have been made of the Canadian military in this area, it is reasonable to assume that similar sources of tensions are likely.

Various cultural differences have been noted between the different sectors. NGOs, for example, tend to exhibit a clan culture, which is characterized by a flattened, consensus-based decision-making structure. The military and government organizations (as noted above) are much more hierarchical, where power and authority is more explicit and leadership roles are emphasized to a greater degree (Scheltinga, Rietjens, de Boer and Wilderom, 2005). Cultural differences may also arise due to population characteristics, such as age, gender and race. NGO personnel are frequently female, older and much more multi-racial than military personnel (Ball and Febraro, 2009).

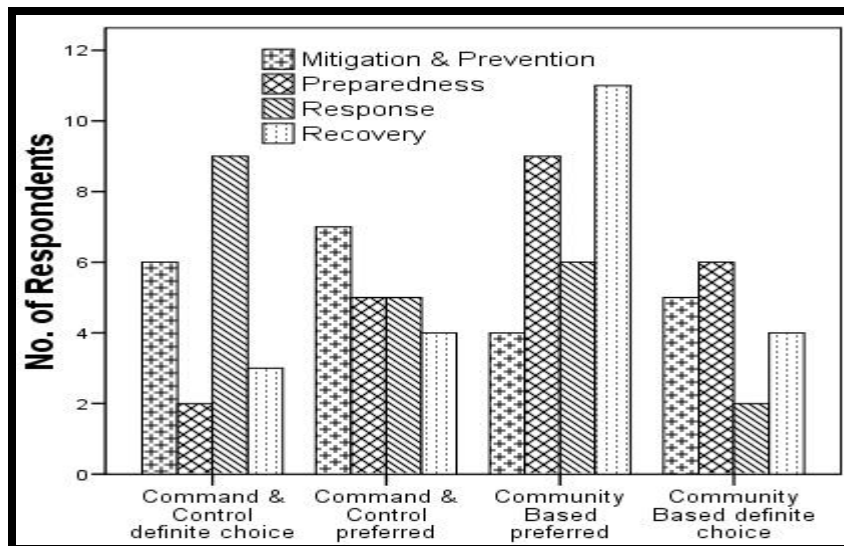
An underlying assumption with this line of reasoning is the association of 'bureaucracy' and 'command and control' exclusively with military organizations; it must be noted though, that many other organizations operate under these conditions – and perhaps to a much greater degree than the military. For example, the FEMA response to Hurricane Katrina has been critiqued (in part at least) for failing precisely because of these issues (Cooper and Block, 2006). Virtually all corporations and large public sector organizations are bureaucratic to a large degree and this certainly also includes many or most governmental agencies.

It may be too simplistic to apply a broad brush to the usefulness (or not) of command and control strategies to disaster management. Professional emergency managers certainly appear to have a range of opinions on this topic. Etkin and Nirupama (2009) surveyed emergency managers in Ontario regarding their preferences of command and control versus community based approaches for the four pillars. The results are summarized in Figure 2. Note the wide range of opinions on this topic. Though there is a noticeable preference for community based approaches for recovery, in agreement with accepted best practices, there are also significant preferences for command and control in the response stage, and even (surprisingly to the authors) in the mitigation stage.

The name assigned to civilian emergency/disaster personnel is *manager*, terminology derived from classical management and bureaucratic theory (Fayol, 1949), which is first and foremost concerned with control, rules, regulations and procedures. The quotations above, which maintains that “a hierarchical command structure” is ““appropriate within some organizations, e.g., police and fire” but

