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**CANADIAN SPECIAL OPERATIONS AVIATION:  
A STRATEGICALLY RELEVANT FORCE**

By/Maj Richard Morris

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## **ABSTRACT**

In today's international security environment, Special Operations Forces (SOF) have often become a force of choice for governments who possess them. They offer economy of force and provide flexibility when dealing with crises that require swift action and often are politically sensitive. SOF however are only as effective as the sum of their parts. With this in mind, the paper argues that Special Operations Aviation (SOA) is a strategically relevant force for Canada, but that in its current state it is unable to provide the desired effect. The argument is made through an examination of the current and future international security environment's challenges, and how SOF through theory and practice provide effective solutions. In addition historical examples of the strategic relevance of SOA to special operations are examined. This is followed by an analysis of Canadian SOA and how it needs to develop in the future to achieve its strategic and required potential.

## INTRODUCTION

Modern Special Operations Forces (SOF) as typically understood by today's standards have existed in some form or another since World War II in order to provide national governments and their military commanders with unique skill sets that can be called upon in times of need. SOF's uniqueness in addition to the employment of non-conventional tactics and equipment, as William McRaven notes, stems from their ability to succeed in the face of normally numerically superior forces.<sup>1</sup> The inherent high levels of readiness of SOF units and their ability to operate both covertly and overtly have made them an extremely attractive and cost effective strategic military asset. This was only accentuated in the post Cold War economic and strategic environments where there was the expectation of a "peace dividend" and the probability of massive conventional state on state warfare declined considerably. The former never really materialised, and the latter was largely replaced by internal or smaller regional conflicts resulting from failed or failing states. Under these economic and global strategic environments, SOF became an attractive asset to enable national governments to shape their policies abroad.

The tragic events of September 11<sup>th</sup>, 2001 (9/11) again dramatically changed the global strategic environment. The value of SOF was reinforced and increased in the ensuing "global war on terror" where:

[t]heir inherent responsiveness, small foot-print, cultural and regional awareness, and impressive suite of capabilities made them a force multiplier with an impact on operations far in excess of the numbers actually employed.<sup>2</sup>

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<sup>1</sup> William H. McRaven, *Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice* (Novato: Presidio Press, 1996), 4.

<sup>2</sup> Horn, Bernd and Tony Balasevicius, ed., *Casting Light on the Shadows: Canadian Perspectives on Special Operations* (Toronto: The Dundurn Group, 2007), 13.

The Canadian military was not blind to the changing nature of global security. Consequently, under the direction of then Chief of Defence Staff General Rick Hillier, a sweeping command and control transformation was initiated. This included the creation of the Canadian Special Operations Forces Command (CANSOFCOM) in February 2006.<sup>3</sup> The envisioned purpose of this command was to generate SOF task forces in support of Canadian Forces (CF) operations, both domestically and abroad.<sup>4</sup> To accomplish its missions and tasks, CANSOFCOM was comprised of four units: Joint Task Force (JTF) 2, the new Canadian Special Operations Regiment (CSOR), an expanded Joint Nuclear Biological Chemical Company (JNBC)<sup>5</sup>, and 427 Tactical Helicopter Squadron (THS), under operational command (OPCOM).<sup>6</sup> SOF was now embedded as an integral element of the CF alongside traditional land, sea and air components.

Like CSOR and the JNBC units, the aviation unit represented a new development in SOF capabilities for Canada. Until 2006, 427 THS had only provided limited dedicated support to the domestic counter terrorism mission of JTF 2. It had now been officially re-rolled as 427 Special Operations Aviation Squadron (SOA Sqn) and the whole of the unit was tasked to provide integral dedicated aviation support to Canadian SOF.<sup>7</sup> Canada had now joined a small hand full of nations that possessed highly trained

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<sup>3</sup> Canada. Department of National Defence, *Canadian Special Forces Command: An Overview* (Ottawa: DND Canada, 2008), 2.

<sup>4</sup> *Ibid.*, 2.

<sup>5</sup> This unit would later be renamed the Canadian Joint Immediate Response Unit (CJIRU).

<sup>6</sup> *Ibid.*, 10.

<sup>7</sup> *Ibid.*, 11.

Special Operations Forces along with critical, integral and enabling elements such as aviation.

However, the mere change in command relationships and the re-rolling of 427 Tactical Helicopter Squadron only represented the first step in the development of a true SOA capacity for CANSOFCOM and the Canadian Forces. The equipment, airframes and the personnel establishment in 2006 still largely reflected legacy Cold War and conventional force organization and concepts. In four years there have been some incremental changes which have been made to facilitate the development of SOA; nevertheless the overall capability is still nascent. Consequently, this paper will show that SOA is a relevant strategic capability for Canada, but that it is currently insufficient requiring further development to ensure a mature, sustainable, and effective competency for the Canadian Forces.

In order to accomplish this, the contemporary and future security environment will be outlined. This will be followed by a brief look at the existing theory of SOF, and their roles. These first two chapters will provide context and an understanding of the relevance of SOF in the present and future operating environments. This will then provide the reader a framework or background to better comprehend the two SOA case studies. These case studies will be based on special operations conducted by the United States and the United Kingdom where SOA held a key role as a strategic enabler in each instance. Finally Canadian SOA will be examined against the backdrop of the first three chapters in order to determine its current capacity and where it needs to be in the future to secure its place as a relevant force.

## **AUTHOR'S NOTES**

In addition, the information that will be presented in this paper will be kept at an unclassified level. The result will be that some topics and subsequent discussions may appear to be somewhat general in nature. However, I have decided to do this in order to facilitate the potential for broader dissemination with the hope of generating a greater level of thought and discussion.

The reader will also likely take note that in discussing SOF and SOA I have avoided discussing the roles that each may have in domestic operations. This was a conscious decision on my part. This is a result of what I call the “idea of last response versus first response.” That is to say generally in the domestic role SOF is a force of last resort called upon when the civil authorities are unable to deal with the crisis at hand. Conversely, with respect to international operations SOF are often able to provide a first response, giving those governments and militaries that employ them strategic flexibility. It is this idea of the strategic flexibility that SOF/SOA can provide that will be explored.

## CHAPTER 1 - THE CONTEMPORARY AND FUTURE SECURITY ENVIRONMENT

There can be little doubt that the events of 9/11 caused a monumental shift in the global security environment. Since that marked day, there has been much study and thought applied to the circumstances that now shape the international security environment and those that will affect it as we move forward into the future. Though it is not a new phenomenon to attempt to analyse current and future international trends, there has been an increased emphasis placed on the criticality of understanding the global landscape due to its now inherent complexity. Put into context:

...it is important to understand the potential operational challenges generated by the future security environment in order to ensure the CF has the ability to carry out the roles set for it by Government policy.<sup>8</sup>

### KEY TRENDS

Though the post 9/11 focus has been on global terrorism and combating it, there are additional and important factors that exist which are shaping the world today and that of tomorrow. This chapter will outline key security trends that have been identified and seem to be commonly recognized, at least by Canada and its key allies. Globalization, Rapid Scientific and Technological Innovation, Geopolitical shifts, Resource Scarcity, Demographic changes, Urbanization, the threat of pandemic Disease, Failed and Failing states and the growing significance of non-state actors will be outlined in order to understand the shifting security environment of the world today.<sup>9</sup> This will provide the

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<sup>8</sup> Peter Johnston, *Future Security Environment 2025* (Ottawa: Operational Research Division Directorate of Operational Research (CORP), 2005), 1.

<sup>9</sup> These Trends are common to numerous global security assessments from Australia, Canada, the United States, and the United Kingdom.

background to frame the relevancy of the theory and roles of SOF that will be explored in the next chapter.

## **Globalization**

Globalization, though it is a popular expression in use today, is not necessarily a new trend.<sup>10</sup> “The term globalization refers to the increased mobility of goods, services, labo[u]r, technology and capital throughout the world.”<sup>11</sup> The rapid expansion of telecommunications technology has been the main catalyst for this phenomenon in most recent years. It has not only resulted in a significant interdependent global economy as noted above, but it has also integrated societies and increased exponentially the amount and speed of exchange of ideas, both nationally and internationally.<sup>12</sup> Globalization is likely somewhat unavoidable in terms of international economic and social evolution. It has had several major international economic and other benefits. However, there are some inherent disadvantages, and to date the advantages of globalization have not been universally realized nor universally accepted. It is for these reasons that the affects of Globalization must be understood from a security perspective.

The globalization process has as previously mentioned resulted not only in the ease and speed of movement of people, information and technology worldwide, but almost necessitated it. For instance, in terms of people, the need to sufficiently screen the large numbers of cross border movements conflicts with the requirement to do it in an

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<sup>10</sup> *Ibid.*, Fig 1, 2, clearly shows the significant increase of integration of the Global economy from 1970 to 2000.

<sup>11</sup> *Ibid.*, 1.

<sup>12</sup> Canada. Department of National Defence, *Future Force: Concepts for Future Army Capabilities* (Kingston: Directorate of Land Startegic Concepts, 2003), 2.

efficient manner, so as to not unnecessarily disrupt the economic activity driven by these persons. Also, information and knowledge can now be easily and widely accessed, and disseminated. This makes it complicated to restrict the availability of information to, and disrupt its passage within elements that pose a security threat. The World Wide Web and the “CNN” effect represent difficult entities to monitor and control effectively. The speed at which communications technology, in particular, has developed and become available globally has only compounded the difficulty of this situation. In summary;

[The] growing access to information and technology is dramatically heightening the potential, both among state and non-state entities, to acquire the means to succeed. (e.g. [Weapons of Mass Destruction] WMD and their means of delivery).<sup>13</sup>

We will see the impact that this has on the relevancy of the roles and missions of SOF in the next chapter.

Globalization has seen significant benefits realized by some; however there is the risk of a widening of the gap between the “haves and the have-nots”. The challenges for contemporary policy makers and those of the future will be to ensure that the benefits of globalization are realized by developing nations and regions of the world.<sup>14</sup> The likely consequences of not succeeding in this endeavour would be a backlash from those who have been largely excluded from the material benefits of globalization.<sup>15</sup> The potential risk if not appropriately addressed, is that in the increasingly interconnected and complex economic environment there will be “stable” and “unstable” states. Stable states will be

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<sup>13</sup> *Ibid.*, 3.

<sup>14</sup> Johnston, *Future Security Environment 2025*, part III.

<sup>15</sup> Canada. Department of National Defence, *Future Force: Concepts for Future Army Capabilities*, 3.

those who have the ability to comply with the demands and scrutiny of the international economic structure, thus securing continued and further investment. Unstable states will not be able to meet these conditions and consequently may be caught in a vicious circle of poverty leading to potential failure.

In other words, globalization will play a large role in determining the future trouble spots and, if the economic benefits of the global trading system do not spread to the developing world, may sow the seeds of future conflicts.<sup>16</sup>

As we will see in the coming chapter SOF will have a role to play in warning and shaping some of these potential conflicts arising from globalization.

The international integration due globalization has resulted in particular in an economic interdependence. This inter-connectedness has encouraged participants to take a shared interest in the continued health and welfare of the system.<sup>17</sup> The consequence of which has been the reduction of the likelihood of traditional state on state warfare. This is in part due to the resultant greater uniformity across cultures and societies.<sup>18</sup> Though this has benefitted nations and regions that have like minded societies, governments or cultures, there is definitely not a universal acceptance of this order. The reality is that there will be others in the world that will feel threatened by the norms and values promoted by globalization. This may result in significant resentment and violent reaction from such entities as theocratic states and traditional cultures.<sup>19</sup> For evidence of this, one

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<sup>16</sup> Johnston, *Future Security Environment 2025*, part III.

<sup>17</sup> Canada. Department of National Defence, *Future Force: Concepts for Future Army Capabilities*, 3.

<sup>18</sup> *Ibid.*, 3.

<sup>19</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 1.

just has to look at the apparent clash between the ideals of “the West” and Islam, of which ongoing conflicts in Iraq, Afghanistan and the Middle East are all representative.

The impact that globalization has had and will continue to have on the international security environment is very real and will require foresight and planning to minimize its effect. People, money, and ideas now move faster around the world, not always for the good.<sup>20</sup> Ultimately, events abroad now have the potential to have a profound impact on Canada and its interests.<sup>21</sup>

### **Rapid Scientific and Technological Innovation**

The rate of change and innovation in a number of technological areas has the potential for being very beneficial politically, socially, economically, and militarily. This stems from a number of recent advancements in the fields such as information technology, robotics, nano and bio-technologies.<sup>22</sup> Societies stand to benefit from increased efficiencies like more effective communications and information management technology, to more effective and new health procedures, to increased efficiencies in business and industrial practices. For the military, advances in information management systems, enhanced sensing equipment, and the precision, range and lethality of weapons may allow the possibility to increase the effectiveness of applying proportional levels of force.<sup>23</sup>

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<sup>20</sup> Australia Department of Defence, *Australia's National Security: A Defence Update* Department of Defence, 2007, 14.

<sup>21</sup> Canada. Department of National Defence, "Canada First Defence Strategy", <http://www.forces.gc.ca/site/pri/first-premier/index-eng.asp>, 6.

<sup>22</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 2.

<sup>23</sup> *Ibid.*, 2.

However, there are dangers associated with these rapid advances in technology as well. Militarily, there are developments underway focussed on high yield weapons. Advancements in enhanced blast, thermobaric and fuel air explosives are but a few examples. This kind of weaponry is in direct contrast to the precision targeting, and the scalability of effects inherent in other technologies. The security threat that exists in this circumstance is that given the nature of globalization, it is likely only a matter of time before proliferation of such weaponry becomes an issue.<sup>24</sup> The challenge for Canada and other nations will be to prevent proliferation of this technology and to mitigate the threat of its use as much as possible without entering a technological “arms” race.

### **Geopolitical Shift**

It is generally accepted that US predominance, will prevail for the foreseeable future. “To put it another way, the role played by the United States in global affairs remains the most important geopolitical factor shaping the international security environment.”<sup>25</sup> The current existing gap between the military capabilities of the US and its potential adversaries is such that there is little doubt that the US will retain its position of unrivalled military might, for at least the next two following decades. In fact this capability gap will likely widen over the near term as a result of unmatched US investment in defence research and development. Despite this outlook, it would be naïve to assume that US hegemony as it exists today will remain unchanged into the future.

The international landscape is already showing signs of transformation. Countries such as China, India, and Russia, who all have regional interests and goals, have shown

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<sup>24</sup> *Ibid.*, 5.

<sup>25</sup> Johnston, *Future Security Environment 2025*, part IV, para 30.

interest in expanding their influence beyond their traditional spheres.<sup>26</sup> The consequence of which is that US/Western policies and interests will likely be increasingly at odds with those of these emerging powers.<sup>27</sup> In addition, the presence of states with unpredictable regimes or “rogue” states that have or are attempting to acquire advanced weaponry and nuclear capabilities increases the potential for conflict.<sup>28</sup> In either case, the risk of armed conflict could rise, making Western influence and presence in many regions problematic and risk prone.<sup>29</sup> The military power of the US and its allies is likely sufficient to counter most threats for now. However, as time goes on can the US sustain the fiscal and political costs of policing global conflict? Or will they adopt a semi-isolationist posture only acting and committing resources and American lives when their key national interests are at stake? Though relatively stable for the foreseeable future, it is evident that the global Geopolitical situation will shift bringing new challenges to international security with it.

### **Resource Scarcity**

Climate change, burgeoning regional population growth and environmental degradation will lead to significant shortages of resources in the coming years. While some key non-renewable resources such as cropland and timber will be adversely affected, it is water and oil that are forecasted to pose the greatest threat to global

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<sup>26</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 2.

<sup>27</sup> Canada. Department of National Defence, *Future Force: Concepts for Future Army Capabilities*, 6.

<sup>28</sup> Canada. Department of National Defence, *Canada First Defence Strategy*, 12 March 2010, 6.

<sup>29</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 3.

security. The potential is such that a reduction of availability of these key resources will contribute to regional/state weakness, economic decline and societal instability.<sup>30</sup>

The increasing decline in the availability of water resources is of particular concern. 3 billion people, from 48 countries, are in jeopardy of facing significant freshwater shortages by 2025. There are approximately 20 countries of the Near East and North Africa that stand to suffer the worst shortages. In these areas, supplies are currently predicted to run dry by 2100 if per capita consumption and inefficient agriculture practices are not controlled or curtailed.<sup>31</sup> In areas such as; the Middle East, Central Asia, parts of Africa, and South America the control of access to water resources will become a source of power. Consequently this essential strategic resource has significant potential to be a basis for conflict in the future.<sup>32</sup>

In addition to water, oil will remain a resource of great strategic interest, as demand continues to grow exponentially due to the increasing requirements of the developing world's economies. Regions such as the Middle East will remain vital due to their developed oil production and reserves. Other regions stand to increase in strategic importance such as; parts of Africa, the Caspian region, the South China Seas, numerous equatorial regions, and in the Western hemisphere, Canada and Venezuela.<sup>33</sup> Much like the case with water, disputes may arise over "issues of control and access... pos[ing] a

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<sup>30</sup> Canada. Department of National Defence, *Future Force: Concepts for Future Army Capabilities*, 9.

<sup>31</sup> United States. Central Intelligence Agency, "Long Term Demographic Trends: Reshaping the Geopolitical Landscape," (July 2001), [https://www.cia.gov/library/reports/general-reports-1/Demo\\_Trends\\_For\\_Web.pdf](https://www.cia.gov/library/reports/general-reports-1/Demo_Trends_For_Web.pdf), 77.

<sup>32</sup> Canada. Department of National Defence, *Future Force: Concepts for Future Army Capabilities*, 9.

<sup>33</sup> Johnston, *Future Security Environment 2025*, part V, para 54.

growing source of tension between developed and developing nations, as well as within the developing world itself.”<sup>34</sup> The increased demand for oil may be mitigated somewhat if a viable alternative fuel source is discovered. However, this would also have a strategic impact as current oil rich areas would be diminished in strategic importance and potentially marginalized economically. The consequences of which would be marked, as many of these regions and countries depend almost exclusively on the economic benefits of the oil industry. Some of these nations are already breeding grounds for extremist ideologies and if their economies were to be significantly adversely affected, there is great risk of an increase in instability and violence.<sup>35</sup>

### **Demographic Changes**

There are several demographic trends that will affect global security in the coming decades.<sup>36</sup> In particular the two trends of note and in stark contrast to one another are; the declining birth rates and ageing populations of the developed world and the apparent “youth bulge” of the developing world. Both of these trends are expected to place significant strain on their respective societies and economies.

Demographically, the developed world is characterized by ageing and stagnant populations. “Specifically, current birth rates in much of the industrialized world are at, or below, the replacement rate of 2.1 children per women.”<sup>37</sup> As a result, the ratio of tax-paying workers to non-working pensioners is expected to be reduced by half by the year

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<sup>34</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 4.

<sup>35</sup> Johnston, *Future Security Environment 2025*, part V, para 55.

<sup>36</sup> *Ibid.*, part V, para 50.

<sup>37</sup> *Ibid.*, part V, para 50.

2050.<sup>38</sup> This may cause significant economic strain as the tax bases of developed nations decrease and the demand for social services increase. Industrialized nations may see a sharp decline in their economic prosperity and ability to contribute to global economic stability and security.

In the developing world the demographic changes are of a different nature. In many developing regions, there is a significant growth in the youth cohort, persons of the ages 15-29.<sup>39</sup> Afghanistan, Pakistan, Colombia, Iraq, Gaza, and Yemen, which are amongst some of the poorest and most politically unstable nations in the world, are forecasted to have the largest youth populations through 2020. Most of these countries will lack the economic, institutional and political means to effectively integrate the youth into society.<sup>40</sup> This will lead to high demands for employment and essential services in these nations that will not be able to be satisfied. The results of which will be widespread disenchantment. This has already been experienced in countries such as; Algeria, Sri Lanka, Turkey and Iran, where youth cohorts have been the source of political unrest and civil strife.<sup>41</sup>

In both instances, the demographic shifts will potentially threaten global security through economic stressors and social turmoil.

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<sup>38</sup> United States. Central Intelligence Agency, *Long Term Demographic Trends: Reshaping the Geopolitical Landscape*, 10 March 2010, 23.

<sup>39</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 3.

<sup>40</sup> United States. Central Intelligence Agency, *Long Term Demographic Trends: Reshaping the Geopolitical Landscape*, 10 March 2010, 36.

<sup>41</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 3.

## **Urbanization**

Closely linked to the previous demographic changes is the trend in the developing world towards continued population growth and subsequent rapid urbanization. It is projected that by 2015, that for the first time in human history, the majority of people in the world will reside in urban centres. By 2025 it is expected that two thirds of the developing world's population will be in cities.<sup>42</sup> "Historically, urbanization has correlated to increased economic growth."<sup>43</sup> This has not necessarily been the case in the developing world. For many developing nations the massive and rapid migration of people into existing urban centres has overwhelmed the available services and infrastructure.<sup>44</sup> This has often resulted in the inability to effectively manage the rapid influx to these cities.<sup>45</sup> The potential consequences of this trend in the developing world will be continued mass poverty, social unrest and discontent. These conditions may prove to be overpowering for already tenuous governments, leading to political collapse and thereby destabilizing national and regional security environments.

## **The Threat of Pandemic Disease**

Pandemic disease is generally purely viewed as a health issue; however, it has the potential to affect the global security environment as well. Once again it is the developing world that is most vulnerable to pandemic disease and its possible

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<sup>42</sup> United States. Central Intelligence Agency, *Long Term Demographic Trends: Reshaping the Geopolitical Landscape*, 10 March 2010, 55.

<sup>43</sup> Johnston, *Future Security Environment 2025*, part V, para 61.

<sup>44</sup> Canada. Department of National Defence, *Future Force: Concepts for Future Army Capabilities*, 7.

<sup>45</sup> Johnston, *Future Security Environment 2025*, part V, para 61.

destabilizing effects. This vulnerability stems largely from the developing world's lack of adequate health care systems, due to insufficient funding and education.<sup>46</sup> The widespread poverty, lack of basic services and appropriate infrastructure due to overpopulation and rapid urbanization will only exacerbate the problem. The consequences are such that;

[t]hese diseases are likely to aggravate and, in some cases, may even provoke economic decay, social fragmentation, and political destabilization in the hardest hit countries... whose health systems are ill-prepared to deal with them.<sup>47</sup>

Industrialized nations with well established health care systems may not suffer the same human toll of pandemic disease as the developing world; however, they are not invulnerable to possible destabilizing effects. In the developed world, infectious disease rates have fallen, but lifestyle induced diseases are on the rise and combined with ageing populations this often results in costly long term care and rising fiscal strain on social systems.<sup>48</sup> “In short, disease will likely destabilize many regions of the world in the years ahead.”<sup>49</sup>

### **Failed and Failing states**

In most instances the previously noted trends do not become the direct cause of conflict, but in combination may lead to state failure and subsequent instability. In most instances of failed states, they lack the ability to provide economic stability, let alone the prospect of bettering the economy. In addition these states are unable to provide for the

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<sup>46</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 5.

<sup>47</sup> United States. Central Intelligence Agency, *Long Term Demographic Trends: Reshaping the Geopolitical Landscape*, 10 March 2010, 69.

<sup>48</sup> *Ibid.*, 69.

<sup>49</sup> Johnston, *Future Security Environment 2025*, part V, para 76.

basic welfare of their citizens. Given that economic development and infrastructure improvements normally take decades to achieve, it is unlikely given the low starting point of many of the nations of the developing world that the governments will be able to improve conditions without significant aid. The consequences of which often manifest themselves in discontent of the populaces, providing breeding grounds for extremism and violence.<sup>50</sup> There are many regions with states that already exhibit the kind of weakness and instability noted above, such as; the Middle East, Latin America, Africa, South Asia, Eurasia and Central Asia.<sup>51</sup> The widespread existence of failed or failing states has resulted in this phenomenon becoming a central security concern, and arguably it may be the primary source of current international instability.<sup>52</sup>

### **Growing Significance of Non-state Actors**

Though states remain the key international players, so-called non-state actors are increasingly having a significant influence on the global stage. These entities include; Non Governmental Organizations (NGOs) monitoring governments' performance and advocating policies, to multi-national corporations seeking a greater profit. More importantly from a security perspective, they also include criminal organizations such as; armed irregulars, insurgents, warlords, and terrorist groups who frequently resort to violence to achieve their aims; and who are ever increasingly transnational in nature. Failed or failing states and globalization exasperate the problem as weak states often

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<sup>50</sup> *Ibid.*, part V, para 78.

<sup>51</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 5.

<sup>52</sup> Johnston, *Future Security Environment 2025*, part V, para 79.

provide safe havens and operating bases for these dangerous groups.<sup>53</sup> “Defence against the threats posed by such groups will be increasingly complex and burdensome, especially in open societies such as the United States and Canada.”<sup>54</sup> This is exemplified by both the global war on terror and operations in Iraq and Afghanistan, and the complexities of efforts to secure North America.

## IMPLICATIONS

It is clear from the current trends that the world will remain a dangerous place and that conflict will continue to be a threat to international security. State on state conflict of a conventional and high tempo nature may occur but chances are that this type of scenario will not manifest itself. What are likely to be more prevalent will be clashes of an asymmetric nature, often initiated by non-state actors.<sup>55</sup> They will favour indirect engagements, thereby avoiding direct confrontations against regular forces that they are unlikely to win. They will focus their attacks on the vulnerabilities of the target states in an attempt to undermine those states’ power, authority, in some cases their ideology and their will to fight. What is most disturbing is the possibility that these asymmetric attacks may include the use of WMD such as crude nuclear, biological and chemical weapons.<sup>56</sup> To defend against such threats will be complicated and require robust security apparatus’.