“not the best way to involve civilian and volunteer agencies” may not always be true. Since highly bureaucratic and centralized police, fire and medical units are regarded as essential high performing first response units that deal with emergencies and disasters, it is reasonable to infer that there must be some added value from a degree of structure, rules and bureaucratic principles, irrespective of whether they emanate from a civilian bureaucratic agency like police, first and medical, or from a military organization. In some situations command and control is very effective; the best way to involve civilian and volunteer agencies is complex and at times may benefit from command structure. As well the military, with a wide variety of operating units that can be more organic, decentralized and flexible than some highly controlled and centralized civilian agencies, may be an effective match for many disaster situations. Certainly the Canadian Forces recognize the importance of cooperating with civilians – the importance of this is noted numerous times in their doctrine: For example, that “Teamwork also encompasses the CF working with non-military organizations (both governmental and nongovernmental, private industry, and academia) in an integrated environment, to achieve collective objectives”. Particularly they define one of their roles as supporting civil authorities during national crises (Canadian Forces Joint Publication, 2009) and emphasize the “subordination of the armed forces to civilian control and the rule of law”.

**Figure 2: Responses of emergency managers in Ontario, Canada to the question: “Would you prefer ‘Command & Control’ or ‘Community-based’ approach for handling the complex four phases of disaster management?”**





Culture is both complex and contextual, and there can be gaps between explicit stated values and ones that actually exist. It must also be recognized that culture is a dynamic, shifting force – and within this context it has been noted that the Canadian military “is in the midst of a period of profound cultural change, and there is little consensus on the definition of the desired CF culture” (Capstick, 2003, page 47). One factor of considerable interest is that within the Canadian military there has been a shift towards civilianization, which is the opposite of militarization (Report of the Somalia Commission of Inquiry, date unknown). The term civilianization refers to military culture shifting towards more traditional civilian traits.

Thus there are two perspectives on the role of military involvement in disasters – one that it is a model that should be followed to a greater extent, and another that expresses serious concerns regarding the effectiveness of militarizing disaster management. We suggest that the critiques suffer from (1) a potentially simplistic and biased view of the military (at least the Canadian military), and (2) a lack of structure in terms of how the military is employed and integrated within the complex disaster management cycle. In order to examine this issue in more detail the following question requires further consideration:

- Are there certain types of emergencies or disasters that are particularly suited to the employment of military assets and/or a military-style response?

While accepting the validity of the limitations of a command and control model in certain types of emergency/disaster situations, it is overly simplistic to equate the military with a bureaucracy of command-and-control, as opposed to civilian agencies. As a result, we suggest the following propositions in response to this issue:

1. Canadian military organizations are more complex and heterogeneous in structure, culture and operating style than has been suggested in the critiques above.
2. Military assets (those associated with operation under a democratically elected government) are able to provide useful augmentation to civilian disaster units in certain types of disaster situations if properly coordinated and employed, and
3. Within some parts of the emergency/disaster management cycle, a traditional military-style ‘command-and-control’ approach is a preferred approach, while in other parts a community-based approach is much more effective.