The military implications of being able to effectively meet the challenges posed by the global security environment are complex to say the least. Domestically, this

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<sup>53</sup> Canada. Department of National Defence, *Future Force: Concepts for Future Army Capabilities*, 11.

<sup>54</sup> *Ibid.*, 12.

<sup>55</sup> *Ibid.*, 17.

<sup>56</sup> Gizewski, *The Future Security Environment: Threats, Risks and Responses*, 11 March 2010, 7.

demands constant vigilance in terms of surveillance and the monitoring of national borders and airspace to prevent and protect against attack. In addition, a more effective and increased capacity to support civil power in case of national emergencies is required. Abroad there will be the requirement to be able to conduct effective counterinsurgency operations, and stabilization and reconstruction missions.<sup>57</sup> This implies the need for robust capabilities:

...in the form of lighter, lethal, more precise, mobile and networked forces, Special Forces, enhanced capabilities to operate in complex terrain and the possession of tactical and strategic lift for rapid deployment into and within theatre.<sup>58</sup>

All of this will require a delicate balance of force structures, equipment and training requirements that will be difficult for most governments and militaries to effectively accomplish with limited resources.

It is undoubtedly difficult if not impossible to predict the future accurately. Despite this fact it is imperative that strategic planners look ahead in an attempt to anticipate future threats and challenges that may arise.<sup>59</sup> For Canada, its large territory and relatively small population poses a unique and challenging context where military force planning becomes critical.<sup>60</sup> In the coming chapter we will see how SOF including its aviation component, may provide an attractive solution to a significant part of this security challenge.

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<sup>57</sup> *Ibid.*, 7.

<sup>58</sup> *Ibid.* 7.

<sup>59</sup> Johnston, *Future Security Environment 2025*, part V, para 82.

<sup>60</sup> Canada. Department of National Defence, *Future Force: Concepts for Future Army Capabilities*, 1.

## CHAPTER 2 – SOF: THEORY, ROLES AND RELEVANCE

How are we to counter the highly sophisticated theory that supposes it possible for a particularly ingenious method of inflicting minor damage on the enemy's forces to lead to major indirect destruction; or that claim to produce by means of limited but skilfully applied blows, such paralysis of the enemy's force and control of his will-power as to constitute a significant shortcut to victory?

Carl von Clausewitz<sup>61</sup>

Clausewitz posed this question seemingly rhetorically in his exploration on the strategy of war. He ultimately concluded that the only appropriate strategy was the direct annihilation of the enemy's forces.<sup>62</sup> Even though he does not investigate this idea further in his writings; it does acknowledge that there could be alternative means, theory or strategy to pursue in the art of war. Clausewitz had unwittingly outlined the context within which modern special operations and SOF would ultimately be conceived and designed. Accordingly, in this chapter the existing theory and roles of SOF will be examined along with their continued relevancy to operations in light of the current and future security environments described in the preceding chapter.

### THE THEORY

To date there is a notable absence of a solid foundation of well developed and widely accepted theory of special operations. This is especially evident when compared to more traditional elements such as air, land and sea. Not surprisingly therefore, there is a general lack of theoretical understanding of special operations.<sup>63</sup> However, it is vital to

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<sup>61</sup> Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 228.

<sup>62</sup> *Ibid.*, 228.

<sup>63</sup> James D. Kiras, *Special Operations and Strategy: From World War II to the War on Terrorism* (New York: Routledge, 2006), 115.

understand the existing thoughts behind them in order to grasp how the component parts such as SOA fit in the larger picture. To provide a basic comprehension, special operations and SOF will be defined. In addition, current theoretical ideas on SOF will be briefly explored.

Over the years there have been many opinions on, and subsequent definitions of special operations. Part of the problem in defining special operations; has been the question of what makes them unique among other forms of warfare? In the early Cold War for example the popular view was that special operations were those carried out within and behind enemy lines.<sup>64</sup> This rather simplistic idea of special operations was expanded and developed over the years. For example, in his report to congress in 1987, John M. Collins, defined special operations as:

... embrac[ing] a wide range of unorthodox, comparatively low-cost, potentially high-payoff, often covert or clandestine methods that national, subnational, and theat[re] leaders may employ independently in "peacetime" or to support nuclear, biological, chemical, and/or conventional warfare of low-, mid-, and high-intensity.<sup>65</sup>

This definition, though admittedly very broad in nature, does encapsulate the main theme of more recent thoughts on special operations, where the basic concept is that through the use of limited resources and unconventional means, strategic effect is achieved. For example, as former US Navy SEAL commander, William H. McRaven suggests: "...what defines a special operation is the strategic environment in which it is conducted; that is, one in which a nation's freedom of action is extremely limited and economy of

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<sup>64</sup> Bernd Horn, "Special Operations Forces: Uncloaking an Enigma," in *Casting Light on the Shadows: Canadian Perspectives on Special Operations*, ed. Horn, Bernd and Tony Balasevicius (Kingston: The Dundurn Group, 2007), 19-36., 21.

<sup>65</sup> John M. Collins, *Green Berets Seals and Spetsnaz: U.S. and Soviet Special Military Operations* (Toronto: Pergamon Press, 1987), 2.

force essential.”<sup>66</sup> Or in other words, it is one where conventional forces would be at a strategic or operational disadvantage. The theory being that effectively executed special operations are those that provide decision makers greater flexibility in implementing national policy.<sup>67</sup> US joint doctrine further differentiates special operations from:

...conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets.<sup>68</sup>

It is this notion of special operations as suggested by McRaven, and the difference from conventional operations as defined in US doctrine that will be used throughout the rest of the paper.

If the previously stated definition of special operations is accepted, how then are the forces who conduct them defined? Similar to special operations, there are many variations on the definition of SOF. For example, NATO’s definition is quite broad as it states that SOF provide:

... a flexible, versatile and unique capability, whether employed alone or complementing other forces or agencies, to attain military-strategic or operational objectives.<sup>69</sup>

The Canadian definition is more specific as it states:

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<sup>66</sup> William H. McRaven, "Special Operations: The Perfect Grand Strategy?" in *Force of Choice: Perspectives on Special Operations*, ed. Bernd Horn, J. Paul de B. Taillon, and David Last (Kingston: McGill-Queens University Press, 2004), 61-78., 64

<sup>67</sup> *Ibid.*, 64. This definition is also in line with the definition of special operations in the US Joint Publication 3-05: Doctrine for Joint Special Operations, where Special Operations are defined as: "...operations conducted in hostile, denied, or politically sensitive environments to achieve military, diplomatic, informational, and/or economic objectives employing military capabilities for which there is no broad conventional force requirement."

<sup>68</sup> United States. Department of Defense, *JP 3-05 Doctrine for Joint Special Operations* (Washington: U.S. Government Printing Office, 2003),1-1

<sup>69</sup> NATO, *AJP-1(A) Combined SOF Concept 3200*, March 1997).

Special Operations Forces are organizations containing specially selected personnel that are organized, equipped and trained to conduct high-risk, high-value special operations to achieve military, political, economic or informational objectives by using special and unique operational methodologies in hostile, denied or politically sensitive areas to achieve desired tactical, operational and/or strategic effects in times of peace, conflict or war.<sup>70</sup>

This definition incorporates the key characteristics of the previously accepted definition of special operations and additionally it also reflects current thought on the characteristics of SOF.<sup>71</sup> Distilled to its simplest form, special operations and the forces who conduct them, provide military options when the risk is high and the lower profile of smaller forces is required for stealth and/or political reasons in order to achieve operational or strategic effects.

Despite the many varied definitions of special operations and SOF over the years, there are some tenets that have emerged. These were originally designated by John Collins in his report to the US Senate in 1987 on US and Soviet Special Operations, and they have since become internationally recognized as SOF truths.<sup>72</sup> They are:

- Humans are more important than hardware.
- Quality is better than quantity.
- SOF cannot be massed produced.
- Competent SOF cannot be created after emergencies occur.<sup>73</sup>

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<sup>70</sup> Canada. Department of National Defence, *Canadian Special Forces Command: An Overview*, 7

<sup>71</sup> Similar definitions appear in contemporary writing on SOF as seen in: Susan Marquis, *Unconventional Warfare* (1997), Alastair Finlan, *Special Forces, Strategy and the War on Terror* (2008), and United States. Department of Defense, *JP 3-05 Doctrine for Joint Special Operations* (2003).

<sup>72</sup> *Ibid.*, 7.

<sup>73</sup> Collins, *Green Berets Seals and Spetsnaz: U.S. and Soviet Special Military Operations*, xiii. The first four tenets have generally been recognized internationally. Collins had penned a fifth that tends to be omitted. It stated: “Most special operations require non-SOF assistance.”

These widely acknowledged tenets, along with the previously described concepts of special operations and SOF will be used to frame analysis in the coming chapters in order to put SOA into perspective.

From a more purely theoretical viewpoint, there is a recurring theme that surfaces in the examination of SOF. It is the fact that SOF are generally expected to succeed against numerically superior forces. As Major General Hindmarsh, the former commander of the Australian Special Operations Command suggested:

Economy of force is what I would refer to as the ‘hydraulics’ of unconventional operations. That is, for relatively minor tactical effort or expenditure, the operational, strategic or indeed political effect or dividends can be substantial.<sup>74</sup>

How are SOF then able to achieve this? If one were to follow the conventional wisdom of Clausewitz where he states that superiority in numbers should be brought to bare at the decisive point to ensure victory, it would seem that SOF would be at a disadvantage in most instances.<sup>75</sup> In an attempt to explain this phenomenon, McRaven, suggests the theory of relative superiority.<sup>76</sup> He proposes that relative superiority exists when a smaller attacking force is able to create the conditions that give them a decisive advantage over a larger and normally defending force. He further argues that through minimizing what are commonly referred to as the frictions of war, special operations forces are able to achieve relative superiority over an enemy. The key to managing the frictions of war are what McRaven calls the six principles of special operations:

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<sup>74</sup> Mike Major General Hindmarsh, "The Philosophy of Special Operations," *Australian Army Journal* III, no. 3 (Summer 2006), 11-24, 20.

<sup>75</sup> von Clausewitz, , 195.

<sup>76</sup> For further reading and information on the theory of ‘Relative Superiority’, see William H. McRaven, *Spec Ops* (1995).

simplicity, security, repetition, surprise, speed, and purpose.<sup>77</sup> These principles work, “because they seek to reduce warfare to its simplest level and thereby limit the negative effects of chance, uncertainty, and the enemy’s will.”<sup>78</sup> In the conduct of special operations, achieving the condition of relative superiority does not guarantee success, however it is suggested that it is necessary for success.<sup>79</sup> This theory of relative superiority goes along way in describing how SOF are able to defeat numerically superior forces. However, it is limited to a tactical and kinetic focus. How then do special operations forces fit within the realm of strategic theory?

The existing strategic thoughts on SOF while limited in scope and quantity are fairly consistent in their approach. The focus is generally on the idea found widely in contemporary strategic doctrine of targeting the centre(s) of gravity of the enemy.<sup>80</sup> The centre of gravity as defined by Canadian doctrine is “... that characteristic, capability, or locality from which a military force, nation or alliance derives its freedom of action, physical strength, or will to fight.”<sup>81</sup> This concept is not necessarily a new one as Sun Tzu expounded that one who was skilled in the art of war would be able to defeat the

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<sup>77</sup> McRaven, *Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice*, 1,4,9.

<sup>78</sup> *Ibid.*, 9.

<sup>79</sup> *Ibid.*, 1.

<sup>80</sup> This concept is wide spread especially within western doctrine. For further elaboration see: The U.S. Army, Headquarters Department of the Army, *Field Manual 3-0 Operations*, (2008), *British Defence Doctrine* (2001), JWP 0-01, 2<sup>nd</sup> Edn., and Canadian Forces Joint Publication 5.0 (CFJP 5.0), *The Canadian Forces Operational Planning Process (OPP)*, change 2, (2008).

<sup>81</sup> Canada. Department of National Defence, *Canadian Forces Joint Publication 5.0 (CFJP 5.0): The Canadian Forces Operational Planning Process* (Ottawa: Department of National Defence, April 2008), GL-1.

enemy without engaging in battle and lengthy operations.<sup>82</sup> This suggests that he felt that if an enemy's critical vulnerabilities were targeted in an effective manner, one could possibly achieve victory through innovation and economy of effort.

An important development in relatively recent history has been the ability to target centres of gravity or key nodes with a much higher probability of success. As Alastair Finlan argues, modern technology such as, advanced battle field helicopters for reliable tactical mobility, along with state of the art navigation and communications systems, allows for unprecedented accuracy and coordination of Special Forces in the conduct of these types of focused missions.<sup>83</sup> In essence he suggests that SOF, enabled by modern technology provide strategic military planners with the ability to target enemy centres of gravity, while reducing the requirement for force on force attrition style warfare. Of course one should not be left with the idea that SOF are therefore the magic military panacea to ensure defeat of an enemy. Strategically, special operations should be designed as part of a wider campaign with the aim of undermining an adversary's resources and moral resolve, through a series of comparatively smaller activities.<sup>84</sup> As James Kiras suggests:

Special operations, combine the effects of striking or threatening what an adversary fears or values the most, or using force in unexpected ways, by shaping an adversary's behaviour and perceptions in ways that make one's style of warfare more effective.<sup>85</sup>

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<sup>82</sup> Sun Tzu, *The Art of War*, trans. Griffith Samuel B. (New York: Oxford University Press, 1963), 79.

<sup>83</sup> Alastair Finlan, *Special Forces, Strategy and the War on Terror: Warfare by Other Means* (New York: Routledge, 2008), 19.

<sup>84</sup> Kiras, *Special Operations and Strategy: From World War II to the War on Terrorism*, 115.

<sup>85</sup> *Ibid.*, 115.

Therefore, from a theoretical perspective SOF is viewed as a strategic tool to be employed in attacking an adversary's weaknesses in order to influence and compliment the overall campaign.

## **ROLES**

Even though there are differing definitions of special operations and SOF and limited supporting theory, the roles assigned to special operations forces are quite consistent, especially within western militaries. This consistency is not surprising from the point of view that many nations place compatibility and interoperability with US forces as a priority. For example the core tasks for Canadian Special Operations Forces Command are listed as; Counter-Terrorism (CT) Operations, and High Value Tasks (HVT). CT operations are described as both offensive and defensive actions conducted domestically and internationally to prevent and respond to terrorism. HVT refer to other tasks spanning the spectrum of conflict that may be assigned by the Government of Canada, which include but are not limited to: Counter-proliferation (CP), Special Reconnaissance (SR), Direct Action (DA), and Defence, Diplomacy, and Military assistance (DDMA).<sup>86</sup> These tasks essentially mirror those listed for US SOF in their doctrine for Joint Special Operations, with the exception that the US also includes Civil Affairs, Psychological, and Information operations.<sup>87</sup> These roles are important to keep in mind as the capabilities of SOF should be centred on the ability to effectively conduct the types of tasks allocated or assigned.

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<sup>86</sup> Canada. Department of National Defence, *Canadian Special Forces Command: An Overview*, 9. For further elaboration on each of the core tasks see reference.

<sup>87</sup> United States. Department of Defense, *JP 3-05 Doctrine for Joint Special Operations* Joint pub 3-05, II-5.

## RELEVANCE

The true value of SOF and their roles began to materialize in the post Cold War period, as the global security environment shifted where failed and failing states became the most prominent threat to international stability. Within this environment, their scalability, small organizational footprint combined with their unique capabilities afforded governments the flexibility to take military action where it was normally too politically sensitive to deploy large scale conventional forces.<sup>88</sup> Following the unimaginable events of 9/11 there has been a further increased reliance on SOF in order to achieve military effect. Again the international security environment had shifted dramatically to include non-state actors in the form of terrorist groups with global membership and reach. In this environment SOF have become a “Force of Choice”.<sup>89</sup> Special operations in Afghanistan and Iraq post 9/11 have demonstrated this, where SOF have shown their value in countering asymmetric threats to the security of the international community.

The response of the United States to the attacks of 9/11 was swift and sure. By the 19<sup>th</sup> of October 2001, US SOF were conducting raids in southern Afghanistan and had deployed to the north to train, equip and advise the Northern Alliance and other indigenous forces. The Taliban now faced the power of the US Air Force (USAF) being directed by SOF combat controllers on the ground. On the 7<sup>th</sup> of December, the key Taliban stronghold of Kandahar was taken. At the time there were still less than 300 US

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<sup>88</sup> Bernd Horn, "“Avenging Angels”: The Ascent of SOF as the Force of Choice in the New Security Environment," in *Casting Light on the Shadows: Canadian Perspectives on Special Operations Forces*, ed. Colonel Bernd Horn and Maj Tony Balasevicius (Kingston: Canadian Defence Academy Press, 2007), 158.

<sup>89</sup> *Ibid.*, 158.

SOF personnel on the ground in Afghanistan, making their contribution to the successful outcome of operations all out of proportion to their relatively few numbers.<sup>90</sup> The overall results were dramatic.<sup>91</sup> Afghan indigenous forces now supported by US SOF and the USAF were able to topple the Taliban regime in a matter of weeks, a feat they had been attempting to achieve for the previous six years. US SOF supported by the USAF succeeded in providing relevant and effective economy of force for the US government and military in the initial Afghan campaign. As a result this period of the war in Afghanistan has often been referred to as a special operations war.<sup>92</sup> This effort however was just a foreshadowing of what would be expected of SOF in 2003 during the war in Iraq.

The war in Iraq in contrast to the early stages of Afghanistan was largely a conventional campaign. However, due to the lessons learned from Afghanistan, SOF was accorded a much greater role than they had been ten years earlier. This role, much like in Afghanistan was a transformational one.<sup>93</sup> During Operation Iraqi Freedom (OIF), US and coalition SOF were given the responsibility of securing the vast western Iraqi desert, in order to protect the left flank of conventional coalition forces advancing from the south. In addition they were to deny missile launch sites to the Iraqis and search for

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<sup>90</sup> Jamie W. Hammond, "Special Operations Forces: Relevant Ready and Precise," in *Casting Light on the Shadows: Canadian Perspectives on Special Operations Forces*, ed. Colonel Bernd Horn and Maj Tony Balasevicius (Toronto: The Dundurn Group, 2007), 209-236, 217.

<sup>91</sup> In fact the results of the initial Afghan operations to oust the Taliban were so successful that the "Afghan Model" is now a subject of study, in order to determine its future applicability to military operations. For more on the Afghan Model, see: Stephen D. Biddle, *Afghanistan and the Future of Warfare: Implications for Army and Defense Policy* (Carlisle Barracks, PA: U.S. Army War College, Strategic Studies Institute, 2002). and Stephen D. Biddle, "Allies, Airpower, and Modern Warfare: The Afghan Model in Afghanistan and Iraq," *International Security* 30, no. 3 (Winter 2005/06).

<sup>92</sup> Hammond, *Special Operations Forces: Relevant Ready and Precise*, 209-236., 218.

<sup>93</sup> *Ibid.*, 219.

weapons of mass destruction (WMD). In northern Iraq, SOF linked up with Kurdish peshmerga militia and were successful in fixing Iraqi conventional divisions in a very effective economy of force action. Their actions in the north were so successful that they were able to secure the northern cities of Kirkuk and Mosul along with the northern oil fields.<sup>94</sup> SOF operations to the south were no less important as they seized offshore oil platforms and conducted personnel recovery operations such as the rescue of Private Jessica Lynch.<sup>95</sup> Much like in Afghanistan, SOF were able to achieve effective results far in excess of what their limited numbers would have suggested from a conventional viewpoint.

In the previous examples, SOF played key and critical roles in the initial stages of the campaigns. However their contributions did not end there as both of these operations are still ongoing today, and SOF are still making vital contributions. Their roles have transitioned somewhat and they are now providing critical capabilities in combating insurgents and hunting down terrorists.<sup>96</sup> Afghanistan and Iraq have demonstrated the value of SOF to recent and current military operations through their ability to provide governments and their military significant economy of force options in the contemporary operating environment.

Currently the future would seem to hold much of the same for SOF. As noted in Chapter 1, the expectation is that the global security environment will largely be impacted by asymmetric threats. These will likely be generated for the most part by non-

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<sup>94</sup> Stephen D. Biddle, "Special Forces and the Future of Warfare," *Military Technology* 30, no. 3 (2006), 12-19., 12.

<sup>95</sup> Hammond, *Special Operations Forces: Relevant Ready and Precise*, 209-236., 220.

<sup>96</sup> Biddle, *Special Forces and the Future of Warfare*, 12-19., 12.

state actors, or insurgencies within failed or failing states that will have international implications due to the ever increasing effects of globalization. As SOF operations in both Afghanistan and Iraq have demonstrated:

Unconventional warfare/SOF activities have been elevated from being a satellite activity within the scope of conventional organization missions, to a primary means of warfare for accomplishing national security objectives.<sup>97</sup>

In other words, SOF will continue to provide nations with vital military capabilities into the future.

The post 9/11 operating environment has seen a marked strategic shift in the employment of SOF by the US and its allies. The dramatic results that special operations have achieved with significant economies of force in both Afghanistan and Iraq have certainly demonstrated their worth and relevance to current and future military operations whether it be in support, in concert with, or supported by conventional forces. They have secured their position alongside traditional army, air and naval forces.

## **SUMMARY**

In comparison to conventional land, sea and air forces, there exists an absence of doctrine and theory for SOF. McRaven's tactical theory of relative superiority explains how SOF are able to be successful against normally numerically superior foes. Strategically, there is also very little SOF theory other than they are considered to be an effective capability to use in targeting what contemporary conventional doctrine defines as an enemy's centre(s) of gravity or critical vulnerabilities. This lack of substantial strategic theory has led Finlan to suggest that the true potential of SOF has not yet been

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<sup>97</sup> Marvin Leibstone, "Special Operations Forces & 21st Century Warfare," *Military Technology* (Special Issue 2009), 29-33, 29.

fully explored or realized.<sup>98</sup> There certainly have been significant shifts in the ideas and actual employment of SOF in recent campaigns in Afghanistan and Iraq, but this is likely just the beginning of special operations coming into their own. Canada has recognized the implications and lessons for SOF from the post 9/11 military campaigns as is evident by the creation of the Canadian Special Operations Command along with its component parts, in 2006. What remains now is for Canada to consider SOF's relative strategic and operational priority within the Canadian Forces force structure.<sup>99</sup> This includes too, the place of SOA. In order to provide a benchmark for this, the next chapter will explore the strategic importance of a formed ready and skilled SOA capability.

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<sup>98</sup> Finlan, *Special Forces, Strategy and the War on Terror: Warfare by Other Means*, 13.

<sup>99</sup> Hammond, *Special Operations Forces: Relevant Ready and Precise*, 209-236., 221.

### CHAPTER 3 – SPECIAL OPERATIONS AVIATION STRATEGIC RELEVANCE: A CASE STUDY.

“Competent SOF cannot be created [rapidly] after emergencies occur.”  
John Collins<sup>100</sup>

The real strategic value and relevance of SOF, both in theory and practice, has begun to emerge in the past nine years. Recent operations as a result of the shifting international security environment have demonstrated this. It follows then that integral capabilities such as SOA are just as critical with respect to the enabling of SOF to achieve strategic effect. The roles of aviation; aerial firepower, reconnaissance, and mobility<sup>101</sup> are well understood, valued and indeed often required for special operations to succeed in the contemporary operating environment. SOA when effectively integrated into special operations provides increased reach, mobility, and fire support for SOF, who are generally small and light organizations. In this chapter two historical case studies will be used to demonstrate the strategic requirement for robust SOA that is able to support special operations whenever and wherever required. The first will be an example of what occurs when Collins’ above fourth tenet is not heeded, and will examine the hard lessons learned by the US from the ill fated hostage rescue mission in the Iranian desert; Operation Eagle Claw. The second will focus on the successful British hostage rescue mission conducted in Sierra Leone; Operation Barras. From these examinations, the

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<sup>100</sup> John M. Collins, "U.S. Special Operations-Personal Opinions." Lecture 1st Special Warfare Training Group, Camp Mackall, NC, 11 December 2008." , <http://smallwarsjournal.com/mag/docs-temp/148-collins.pdf>. In this presentation John Collins indicated that the SOF truths he penned in 1987 were still very relevant, but if he could start from scratch he would add the word “rapidly” to the fourth bullet.

<sup>101</sup> Canada. Department of National Defence, *B-GA-441-001/FP-001, Tactical Level Aviation Doctrine* (Ottawa: DND Canada, 2000), 1-1.

strategic importance of formed, ready, and effective special operations aviation will become evident.

### **OPERATION EAGLE CLAW**

In November 1979, the American embassy in Tehran was seized along with 63 US hostages by armed Iranian students who were followers of the Shiite Muslim leader the Ayatollah Khomeini. The Ayatollah and his followers held deep resentment for the United States as a result of its long time association and support to the ousted Shah. The students had seized the US embassy in an effort to force the US to extradite the exiled Shah back to Iran, as he had recently been granted permission by President Carter to enter the US for cancer treatment. Many questions immediately arose within the US government as to whether the hostages could be rescued or if the US even had the means to do it? Nevertheless, National Security Advisor, Zbigniew Brzezinski ordered the Pentagon to prepare contingency plans for a rescue mission and retaliatory strikes if the hostages were harmed.<sup>102</sup> Consequently a joint task force was appointed and began to plan and prepare for a rescue mission.