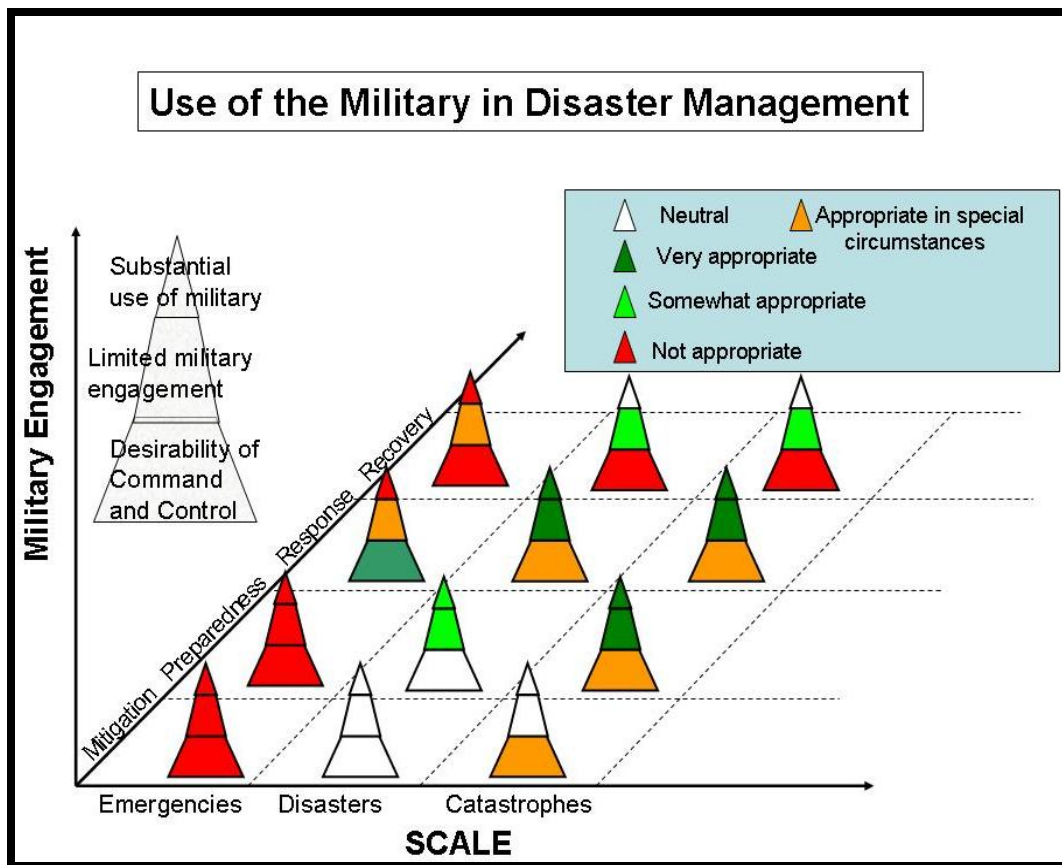
## A Conceptual Model

In order to place the propositions in context, a conceptual model is used that considers how the military fits into the four phases of disaster management, as a function of scale. Type of disaster is also an important criterion. For the purposes of this discussion, disaster type is limited to rapid onset, well defined natural, technological or human-caused events that cause damage to critical infrastructure.

This model is illustrated in Figure 3. In this model the *x-axis* represents disaster scale, ranging from emergencies to disasters to catastrophes. Emergencies are considered to be relatively localized events that require the presence of first responders. Disasters are as defined above, while in catastrophes the people and institutions that are involved in response and recovery have themselves become victims in a significant way. Clearly there are fuzzy boundaries between these definitions, but they do present a vocabulary and a continuum for discussing events of increasing scale and magnitude.

The four phases of the disaster management cycle are shown on the *y-axis*, while *the z-axis* displays a series of military disaster management scenarios, beginning with the desirability of utilizing a 'command and control' model for strategic and tactical decision-making in various emergency and disaster events. Next in the pyramid is the indicated desirability of having a very limited usage of military assets (typically, the ongoing involvement of a few selected officers engaged in liaison, planning and coordination with civilian authorities). Finally, we suggest the utility of a more substantial utilization ['usage'] of military personnel, resources and assets as large scale supplements to civilian disaster management assets. The *use* of the military is reflected in the two upper parts of the triangle (firstly limited to liaison/coordination personnel; and then to a more comprehensive deployment of military personnel and resources). The base of the triangle reflects the more fundamental philosophy of command and control models that currently exist, for better or worse, in both civilian first responder and many emergency manager organizations. The two higher levels of the triangle indicate increased usage of military personnel and resources, a process that within the context of this paper is not considered 'militarization'.