The problem facing the task force was a daunting one to say the least. How was the military going to rescue and extract 63 US hostages from the US embassy in the middle of a major urban centre, hundreds of miles deep inside “hostile” territory? Fortunately the US military Joint Chiefs of Staff had authorized the formation of an elite counter terrorist unit two years previously, commonly known as Delta Force. This unit

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<sup>102</sup> Otto Kreisher, "Desert One Disaster," *MHQ: The Quarterly Journal of Military History* 13, no. 1 (Autumn 2000), 42-51, 44.

had just been declared operational around the same time that the embassy was seized.<sup>103</sup> Delta force would subsequently be tasked with the assault on the embassy. However, the rest of the task force, which would be responsible for the ingress and egress of the Delta operators, needed to be assembled and would eventually be comprised of Army, Air Force, Navy, and Marine assets. All of whom had to be brought together and trained to conduct the rescue. Joint training therefore commenced almost immediately and carried through to March 1980.

Despite the hopes of the Carter administration for a diplomatic solution to the crisis, it became apparent after six months that negotiations had failed. Consequently, the president ordered the execution of the rescue plan now called Operation Eagle Claw on April 24, 1980.<sup>104</sup> A detailed examination of the operational plan and subsequent events that took place is beyond the scope of this paper and has been described and analyzed in many subsequent books and articles.<sup>105</sup> What follows therefore is a simplified account of the overall plan and the events that occurred in the early morning hours of April 25.

The operation that had been developed was a complex joint effort. It called for eight Navy RH-53D helicopters to launch from the aircraft carrier Nimitz in the Arabian Sea and rendezvous with the assault force and C-130 Hercules tanker aircraft that had landed at an improvised landing strip in the Iranian desert (code named Desert One). Here the helicopters would refuel from the C-130s, load the assault force and proceed to

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<sup>103</sup> *Ibid.*, 44.

<sup>104</sup> Fred J. Pushies, *Night Stalkers: 160th Special Operations Aviation Regiment (Airborne)* (St. Paul: Zenith Press, 2005), 10.

<sup>105</sup> For a more detailed account of Operational Eagle Claw and the planning and training leading up to it, read: Kyle, Colonel James H., USAF (Ret.), *The Guts to Try* (New York: Orion Books, 1990). Col Kyle was the Air Force commander of the mission and the on-scene commander at Desert One.

another forward site inside Iran approximately 50 miles Southeast of Tehran. The following night, the Delta operators would make their way to the embassy to secure the hostages. The helicopters would then extract the assault force and hostages from the embassy under the cover of AC-130 gunships and proceed to an abandoned Iranian airstrip which was to be seized and secured by a company of Army Rangers. The helicopters would then be destroyed and the rescue force and hostages would be extracted by two C-141 Starlifters to US bases in Europe.<sup>106</sup>

On the night of April 24, the eight RH-53D helicopters lifted off the USS Nimitz as planned. However, just a few hours into the mission two of the helicopters were forced to abort due to mechanical failures. To make matters worse, the remaining six helicopters were delayed in arriving at Desert One as a result of an unexpected dust storm, known as a haboob. After arriving at the improvised refuelling site, another of the helicopters suffered a hydraulic malfunction and was deemed unable to continue with the mission. This meant that the operation was now down to five helicopters, which was one less than the minimum six that had been determined essential to complete the task. Consequently the decision to abort the rescue attempt was made by the on-scene commander. It was then that tragedy struck. One of the helicopters was engulfed in a dust cloud while attempting to reposition and taxied into the C-130 it had been refuelling from. The subsequent explosion and fire ball killed eight personnel and injured many others. The site was quickly evacuated thereafter, leaving behind five undamaged helicopters, the burning wreckage and the unrecovered bodies of the eight dead. The ambitious Operation Eagle Claw had ended in failure in the middle of the Iraqi desert.

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<sup>106</sup> Kreisher, *Desert One Disaster*, 42-51, 48.

The tragic events at Desert One had tarnished the honour of the United States and the credibility of U.S. special Operations.<sup>107</sup> This prompted the establishment of a government review committee known as the Holloway Commission to examine the circumstances of the ill fated mission and more importantly problems within U.S. Special Operations.<sup>108</sup>

While not necessarily directly attributable to the failure of the mission, there are some notable and in hindsight obvious weaknesses that are revealed in the examination of the helicopters and the selection of crews. The Navy RH-53D helicopters had been chosen for two main reasons. The first was that they possessed the range and payload requirements to conduct the mission. The second was for operational security (OPSEC), which was considered an extremely high priority for this operation. Since the helicopters would be departing from an aircraft carrier, it was felt that the presence of the eight Navy helicopters would not attract any unwanted attention. Additionally, they could easily be stored below decks due to their ability to fold the rotor blades and tail sections, unlike Air Force or Army airframes.<sup>109</sup> Consequently, Navy crews familiar with these particular aircraft were initially selected to fly the mission.

These crews however were not suitably qualified for the tasks assigned and expected of them. The Navy aircrew of the RH-53Ds were trained for daytime mine sweeping missions of relatively short duration overwater. As a result, they had no experience in night low level overland tactics, nor did they have any crews with special

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<sup>107</sup> Pushies, *Night Stalkers: 160th Special Operations Aviation Regiment (Airborne)*, 12.

<sup>108</sup> The results of the review committee's findings were subsequently published in the now famous "Halloway Report". This report made several recommendations to improve U.S. Special Operations capabilities.

<sup>109</sup> Kyle, Colonel James H., USAF (Ret.), *The Guts to Try* Kyle, 47.

operations experience.<sup>110</sup> This inexperience was revealed very early on, when the Navy pilots had great difficulty in adapting to the demanding low level night environment using night vision goggles (NVG), with which they had no previous training. Not only did this situation, jeopardize the safety of the mission; it was undermining the confidence of other members of the team. As one Delta operator was heard to remark during an early desert training mission after a harrowing flight on one of the helicopters: "I'll be damned if I'm riding back on this thing-I'll walk home first!"<sup>111</sup> The planners quickly realized that the Navy pilots were not progressing fast enough and decided to replace the majority of them with Marine CH-53 pilots who were experienced in low level overland tactics. Despite the Marine pilots' also lacking experience in the night environment, the training for the rescue mission began to progress more rapidly with the new crews.<sup>112</sup> Yet in hindsight this decision was also was less than ideal.

In examining the helicopter crewing decisions, the Holloway Report revealed that during the period leading up to the mission there were 96 H-53 qualified USAF pilots, who were current in long range mission profiles including air to air refuelling. In addition, there were 86 former H-53 qualified pilots, most of whom had recent special operations or rescue experience which was more ideally suited for the mission demands of Operation Eagle Claw.<sup>113</sup> This raises the question as to why these pilots were not enlisted to conduct the mission. Part of the answer lies in the desire of the planners to maintain operational security, since recalling pilots from many different assignments

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<sup>110</sup> *Ibid.*, 81.

<sup>111</sup> *Ibid.*, 94.

<sup>112</sup> United States, "*the Holloway Report*" (Washington: Department of Defense, 1980), 35.

<sup>113</sup> *Ibid.*, 35.

would have raised unwanted questions. There was a key flaw in the planners' assumptions though. They believed that the pilots who were qualified on the aircraft variant chosen for the mission would be able to adapt quickly and effectively to a new and highly complex mission set. However, previous experience from developing Air Force special operations capabilities for Vietnam had clearly demonstrated that it was far more difficult for pilots to learn new complex mission skills than to transition to another airframe of similar design and performance characteristics.<sup>114</sup> This ultimately underscored the import of having a formed helicopter unit trained and proficient in special operations aviation skill sets. This point was highlighted by the final evaluation on the helicopter crew compositions by the Holloway commission.<sup>115</sup>

The purpose of examining this case study was not to rehash arguments as to whom or what may be to blame for Operation Eagle Claw's ultimate failure. The idea that a Special Forces operation could be mounted to rescue the hostages was legitimate. For example, the Holloway Report did conclude that:

The concept of a small clandestine operation was valid and consistent with national policy and objectives. It offered the best chance of getting the hostages out alive and the least danger of starting a war with Iran.<sup>116</sup>

In other words, the United States could have achieved its strategic goals through a focussed special operation while achieving suitable economy of force. At the time of the crisis, the U.S. military did have at its disposal the newly formed and highly capable

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<sup>114</sup> *Ibid.*, 35.

<sup>115</sup> *Ibid.*, 36.

<sup>116</sup> *Ibid.*, v.

counter terrorist unit Delta Force. However, they had no means to achieve a covert insertion to the American embassy. As Charles Cogan noted:

The United States had a glaring lack of a centralized command that could conduct a turn-key operation, having under its control all the necessary support elements- air transport, intelligence, logistics, and combat air support.<sup>117</sup>

This highlights the strategic military impotence the US experienced in being able to deal rapidly and appropriately with the crisis. This impotence was in large part due the lack of a developed SOA capability. Additionally, the pitfalls associated with disregarding the fourth SOF tenet become evident from the difficulties encountered in attempting to develop a suitable aviation force package after the crisis had occurred.

### **OPERATION BARRAS**<sup>118</sup>

On the 25<sup>th</sup> of August 2000, while on patrol in Sierra Leone near Freetown, 11 British soldiers of the Royal Irish Regiment and their liaison officer from the Sierra Leone Army were captured and detained by members of the rebel group the West Side Boys. UK forces had been in Sierra Leone since early May, when rebel forces had seriously threatened the city of Freetown and the government. They had initially been deployed to secure the evacuation of British citizens, but had since been assisting in stabilizing the situation after UN and government forces had succeeded in beating back the rebel factions. The West Side Boys were a smaller, but troublesome faction. They were more of a criminal gang than an organized rebel force as they were commonly

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<sup>117</sup> Charles G. Cogan, "Desert One and its Disorders," *The Journal of Military History* 67, no. 1 (January 2003), <http://www.jstor.org/stable/>, 204.

<sup>118</sup> For a more detailed account of Operation Barras read: William Fowler, *Operation Barras: The SAS Rescue Mission, Sierra Leone 2000* (London: Weidenfield & Nicolson, 2004).

referred to as a 'self-provisioning' group.<sup>119</sup> They had leading up to the detainment of the British soldiers been conducting roadblocks and essentially robbing those who they stopped. The British patrol had been given information at a meeting with UN forces that the West Side Boys had begun to disarm, and had gone to Magbeni to investigate this further. The West Side Boys' leader Foday Kallay upset that the British soldiers had not asked permission to enter 'his' territory, ordered his troops to disarm them and detain them. After being taken hostage, the captives were immediately moved across Rokel Creek to the rebel headquarters at Gberi Bana.

The UK government's reaction was swift as the SAS was alerted and began planning preparations within 12 hours of the hostages being detained.<sup>120</sup> Fortunately for the planners, intelligence on the situation had subsequently been forthcoming rather quickly. Within two days of the detention, the Royal Irish Commanding Officer (CO) was meeting with Kallay to negotiate the possible release of the hostages. On the 29<sup>th</sup>, Kallay allowed one of the hostages to accompany him to one of the negotiation meetings as a show of good faith. The soldier managed to pass a detailed map of where they were being held along with rebel dispositions and weapons emplacements hidden inside of a ball point pen to his CO. In addition, two days later five of the captured soldiers were released in exchange for a satellite phone and medical supplies. Unbeknownst to the rebels, the British were now able to track precisely where they were through the satellite phone. As well, the rescue planners had now garnered a significant amount of valuable

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<sup>119</sup> *Ibid.*, 109.

<sup>120</sup> Christine Dr Coker, "Planning in Hostage Rescue Missions, US Operation Eagle Claw and UK Operation Barras," *Military Technology* 30, no. 9 (2006), 66-69, 67.

information on the West Side Boys' numbers and capabilities in Gberi Bana and south across the river in Magbeni.

It had been determined early on in planning, that the SAS team would not be sufficient to conduct the assault alone. They would be the assault force on Gberi Bana to rescue and secure the hostages. However, there was a significant concentration of rebels and heavy weaponry 1000 yards to the south across the creek at Magbeni and within effective engagement range of where the hostages were being held. Therefore a company group from the 1<sup>st</sup> Battalion Parachute Regiment was brought in and assigned the task of finding and fixing the rebels in Magbeni in order to cover the SAS rescue assault at Gberi Bana.

Initially three options for the assault had been developed; an overland assault, an air assault and a favoured river approach. By the 5<sup>th</sup> of September, the SAS had two observation posts established outside of both Gberi Bana and Magbeni. These two teams had used the river to approach the target areas and had subsequently determined that this would not be feasible for the main assault, as the river was too shallow. In addition the overland option would also have to be abandoned due to the density of the jungle. Consequently the only remaining viable option was an air assault.

The rescue plan was now taking shape. Three Chinook helicopters flown by Royal Air Force crews from 7 Sqn, who were dedicated to special forces operations, would provide the airlift.<sup>121</sup> Two Army Air Corps Lynx attack helicopters would support the assault and concentrate initially on neutralizing the heavy weapons emplacements in order to protect the Chinooks. Two of the Chinooks would insert the SAS hostage rescue

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<sup>121</sup> *Ibid.*, 67.

team into Gberi Bana where they would secure the hostages and then move them approximately 200m to a soccer field to be extracted by one of the insert helicopters. The Para company would be simultaneously inserted by the third Chinook into Magbeni to fix the rebel fighters and prevent them from interfering with the rescue operation across the river. In order to maintain the advantage of surprise and to provide the best chance of securing the hostages safely, the SAS teams would have to be inserted by 'fast rope' in close proximity to where the hostages were being held. This technique of sliding down a rope from the rear of the helicopter allows the assault troops to be very quickly inserted from the hover into an area that the helicopter cannot physically land.

By the 9<sup>th</sup> of September 16 days after the hostages had been detained, negotiations had reached an impasse and the rescue mission was given the go ahead. Just prior to first light the following morning the assault was launched at 0615hrs. Within less than a minute after being inserted, the hostages had been secured by the SAS and by 0700hrs the hostages and wounded from the assault were onboard the extraction Chinook headed for the safety and medical care on board the Royal Fleet Auxiliary ship Sir Percival. By 1045hrs, the last of the assault group had left the rebel areas and the mission was a complete success with all of the hostages safely rescued, a small number of Paras wounded, and the loss of one SAS trooper.

The significance of this particular case study is that it highlights the strategic flexibility that the British government and military possessed to respond effectively and rapidly to this crisis. As it was eventually discovered, the only viable tactical option was for an air assault on the rebel strongholds. The fact that the UK already possessed a formed special operations aviation unit in 7 Sqn RAF, provided them with the capacity to

confidently proceed with a direct action plan. The question in this case may be asked: Why would conventional Chinook aircrew not have been capable of effectively supporting the mission? The answer lies in the proficiency of the aircrew in special operations tactics; both aviation tactics and those of the supported forces such as the SAS. In this situation, it had been determined that the advantage of surprise would be fleeting but critical to safely securing the hostages in the opening moments of the assault. As Dr. Christine Coker notes; the SAS train and work with the special operations aviation crews regularly.<sup>122</sup> Therefore the Chinook crews were already familiar with and proficient in the 'fast rope' technique. This allowed the SAS and the aircrew to focus on preparing for the specific circumstances of the tactical situation and not the actual insertion technique. Essentially this meant that all the key players were mission ready from the outset, less being briefed on the plan and rehearsing it. This meant that a minimum amount of preparation time was required prior to being in a position to carry out the mission. In the end having a formed SOA capability proved fundamental in being able to execute the rescue mission with confidence and in a timely manner.

## **SUMMARY**

The two case studies demonstrated from opposite aspects how special operations aviation can be a critical component in enabling special operations. In the case of Operation Eagle Claw, the lack of mission ready helicopters and more specifically aircrew demonstrated the significant difficulties of developing a special operations capability for a complex mission skill set after it is required. This lesson was learned rather quickly by the US military. Following the failure at Desert One, a second rescue

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<sup>122</sup> *Ibid.*, 69.

plan was developed. However, this time planners decided to form the aviation task force (TF) from US army aviation assets of the 101<sup>st</sup> Airborne Division (Air assault). This task force, known as TF158 was comprised of OH-6 scout helicopters, the recently fielded UH-60 Blackhawk medium assault helicopter, and the heavy lift CH-47C Chinook. The hostages were finally released in January 1981 and the second rescue operation was subsequently cancelled. However, TF158 was not disbanded and would retain the specialist aviation skills that they had developed. The unit would eventually become what is now known as the 160<sup>th</sup> Special Operations Aviation Regiment (SOAR). In contrast Operation Barras exemplified how quickly effective special operations can be mounted when ready, trained, and integrated units already exist. The RAF SOA aircrew, not only made the UK rescue mission possible but, also facilitated a rapid response within 17 days of the onset of the crisis. In both instances special operations aviation played a critical role in the respective national government's ability to create strategic effect through the use of special operations.

## **CHAPTER 4- CANADIAN SPECIAL OPERATIONS AVIATION: TO BE OR NOT TO BE?**

### **INTRODUCTION**

Earlier chapters identified the strategic role and importance of SOF in the current and future global security environment. In addition, the case studies of the last chapter demonstrated that SOA can often be an essential enabler of special operations. The creation of Canadian Special Operations Forces Command (CANSOFCOM) in 2006, along with its component parts to include 427 SOA Sqn, acknowledged that Canada had recognized the strategic importance of SOF and SOA in the contemporary operating environment. However, where are we now with respect to the development of a robust SOA competency? Canadian SOA is not a completely new capability as it has existed in a limited fashion in a domestic counter terrorism role since the early 1990s. But, despite the recognition four years ago for the need of a more robust SOA capability, the ability of CANSOFCOM to generate strategic SOA capacity remains insufficient. Therefore, in this chapter the current status of Canadian SOA will be examined, along with what manner of capabilities it should have. This will be followed by an exploration of possible options available to meet these requirements for a sustainable and effective Canadian SOA capability.

### **CURRENT STATUS**

Since 2006, the overall capacity of 427 SOA Sqn to be able to provide critical support to Canadian special operations has been and remains somewhat limited. While it is readily acknowledged by the author, and demonstrated by the example of Operation Eagle Claw in the previous chapter that a mature and sustainable SOA capability cannot

be created “overnight”, there are some inherent limitations which continue to hinder the ability of the Sqn to develop and generate an appropriate level of SOA effect. This is in large part due to the unit having been simply re-rolled from a conventional tactical helicopter squadron to special operations with seemingly little initial consideration given, other than a shift in command relationship.<sup>123</sup> Consequently, with the exception of the previously developed small domestic counter terrorism capability, the unit’s organization, training, and equipment reflected contemporary conventional requirements of the time. What follows is a brief examination of the current state of 427 SOA Sqn’s organization, training, equipment, and personnel management and how they are affecting continued growth and development of SOA capability.

The current establishment of 427 SOA Sqn has not incurred any significant changes since 1996, when a third operational flight responsible for support to JTF 2 in the domestic counter terrorism role was added. Otherwise the establishment represents a legacy cold war utility helicopter squadron, doctrinally designed to be a conventional Land Force Divisional asset.<sup>124</sup> This organization reflected two operational flights established to operate eight helicopters each, as well as a headquarters, logistical support and aviation maintenance flight.<sup>125</sup> The manning and equipment of the unit was designed to be able to deploy the organization as a whole into the battle space, where it would be

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<sup>123</sup> In accordance with the Transfer of Command Authority (TOCA), the Air Force transferred Operational Command of 427 SOA Sqn to CANSOFCOM in February, 2006.

<sup>124</sup> Previous conventional land force and tactical aviation doctrine for which 427 Squadron’s establishment was originally designed, called for a utility helicopter squadron (originally equipped with the CH-135 Twin Huey, replaced in the 1990s by the CH-146 Griffon) to be controlled at divisional level while each of the division’s brigades would have a reconnaissance helicopter squadron (equipped with the CH-136 Kiowa) in support.

<sup>125</sup> Canada. Department of National Defence, "427 SOA Sqn Establishment Report," (01 April 2010), DWAN Accessed: <http://dhrim04.desc.mil.ca/engraph/dynamic/output/592665859/NDPOS022L.htm>

able to operate, move and sustain itself while having the capacity to forward deploy its two operational flights for short durations. While this organization was effective for the types of operations it was conceived for, it has proven limiting for support to special operations.

One of the significant limitations or stressors that the current establishment has placed on the ability to generate SOA has been a critical shortage of support trades. While this problem is not unique to special operations or 427 SOA Sqn specifically, it is magnified due to the nature of current operations. The unit no longer deploys as a whole and typically it is common to have several small detachments deployed simultaneously. Each of these detachments requires support while they are deployed to include functions such as intelligence, signals/communications, supply, Mobile Support Equipment operators (MSE Ops, i.e. drivers) etc.... The current support manning structure was designed to facilitate the deployment of the unit in its entirety or only a portion thereof at any given time. To support multiple detachments requires in many cases an increased number of these vital support trades since there can be no efficiency achieved from all of the Sqn's sub units operating from one base or in close proximity to one another.

Additionally, the nature of the new mission and roles for 427 SOA Sqn coupled with its legacy personnel establishment, have significantly challenged its ability to generate and sustain operations with a sufficient amount of qualified aircrew. This is primarily due to the diversity of skill sets that are now required by the unit's aviators. The mission of 427 Sqn is:

To provide CANSOFCOM agile, high-readiness special operations aviation forces capable of conducting special operations across the spectrum of conflict at home and abroad.<sup>126</sup>

The currently assigned roles for 427 Sqn are; Counter Terrorism (CT), Direct Action (DA), Special Reconnaissance (SR), and Defence, Diplomacy, and Military Assistance (DDMA).<sup>127</sup> Both the mission and assigned roles have domestic and international facets inherent to them, which demand in many cases different skill sets from the aircrew. For example, the training requirement for aircrew to develop proficiency in skill sets for domestic Maritime CT is quite significant in terms of resources and time. Similarly the preparation to conduct CT or DA missions abroad in a high threat environment is just as demanding and intensive. Due to the significant resource and time requirements, aircrew are unable to develop and maintain required levels of proficiency in both types of skill sets. Despite there being a common baseline for all SOA aircrew, the diversity of missions and the consequent training requirements has led to a division of operational roles within the squadron split generally along domestic and international lines.

To further complicate the ability to force generate SOA aircrew, the aircrew training system that 427 Sqn depends upon to produce qualified pilots and flight engineers (FEs) is designed to meet the needs of conventional aviation units. In other words, graduates of this training system upon arrival at a conventional aviation unit are

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<sup>126</sup> Canada. Department of National Defence, *Canadian Special Forces Command: An Overview*, 11.

<sup>127</sup> Ibid.11. **CT** refers to the offensive and defensive measures taken to prevent, deter, pre-empt and respond to terrorism, both domestically and internationally. **CT** measures are mostly offensive actions such as hostage rescue, recovery of sensitive material or strikes at infrastructure but additionally include mitigation and deterrent activities. **DA** are short duration strikes and other precise small-scale offensive actions conducted by SOF to seize, destroy, capture, exploit, recover or damage designated targets. **SR** missions are conducted to collect or verify information of strategic or operational significance. **DDMA** refers to operations that contribute to nation building through assistance to select states through the provision of specialized military advice, training and assistance.

theoretically considered “combat ready”. However, once aircrew arrive at 427 Sqn, there is a requirement to conduct further training to acquire basic SOA skill sets prior to being ready to conduct special operations. Currently, this training must be accomplished by 427 Sqn. Since this is a relatively new functional requirement generated by the unit’s revised roles and mission, the personnel structure does not account for adequate numbers of instructor pilots and instructor FEs to accomplish the task. This is just another example of the fact that the personnel establishment was never designed to meet the current demands of it.

Similarly, the current airframe employed was never intended nor envisioned to fulfill the SOA roles now assigned to 427 Sqn with the exception of the domestic CT task. The platform presently in use is the CH-146 Griffon helicopter. This is a militarized version of the Bell 412 helicopter. It is a twin engine light utility helicopter, capable of transporting up to 10 passengers at speeds of 220 km/h, with an operating range of 656 km.<sup>128</sup> While it has proved a suitable platform for domestic special operations, it is widely accepted that it is severely limited in being able to support the wider range of roles required of SOA.<sup>129</sup> Its greatest drawback is its limited lift capacity thereby reducing its usefulness to effectively provide mobility for SOF.

The second SOF truth is: “Quality is better than quantity.”<sup>130</sup> This truth is very relevant with respect to the personnel selection and management process that is currently in place for SOA. Presently of the four units within CANSOFCOM, only 427 Sqn does

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<sup>128</sup> Canada. Department of National Defence, "CH-146 Fact Sheet", <http://www.airforce.forces.gc.ca/v2/equip/ch146/specs-eng.asp>

<sup>129</sup> Bernard Brister, "Canadian Special Operations Mobility-Getting the Right Tools," *Canadian Military Journal* 9, no. 2, <http://www.journal.forces.gc.ca/arc/index-eng.asp>, 53.

<sup>130</sup> Collins, *Green Berets Seals and Spetsnaz: U.S. and Soviet Special Military Operations*, xiii.

not have a formal personnel selection and screening procedure in place. While a detailed examination of screening and selection of personnel for Canadian SOA is beyond the scope of this paper it is worth noting the drawbacks of the current process.<sup>131</sup> As has been previously identified, SOF are specially selected, trained and organized to conduct high risk and/or politically sensitive operations. The argument for SOF and equally applicable to SOA personnel selection is that the cost of failure of special operations is much higher than the cost of ensuring that the most appropriate personnel have been chosen for the task.<sup>132</sup> This point in particular was highlighted by the Operation Eagle Claw case study in the previous chapter. At the present time, not all personnel at 427 Sqn are volunteers and the majority of manning requirements are subject to the current Air Force personnel management process. In essence without a formal selection process in place there is very little that can be done to ensure the overall suitability of the personnel assigned to 427 Sqn. While it is understood that it will take time to develop a proper SOA selection process, in its absence Canadian SOA will be prevented from reaching its full and required potential.