**Figure 3: Ranking of the Utility of Military Assets During Emergency and Disaster Management: (1) Pyramid Base: Command & Control Bureaucratic DM culture; (2) Pyramid Middle: Limited Military involvement (e.g. planning and coordination); (3) Substantial Military involvement (military personnel and resources).**



Perrow (1984) notes the appropriateness of centralized management strategies for more linear systems, while more complex systems require a more decentralized approach. For this reason command and control is considered more appropriate for response to small scale emergencies, and likely explains the traditional emphasis for it by first responders. In the emergency row of Figure 3, limited military engagement has historically been used, mostly for search and rescue efforts where civilian capabilities are too limited, such as in Canadian coastal waters. As per the critiques noted in section 2 above, command and

control in most of the figure is considered inappropriate, though one can conceive of disasters or catastrophes where civilian organizations have become non-functional and a command and control strategy might be needed, at least on a temporary basis.

Within Canada the military has traditionally not been involved in mitigation. This is not true in all countries though. For example, the U.S. Army Core of Engineers builds and maintains much of U.S. infrastructure, including the building of levees and dredging waterways (US Army Corps of Engineers, n.d.).

The military is often reluctant to become engaged in disaster response since it is not their primary mission. This is especially true if they are involved in overseas operations such as Afghanistan and Iraq and are therefore resource limited. One of their mottos is “last in, first out”, which reflects the idea that the primary responsibility lies with civilian agencies. Generally speaking military assets will not be used in recovery operations, particularly for smaller emergencies where civilian assets are sufficient.

A colour-coded scheme is presented that illustrates a proposed schema for the use of the military in disaster management. Red indicates ‘not desirable’, light green ‘somewhat desirable’, dark green ‘very desirable’, white ‘neutral’ and orange signify ‘desirable in special circumstances’ (such as in catastrophic situations where civilian authority structures are proving ineffective). The basic arguments for the colors chosen are as follows:

- The use of the military in most localized emergencies is not desirable (except for ongoing liaison and planning involvement), since by definition citizens in communities expect that their tax dollars and resultant civilian EM agencies/units should be able to respond and recover through the use of their own resources. However the desirability for usage of military resources increases as the scale of the emergency/disaster increases beyond the capability of locally available personnel and resources.
- The employment of military resources is most appropriate during the response phase. Nevertheless, an appropriate response requires preparedness and planning, thus it is absolutely essential that liaison, coordination, ‘needs assessment’ and planning include military commanders in all disaster phases including mitigation and preparedness. An example of the military’s role in mitigation is the role of the U.S. Army Corps of Engineers plays in structural mitigation re: domestic infrastructure, levees, etc. and the Canadian Forces officers who are assigned to liaise with provincial emergency/disaster units such as the Ontario Government’s EMO.
- In all emergency and disaster situations, although military personnel will always take direction from their own military leadership chain of

command, the tradition of military commanders employing their troops and resources only in ways explicitly requested by legitimate civilian officials will continue in order to ensure that in disaster situations the military is operating according to the express direction and wishes of civilian authorities<sup>7</sup>. Thus, the role of military commanders in emergency/disaster situations includes liaison, planning and offering expert advice in the ramifications of deploying their resources (eg. Strategy and tactics), but not in formulating civilian emergency/disaster policies and procedures.

The result of the analyses suggest that although the military plays an ongoing role in planning, liaison, coordination and expert advisors in strategy and tactics throughout all phases of the DM cycle, the actual employment of military resources is best suited for the 'preparedness' and 'response' phases, with much greater marginal utility as the scale of emergency/disaster increases, and when it is clear that localized civilian emergency management personnel and resources prove unable to cope with the demands of the situation. Apart from ongoing planning and liaison mentioned above, for cost accountability and other reasons military resources should generally be first to be removed and redeployed back to their primary role of national defence, making military involvement least likely during the recovery phase of a disaster.