It is evident as a result of the manner in which 427 SOA Sqn was transitioned to special operations that there are some continuing challenges to developing a flexible and robust SOA capability. The brief overview of some of the issues posed by the dated nature of 427 Sqn's present personnel establishment reveal insufficiencies that will need to be addressed over the long term in order to facilitate continued development and growth. However, under the auspices of the current Canadian Forces Strategic Review,

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<sup>131</sup> For a more in depth look at this issue see: Morehen, T.A.. "A Selection Process for SOF Aviation in Canada" Canadian Forces College Joint Command and Staff Program Master's Thesis.

<sup>132</sup> *Ibid.*, 33.

CANSOFCOM should have the opportunity to provide a remit on its overall force structure requirements and therefore possibly rectify some of these establishment deficiencies. Much like the current force structure, the CH-146 was not envisioned to be employed within the spectrum of special operations and consequently the ability for SOA to effectively fulfill some of its assigned roles will continue to be hampered until more suitable platforms are available. In addition, the lack of a formal personnel screening and selection process will prolong the development of a credible and experienced SOA competency. What does this mean for now and the near future? Essentially the strategic capability of SOA in CANSOFCOM will remain limited until such time that the previously discussed issues are suitably dealt with. This will in turn reduce flexibility for the Canadian government to respond militarily to politically sensitive emergencies or crisis abroad.

## **WHAT WE SHOULD HAVE**

Having assessed the current status of Canadian SOA and some of the existing challenges to continued growth; what capacity should it have in order to ensure it is able to provide strategic effect into the future? SOF, despite having specialized requirements, still requires aviation to fulfill its basic doctrinal roles of: aerial firepower, reconnaissance, and mobility.<sup>133</sup> This would suggest the need for a balanced SOA force that is able to provide adequate support to all three roles. In other words:

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<sup>133</sup> Canada. Department of National Defence, *B-GA-441-001/FP-001, Tactical Level Aviation Doctrine*, 1-1.

To be effective, the Canadian rotary wing SOA community needs...a range of suitably equipped aircraft able to satisfy the unique requirements of Canadian Special Operations Forces (SOF)...<sup>134</sup>

Therefore in order to develop an ideal capability for the future, it would seem that Canadian SOA should be able to fulfill the three doctrinal roles of aviation in support of SOF. However, this ideal force structure is unrealistic for Canada given the resources available and therefore tactical mobility should be the focus for Canadian SOA development. This emphasis would ensure that as a minimum SOF has the integral strategic enablers they require to effectively operate at home or abroad. To explore these ideas, the concept of a balanced special operations aviation force will be investigated along with the critical requirement for tactical mobility.

Balance, when used in reference to force structure may be defined as the combination of force elements that will provide the most flexibility in order to accomplish the greatest number of tasks across the spectrum of conflict. For example a force comprised of one aircraft type would likely provide ample capacity, but over a very narrow task set. Conversely a force structure of similar size consisting of a broader number of airframe types would have the ability to accomplish a wider range of tasks but have a reduced capability to sustain them. In this context, SOA is no different than conventional tactical aviation where balance becomes the search for the correct amount of diversity in the types of airframes in order to best accomplish the tasks assigned.<sup>135</sup>

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<sup>134</sup> Jim Dorschner, "Instructions Not Included- Thoughts on Building a Canadian Special Operations Aviation (SOA) Capability," *Canadian Military Journal* 9, no. 3 (2009), <http://www.proquest.com>, 92.

<sup>135</sup> Gongora, Thierry and Slawomir Wesolkowski, "What does a Ballanced Tactical Helicopter Force Look Like: An International Comparision," *Canadian Air Force Journal* I, no. 2 (Summer 2008), 13-19, 14.

The simplest way to determine an appropriate level of balance would be to examine what others have discovered to be a functional and flexible force structure, thus making use of their valuable experience. With respect to SOA force structures, it is essentially only the US, 160<sup>th</sup> SOAR that demonstrates any significant level of balance. Each of the four battalions of the unit is comprised of a “strategic composition of light, medium and heavy helicopters, all highly modified in design to meet the unit’s unique mission requirements.”<sup>136</sup> The light helicopters are a mix of AH-6 (attack) and MH-6 little birds.<sup>137</sup> The medium helicopters are MH-60 Black Hawks and the heavy helicopters are the MH-47 Chinooks. In the case of the 160<sup>th</sup> SOAR, each of the three doctrinal roles of aviation can be effectively supported by assets integral to the unit. The AH-6s provide a reconnaissance and aerial firepower capability. In addition, some MH-60L Black Hawks are modified to carry different weapons packages to also fulfill the firepower role. However, the bulk of the unit’s capabilities, the MH-6s, MH-60 Black Hawks and the MH-47 Chinooks, are focussed on varying degrees of mobility. The overall result is a very flexible SOA unit that is able to provide robust support to SOF.

In contrast, 7 Sqn RAF in the UK only operates the Chinook heavy transport helicopter, and Australia only the S-70A Black Hawk<sup>138</sup>, a medium transport helicopter in a dedicated SOA role. Even with what is considered to be a balanced force, the US 160<sup>th</sup> SOAR employs assets of which the majority are used to provide mobility. If one is to heed these examples of Canadian allies, one would have to conclude that effective

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<sup>136</sup> United States. Department of Defense, "The 160th Special Operations Aviation Regiment (Airborne): Fact Sheet," , <http://www.soc.mil/160soar/160soar.html>.

<sup>137</sup> These are modified military versions of the more commonly known Hughes 500 helicopter.

<sup>138</sup> Australian Defence Force, "Capability Fact Book," (April 2003), <http://www.defence.gov.au/publications/cfb.pdf>, 23.

tactical mobility is the priority task for a dedicated SOA organization. This is also supported by the two case studies of the previous chapter. For the Iranian hostage rescue operation, the critical requirement for SOA was to provide the tactical mobility for the Delta Force assault team from Desert One to the embassy and subsequently back to the evacuation airfield with the rescued hostages. In Operation Barras, the vital requirement for aviation support was for the transport and insertion of the SAS rescue assault force. In both situations, the requirement for tactical mobility proved to be decisive in terms of being able to achieve the overall strategic effect of the operation.

This point is also emphasized by recent operational experience. For example in assessing Canadian special operations mobility requirements in a recent article, Bernard Brister points out that operations in Iraq highlighted that a SOF task force's (TF) overall effectiveness was vitally linked to its ability to address its own mobility requirements. There exists the option under these kinds of circumstances for a nation to rely on coalition partners to provide mobility support to its SOF TF. However, this is not an effective option as recent operations in Afghanistan and Iraq demonstrate that there is very little guarantee that aviation support will be forthcoming in a timely manner, if at all.<sup>139</sup> This is due to the high demand in general for aviation support and the limited availability of SOA in theatre. Additionally, any coalition SOA would likely only be provided to support another nation's SOF if the operation falls within the coalition partners' national interest and priorities.<sup>140</sup> This has been a critical issue plaguing

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<sup>139</sup> Brister, *Canadian Special Operations Mobility-Getting the Right Tools*, 10 April 2010, 54

<sup>140</sup> *Ibid.*, 54

Canadian SOF as they have dealt with this particular circumstance while conducting operations in Afghanistan.

In light of the fact that Canada has not been able to provide tactical mobility for SOF abroad, it will not likely be capable of fielding a balanced SOA force any time soon. The Canadian Forces are often compared to the Australian Defence Force (ADF) as they are very similar in terms of overall size and resources available. The British on the other hand, represent a force structure and resource base of a greater order of magnitude somewhere between the Canadian/Australian example and that of the US. The UK and Australians to date have only concentrated on tactical mobility with their dedicated SOA. Therefore, it would seem logical that for Canada the idea of a balanced SOA force is not within the realm of possibility from an overall resource perspective. This becomes apparent from a simple comparison of the US 160<sup>th</sup> force structure and that of 427 SOA Sqn. In terms of relative size, 427 SOA Sqn as a whole can be compared to one of the four battalions of the 160<sup>th</sup> SOAR. In addition as was already highlighted the 160<sup>th</sup> operates highly modified airframes different from those employed by conventional aviation forces. This implies that the 160<sup>th</sup> requires specialized maintenance and logistical support for its fleets. Currently 427 SOA Sqn's small fleet of CH-146 Griffons only have minor modifications that are for the most part found in the form of modular mission kits. The result is that there is no requirement for unique or specialized maintenance for the aircraft. This also allows 427 SOA Sqn to achieve a level of synergy with the rest of the CH-146 fleet with respect to such things as basic aircrew and maintenance training, and a common supply chain. Therefore regardless of what types of aircraft are employed by 427 SOA Sqn in the future, the flexibility in support and training

achieved in operating a common platform with the rest of the Air Force cannot be underestimated.

Does this then suggest that balanced aviation support to special operations cannot be practically achieved? Experience or historical examples would demonstrate that this balance can be accomplished through the employment of conventional aviation forces in certain roles. For example, in Operation Barras aerial fire support was arguably a critical requirement for mission success due to the requirement to suppress rebel heavy weapons systems able to engage the Chinooks during the assault. In this case the task was effectively executed by conventional UK Army Air Corp Lynx attack helicopters. This merely exemplifies that there are acceptable and effective means available to mitigate the lack of integral abilities of a SOA organization to support all three doctrinal aviation roles.

In summary, what is evident from allied examples and experience is that tactical mobility needs to be the focal point for capability development of Canadian SOA. The ideal of a balanced force along the lines of the US 160<sup>th</sup> SOAR is neither realistically attainable nor an absolute necessity in the Canadian context. What will be critical however will be the continued growth of a credible and competent SOA organization able to provide Canadian SOF with effective tactical mobility. Only if this occurs will CANSOFCOM have a SOA capability that will provide the necessary strategic enablers to provide flexibility to Canadian special operations.

## **POSSIBLE OPTIONS**

Knowing that developing a strategically relevant SOA capability should be centred around providing effective mobility to SOF, there are several options available

given current helicopter fleets and capital acquisition projects that are underway. There is the CH-148 Cyclone, a medium lift capable helicopter, which is set to replace the Sea King in the near future. There is also the CH-47F Chinook project which will deliver 15 of the heavy transport helicopters starting in 2013. In addition, Canada is currently operating six CH-47D model Chinooks in Afghanistan to bridge the capability gap until the delivery of the new aircraft. Each of these airframes, in the right numbers and organized appropriately, have the potential to effectively improve mobility for SOF.

The status quo of continuing to operate with only the CH-146 Griffon is not viable over the long term. The lift capacity is inadequate to be able to provide an effective mobility capacity to SOF. While its characteristics make it well suited to the domestic CT role, it is of limited value in a deployed high threat environment where SOF often require range and payload capacities in excess of its capabilities. Therefore, maintaining the status quo will not suffice if Canadian SOA is to be developed into a true enabling strategic capability.

The ideal solution would be to equip 427 SOA Sqn with a capable medium or heavy transport helicopter. However, this is unlikely to occur in the near term due to the availability of capital acquisition funds and given the current departmental procurement priorities. In addition, the aforementioned capital projects only represent conventional force requirements and in the case of the CH-148 Cyclone do not include the requirement for a tactical mobility task. Assuming that for the foreseeable future the lack of incremental procurement funds will persist, the Canadian Government in concert with CF leadership will be forced to prioritize force structure requirements. If SOA is assigned a strategic priority under these circumstances it would be possible to re-direct some of the

airframes to provide a mobility capability. The downside to this is that another conventional force will suffer as a result.

A possible resolution to this issue would be allocating the six D model Chinooks to SOA. The cost of this endeavour would have to be explored in greater depth, since there is currently no announced plan to repatriate these helicopters once the Afghanistan mission is complete. The D model Chinook is also a significantly different aircraft from the F model such that; as previously indicated there would be increased costs with respect to maintenance, training, and parts from operating a unique fleet. While equipping 427 SOA Sqn with an appropriate medium to heavy transport helicopter would be ideal, fiscal realities would seem to indicate that there is little chance of this being a viable option for the near future.

What is possible and may be manageable within currently planned resource levels is having SOA qualified aircrew embedded in other units. For example, when the new Chinook squadron is activated a certain number of crews in the unit could be trained and SOA qualified. There would be an incremental training cost associated with this since a SOA qualification implies the maintenance of a constant state of high readiness and the acquisition of some skills above and beyond a conventional skill set. However, this factor can be mitigated if 427 SOA Sqn retains the responsibility to lead SOA mission planning, coordination, liaison etc.... This would mean that only the aircrew qualifications and flying proficiency would become an incremental task for the designated Chinook crews. In this case for a comparatively small training investment an exponential strategic return would be realized.