## **Discussion of the Role of the Military in Canadian Disaster Management**

### **Background**

While the debate surrounding the militarization of disaster management, and for that matter 'militarization' in general, has not been as prevalent in Canada as it has been in some other countries, it is still necessary to consider the roles and most appropriate engagement of military assets during a disaster situation. When examining the use of the military in an emergency and disaster management context a clear distinction must be made between assuming a greater mandate and official responsibilities (which implies militarization) and having the military being a partner by playing an active, effective and responsive role in disaster situations. That being said, the current debate appears not to be focused as much around *if* the military should be used in disaster management but more *how* it

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<sup>7</sup> This is true in Canada and the U.S., but not perhaps in a military dictatorship. For example, see - SP38 The Storms of '98: Hurricanes Georges and Mitch - Impacts, Institutional Response, and Disaster Politics in Three Countries .

should be involved, or the fit of the military. The basis of determining *how* the military can be value-added in disasters, while not creeping toward “militarization”, can be found in matching a nation’s basic civil/military interaction, legislation and policy directives, and the military’s doctrine and operating culture with the principles of disaster management.

At the outset, the historical usage of the military in Canadian emergencies and disasters, the nature of the fundamental civil/military interface, the federal and provincial Canadian legislation, and the historical small size and scarce resources associated with Canada’s peacetime military forces all combine to make any move to militarization extremely unlikely in the Canadian context. The Constitution Act of 1867 (The BNA Act), the Emergencies Act, and the National Defence Act ensure that the Canadian Forces play a supporting, but not dominating role in emergency and disaster management in Canada. Lastly, the Canadian Forces basic command and control doctrine and operating culture are such that the military fit in selected parts of the emergency and disaster management cycle is likely better than implied by some critiques.

## **Operating Framework**

The argument that the Canadian Forces can operate effectively within a domestic disaster management situation is based upon the following:

- That as opposed to a strict command and control, the CF tends to delegate authority to the lowest possible level
- That the policy context within which personnel operates encourages a cooperative process with other agencies, particularly civilian organizations
- That the CF has specific unique abilities and resources that are needed in some aspects of disaster management.
- That the CF has a history of working successfully with other agencies in an international context, particularly with the UN in doing humanitarian aid, and ‘peacekeeping’ operations; and
- That the CF has a history of working successfully in domestic disaster situations.

In general, the civil/military interface and overall framework of how the Canadian Forces fit into disaster management can be summarized as:

- The military always operates in support of civil authorities
- The military, when requested, produces a rapid, positive and relevant effect on the situation due to the 24/7 nature of military training and operations

- The military provide a unique set of relevant skills and capabilities, and
- Military personnel operate with and in augmentation to civilian authorities, and are never in regular direct contact or confrontation situations with the public.

The command and decision making doctrine of the Canadian Forces connects well with the approach considered effective in disaster management, namely delegating considerable decision making authority to the lowest and closest level to where the action is occurring. The chaotic and rapidly changing 24/7 (24 hours per day, 7 days per week) continuous operating environment that typifies the modern military operating context is a good match to the chaos and confusion of disasters and catastrophes; this is why the 'mission command' doctrine (Canadian Forces Joint Publication, 2009) used by the CF<sup>8</sup> empowers lower level decision makers and accelerates the time of decision action cycles. This is accomplished by recognizing that very much like in emergency management, the people closest to the problem, the local leaders and experts, have the best knowledge of not only what is going on but also what is required to deal with the situation.

This approach works on the concept that senior leaders and officials conduct an analysis to decide *what* needs to be done at the overall strategic level, but ensuring that they leave tactical details and decisions about *how* exactly to accomplish the objectives to people who are closest to the problem. As long as the 'intent' of the higher level is being achieved and the basic direction is being followed, the situation is not micro-managed, but rather coordinated and simultaneously 'loosely coupled' at the operational level. Priority of operational (tactical) decision making is left with the person directly involved in dealing with the problem, and not with people in a command post far from the scene.

In fact, as discussed earlier, the Incident Command System (ICS), part of the national US disaster management 'Incident Management System', is derived from a variation of this NATO-standardized military command and staff system, with lower level commanders having priority for decision making, while being supported by staff functions of 'operations' 'planning' and 'logistics' etc. One advantage of the military 'mission command' and US ICS systems is the intent to explicitly take into account the operating and cultural differences among and between various agencies, irrespective of whether they are military or civilian in derivation. This has the potential to greatly facilitate civil/military cooperation.

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<sup>8</sup> Mission command: "The CF will continue to develop and exemplify mission command leadership as the leadership philosophy of the CF. Mission command articulates the dynamic and decentralized execution of operations guided throughout by a clear articulation and understanding of the overriding commander's intent. This leadership concept demands the aggressive use of initiative at every level, a high degree of comfort in ambiguity, and a tolerance for honest failure."

Virtually all emergency management organizations in Canada now use ICS, or a system very similar to it (Incident Management for Ontario, 2008). Some, like Emergency Management Ontario, offer online courses on it in order to help implement interoperability.

While its primary tasks are national defence and maintenance of a general war-fighting capability, the resources and flexibility of a modern military force like the Canadian Forces makes it an extremely useful source of assistance to civil disaster management authorities, primarily during the response phase. The scope of applicable military resources and capabilities is very broad and ranges from individual specialized pieces of equipment such as portable water purification systems, to small scale specialized capabilities such as Chemical Biological Radiation Nuclear (CBRN) response, strategic planning, coordination and logistics capabilities for large and complex situations. The Disaster Assistance and Reconstruction Team (DART) is also available to assist in limited scale engineering tasks including the provision of medical treatment and potable water. In many cases, such as CBRN and aviation support to certain police operations, standing Memorandums of Understanding (MOU) exist and are frequently used (Canadian Military Doctrine/Canadian Forces Joint Publication, 2009).

One issue of concern is the use of military to control or suppress civilian activities. Sadly, some countries have used their military to terrorize their own citizens, and this situation must be avoided in democratic societies; hence the legal and cultural restrictions that exist in Canada. Although legislation does exist to enable the Canadian government to commit the Canadian Forces to assist in maintaining public order in support of civilian law enforcement agencies (Assistance to Law Enforcement Agencies (ALEA), and Aid of the Civil Power (ACP), these are 'last resort' scenarios (Chalifour et al, 2004). The key operating maxim in emergencies and disasters is to ensure that military forces are not placed in situations where they would be in direct confrontation with the citizens of Canada. Even if deployed in support of law enforcement agencies, military personnel would not have a presence on the front line. In Canada, crowd confrontation is viewed as a law enforcement/police, not military, function. The soldiers' primary duty is to support, protect and assist the police with everything from personal protection to additional surveillance and logistics for living in austere conditions. Since 1867 the armed forces in Canada have been deployed in aid of the civil power (ACP) or similar situations on approximately 110 occasions (source). Only four of these occasions have been since World War II with the most recent event being the Oka crisis of 1990. Moreover, ACP has never been instituted as a result of a disaster or a public order situation linked to a disaster.

As indicated by Figure 3, there are circumstances when unique military capabilities are required at a tactical level of response. For example, in December 2005/January 2006 when there was a drinking water emergency in a remote First



Nations Community in Northern Ontario, the military provided support by moving, setting up and operating a portable water purification system. The Canadian Forces have also played key supporting roles in the forest fires that ravaged British Columbia in 2005, Hurricane Juan aftermath and large snow storms that hit the Maritime Provinces, as well as a number of smaller operations. These are all examples of the effective use of the military in its supporting role. However, perhaps the best examples that demonstrate how the military can be used effectively in multi-faceted complex disasters, which also had the potential to include control of the public type activities, are the 1950 and 1997 Winnipeg floods and the Ice Storm of 1998 in Quebec and Eastern Ontario. These disaster scenarios were situations where the civil authorities were in dire need of support and the military response came from across the country with little to no advanced warning.

In these instances, all other non-essential military activities in Canada were immediately halted and forces mobilised and sent to the disaster areas. Founded upon the same ethics and core values of all other agencies involved in the operation, and guided by the overall operating framework previously described, the military plugged into and supported civil authorities and agencies – from provincial and municipal government for overall coordination down to the level of filling sandbags, and clearing debris and fallen power lines. Although always under a military chain of command, the military supported and worked in conjunction with, and according to the direction of, the responsible civil authorities. Hillier (2009) describes how the interactions between civil society and the Canadian Forces during the 1997 Red River Flood and the 1998 Ice Storm was a positive turning point, with the public finally gaining respect and then giving support to their troops.

In many other countries, it is considered normal for the military (normally the army) to play a key role in responses to emergencies or disasters. Examples include the US, most recently exemplified by Hurricane Katrina, but also in the UK the British Army was actively involved in the BSE epidemic of the early 1990's. Some of the more common tasks performed by military units in emergencies and disasters include (Anderson 1970. UN):

1. Air transport, logistics and airspace management/coordination
2. Medical services and support
3. Mass feeding and shelter
4. Search and Rescue
5. Communications
6. Infrastructure support: Provision of general services including drinking water, power generation, engineering tasks such as road repair, etc.
7. Provision of Expert personnel, etc.

The argument in favor of military involvement in disaster management is as follows: In general terms, military and large scale disaster environments have many shared characteristics given that they are chaotic, uncertain, and rapidly changing. Furthermore, to meet with success in this type of environment, the overall effort must include a diverse group of agencies and emergent partners working together in a coordinated fashion. Recognising this reality, the Canadian Forces' command doctrine and operating culture are specifically designed to work in conjunction with other agencies in a chaotic environment. From a military perspective it is well understood that, apart from full scale combat operations, success can only be achieved if the efforts of the military are well coordinated and synchronized with those of the other government departments, numerous aid and relief agencies, and the local population. Working in a diverse, multi-national, multi-agency environment is not new to the Canadian Forces, is exactly how international operations are conducted, and is something that the Canadian Forces is experienced in. The argument against military involvement in disaster management focuses on an overemphasis on command-and-control, top-down management structures that are inappropriate to much of disaster management, and a mismatch between civilian and military cultures.. Both perspectives have value. Optimization of disaster management depends upon finding an appropriate balance.

## **Conclusion**

It is the collective view of the authors' that military forces of democratic nations have a great deal to offer their citizens during emergency and disaster situations, although it is clear that these military assets must be selectively and properly employed to supplement, but not replace the local and provincial/state civilian emergency/disaster management authorities. Furthermore, military commanders must have an ongoing involvement in liaison, coordination and planning with civilian provincial disaster agencies to ensure that if and when their assistance is required, the integration will be as seamless, quick and effective as possible, and under civilian authority. We argue that the Canadian military is not synonymous with bureaucracy and command and control models, which can also be prevalent in civilian institutions. Their effective integration into the disaster management matrix will depend upon finding an appropriate balance between community engagement and top down management philosophies. The fast, effective and decentralized response of the Canadian military forces in numerous disaster situations speaks to their ability to function in many emergency and disaster environments.

In conclusion, as we argued in this article and as reflected in Figure 3, there are important roles for military assets in emergency and disaster management. An examination of relevant legislation and policy, cultural backgrounds, historical relationships between civilian and military organizations and the military, and current civilian and military operating cultures and doctrine, make it clear that for democratically accountable governments and their subordinated military forces, involvement in emergencies and disasters as 'supplemental resources' can be very beneficial for communities and citizens. Various academic critiques have identified potential problems related to good cooperation between military and civilian cultures. Without doubt they exist, but these barriers are likely to be country and culturally specific, and within Canada are far outweighed by the advantages gained from the integration of the CF into the disaster management cycle. The key to effective cooperation is to ensure ongoing planning, liaison, coordination and needs assessment between civilian and military officials, and sensitivity to different cultures, in order to determine the most appropriate fit and most effective supplemental uses of the military in emergency and disaster situations.

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