Each of the above suggested options would have to be explored in more depth to determine whether they are viable with respect to currently planned resource allocations. It is also not an exhaustive examination of all the courses available to further develop a mature and robust SOA mobility capacity. It is hoped though that this brief overview of some potential solutions is enough to spark further thought and debate in the SOF and Air Force communities at large.

## **SUMMARY**

Despite having been recognized as a critical component to Canadian SOF, 427 SOA Sqn remains limited in its ability to provide a truly robust SOA capability. This is in part due to inherent issues which are the direct result of a legacy personnel establishment and aircraft fleet that was never designed or intended to fulfill the current roles and tasks now expected of the unit. Additionally, personnel management continues to be a concern that has reached the point where it will begin to hamper efforts to establish an effective and credible SOA community until such time that a suitable screening and selection process is instituted. With the exception of the aircraft fleet, these issues can be addressed directly and rectified if there is a collective desire to move SOA development forward. It is also evident from allied experience and Canadian operational experience that continued SOA development efforts must be focussed on fulfilling the mobility role. It is this aspect that once achieved will truly provide Canadian SOA the ability to fulfill its strategic role in enabling SOF operations in a robust and credible manner.

## CONCLUSION

...I am a member of the fastest deployable task force in the world - ready to move at a moments notice anytime, anywhere, arriving on target plus or minus 30 seconds.

Unknown Author- Night Stalker's Creed<sup>141</sup>

The security landscape has shifted considerably over the past 20 years. From the end of the Cold War to the tragic events of 9/11, the international community has struggled to adapt to, and understand the circumstances of the world they live in. One remaining constant is that the world continues to be a dangerous place. The negative effects of such trends as; globalization, failed and failing states, and the transnational nature of non-state actors like criminal and terrorist groups, has resulted in an environment where traditional conventional force on force military responses are often no longer practical or appropriate. The ever increasing development of theory and strategic thoughts on SOF, coupled with recent employment on operations in Afghanistan and Iraq support this. As a result, SOF have become increasingly more relevant and often the preferred choice for strategic military actions deemed necessary by their governments to shape or project their national policies abroad. The Canadian military has not been blind to this evolution and has taken steps to adapt to this environment with the creation of CANSOFCOM along with its component parts to include SOA.

However, not unlike other organizations, SOF is only as effective as the sum of its parts. The two historical examples of Operation Eagle Claw and Operation Barras, clearly demonstrated the critical requirement for SOA to be integrated into SOF and the possible consequences if it is not. These lessons are as valid today as they were in the

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<sup>141</sup> Pushies, Night Stalkers: 160th Special Operations Aviation Regiment (Airborne), 69.

past thus confirming the need for Canadian SOA as a relevant and strategic SOF capability now and into the future. Despite this realization Canadian SOA capabilities need to be further developed in order to effectively enable special operations. Inherent institutional insufficiencies and current equipment limitations will need to be addressed along with a focus on developing in the short term an effective SOA mobility capability for Canadian SOF. It is not until these issues are suitably addressed, that Canadian SOA will begin to reach its full potential as a strategically relevant force.

## BIBLIOGRAPHY

- Allen, Patrick. *Air Assault from the Sea*. Annapolis: Naval Institute Press, 2000.
- . *Special Operations Aviation*. Shrewsbury: Airlife Publishing Ltd., 1999.
- . *US Special Operations Command: In Action*. Shrewsbury: Airlife Publishing Ltd., 2002.
- Australia Department of Defence. *Australia's National Security: A Defence Update*: Department of Defence, 2007.
- Australian Defence Force. "Capability Fact Book." (April 2003): Internet accessed: 10 March 2010, <http://www.defence.gov.au/publications/cfb.pdf>.
- Biddle, Stephen D. *Afghanistan and the Future of Warfare: Implications for Army and Defense Policy*. Carlisle Barracks, PA: U.S. Army War College, Strategic Studies Institute, 2002.
- . "Allies, Airpower, and Modern Warfare: The Afghan Model in Afghanistan and Iraq." *International Security* 30, no. 3 (Winter 2005/06): 161-176.
- . "Special Forces and the Future of Warfare." *Military Technology* 30, no. 3 (2006): 12-19.
- Brister, Bernard. "Canadian Special Operations Mobility-Getting the Right Tools." *Canadian Military Journal* 9, no. 2, Internet accessed: 10 April 2010, <http://www.journal.forces.gc.ca/arc/index-eng.asp>.
- Canada. Department of National Defence. "427 SOA Sqn Establishment Report." (01 April 2010), DWAN Accessed: 01 April 2010, <http://dhrim04.desc.mil.ca/engraph/dynamic/output/592665859/NDPOS022L.htm>.
- . *B-GA-400-000/FP-001, Canadian Forces Aerospace Doctrine*. Ottawa: DND Canada, 2007.
- . *B-GA-441-001/FP-001, Tactical Level Aviation Doctrine*. Ottawa: DND Canada, 2000.
- . "Canada First Defence Strategy", Internet accessed: 12 March 2010, <http://www.forces.gc.ca/site/pri/first-premier/index-eng.asp>.
- . Canadian Forces Joint Publication 5.0 (CFJP 5.0): *The Canadian Forces Operational Planning Process*. Ottawa: Department of National Defence, April 2008.
- . *Canadian Special Forces Command: An Overview*. Ottawa: DND Canada, 2008.
- . "CH-146 Fact Sheet", Internet accessed: 01 April 2010, <http://www.airforce.forces.gc.ca/v2/equip/ch146/specs-eng.asp>.

- . *Future Force: Concepts for Future Army Capabilities*. Kingston: Directorate of Land Startegic Concepts, 2003.
- Chun, Clayton K. S. *Aerospace Power in the Twenty-First Century: A Basic Primer*. Colorado Springs: Air University Press, 2004.
- Clancy, Tom. *Shadow Warriors: Inside the Special Forces*. New York: G.P. Putnam's Sons, 2002.
- . *Special Forces: A Guided Tour of U.S. Army Special Forces*. New York: The Berkley Publishing Group, 2001.
- Cogan, Charles G. "Desert One and its Disorders." *The Journal of Military History* 67, no. 1 (January 2003), Internet accessed: February 22 2010, <http://www.jstor.org/stable/3093172>.
- Coker, Christine Dr. "Planning in Hostage Rescue Missions, US Operation Eagle Claw and UK Operation Barras." *Military Technology* 30, no. 9 (2006): 66-69.
- Collins, John M. "'U.S. Special Operations-Personal Opinions." Lecture 1st Special Warfare Training Group, Camp Mackall, NC, 11 December 2008.", Internet accessed: 27 Feb 2010, <http://smallwarsjournal.com/mag/docs-temp/148-collins.pdf>.
- . *Green Berets Seals and Spetsnaz: U.S. and Soviet Special Military Operations*. Toronto: Pergamon Press, 1987.
- . "Special Operations Forces in Peacetime." *Joint Force Quarterly* no. 21 (Spring 1999): 56-61.
- . *Special Operations Forces: An Assessment*. Washington, DC: National Defense University Press, 1994.
- Dannreuther, Roland. *International Security: The Contemporary Agenda*. Malden: Polity Press, 2007.
- Dorschner, Jim. "Instructions Not Included- Thoughts on Building a Canadian Special Operations Aviation (SOA) Capability." *Canadian Military Journal* 9, no. 3 (2009), Internet accessed: 11 March 2010, <http://www.proquest.com>.
- Durant, Michael J., and Steven Hartov. *The Night Stalkers*. New York: G.P. Putnam's Sons, 2006.
- Durant, Michael J., with Steven Hartov. *In the Company of Heroes*. New York: Penguin Group, 2006.
- Finlan, Alastair. *Special Forces, Strategy and the War on Terror: Warfare by Other Means*. New York: Routledge, 2008.
- Fowler, William. *Operation Barras: The SAS Resue Mission, Sierra Leone 2000*. London: Weidenfield & Nicolson, 2004.

- Gates, Robert M. "SOF's Roles in Facing the Dangers of the 21st Century." *Military Technology* (Special Issue 2009): 2-4.
- Gizewski, Peter. "The Future Security Environment: Threats, Risks and Responses." *CIIA: International Security Series* (March 2007), Internet accessed: 11 March 2010, <http://www.canadianinternationalcouncil.org/resourcece/archives/internatio>.
- Gongora, Thierry and Slawomir Wesolkowski. "What does a Ballanced Tactical Helicopter Force Look Like: An International Comparision." *Canadian Air Force Journal* I, no. 2 (Summer 2008): 13-19.
- Haas, Michael E., Col, USAF (Ret.). *Appolo's Warriors: US Air Force Special Operations during the Cold War*. Maxwell Air Force Base: Air University Press, 1997.
- Hammond, Jamie W. "Special Operations Forces: Relevant Ready and Precise." In  *Casting Light on the Shadows: Canadian Perspectives on Special Operations Forces*, edited by Colonel Bernd Horn and Maj Tony Balasevicius, 209-236. Toronto: The Dundurn Group, 2007.
- Hart, Liddell B. H. *Strategy*. Second Edition Revised ed. New York: Meridien, 1991.
- Hindmarsh, Mike Major General. "The Philosophy of Special Operations." *Australian Army Journal* III, no. 3 (Summer 2006): 11-24.
- Horn, Bernd. "'Avenging Angels': The Ascent of SOF as the Force of Choice in the New Security Environment." In *Casting Light on the Shadows: Canadian Perspectives on Special Operations Forces*, edited by Colonel Bernd Horn and Maj Tony Balasevicius. Kingston: Canadian Defence Academy Press, 2007.
- . "Special Operations Forces: Uncloaking an Enigma." In *Casting Light on the Shadows: Canadian Perspectives on Special Operations*, edited by Horn, Bernd and Tony Balasevicius, 19-36. Kingston: The Dundurn Group, 2007.
- Horn, Bernd, J. Paul de B. Taillon, and David Last, ed. *Force of Choice: Perspectives on Special Operations*. Kingston: McGill-Queens Press, 2004.
- Horn, Lieutenant-Colonel Bernd. "Special Men, Special Missions: The Utility of Special Operations Forces-A Summation." In *Force of Choice: Perspectives on Special Operations*, edited by Bernd Horn, J. Paul de B. Taillon, and David Last, 3-33. Montreal & Kingston: McGill-Queen's University Press, 2004.
- Jennings, Christian. *Midnight in some Burning Town: British Special Forces Operations from Belgrade to Baghdad*. London: Weidenfeld & Nicolson, 2004.
- Johnston, Peter. *Future Security Environment 2025*. Ottawa: Operational Research Division Directorate of Operational Research (CORP), 2005.
- Katz, Samuel M. *Israeli Special Forces*. Osceola: Motorbooks International, 1993.

- Kiras, James D. *Special Operations and Strategy: From World War II to the War on Terrorism*. New York: Routledge, 2006.
- Koskinas, Gianni Maj. "Desert One and Air Force Special Operations Command: A 25-Year Retrospective." *Air & Space Power Journal* 19, no. 1 (Spring 2005): 113-114.
- Kreisher, Otto. "Desert One Disaster." *MHQ: The Quarterly Journal of Military History* 13, no. 1 (Autumn 2000): 42-51.
- Kyle, Colonel James H., USAF (Ret.). *The Guts to Try*. New York: Orion Books, 1990.
- Lawrence, Richard Russell, ed. *The Mammoth Book of Special Ops*. New York: Carroll & Graf, 2006.
- Leibstone, Marvin. "Special Operations Forces & 21st Century Warfare." *Military Technology* (Special Issue 2009): 29-33.
- Lewis, Duncan Major General. "Guarding Australians Against Terrorism." *Australian Army Journal* 1, no. 3 (Summer 2003): 45-52.
- . "Inside and Outside the Battlespace: Understanding the Rise of Special Operations in Australia." *Australian Army Journal* 1, no. 2 (Summer 2003): 53-58.
- Lucas, LGen Steve, Chief of the Air Staff. *Transfer of Command Authority- 427 Squadron*. NDHQ Ottawa: file 3010-1 (D Air SP), 27 January 2006.
- Marion, Forrest L. "Air Force Combat Controllers at Desert One: April 24-25, 1980." *Air Power History* 56, no. 1 (spring 2009): 46-55.
- Marquis, Susan L. *Unconventional Warfare: Rebuilding U.S. Special Operations Forces*. Washington, D.C.: The Brookings Institution, 1997.
- McRaven, William H. *Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice*. Novato: Presidio Press, 1996.
- . "Special Operations: The Perfect Grand Strategy?" In *Force of Choice: Perspectives on Special Operations*, edited by Bernd Horn, J. Paul de B. Taillon, and David Last, 61-78. Kingston: McGill-Queens University Press, 2004.
- Morehen, T. A. LCol. "A Selection Process for SOF Aviation in Canada." Canadian Forces College Joint Command and Staff Program Master's Thesis, 2009.
- NATO. *AJP-1(A) Combined SOF Concept 3200* March 1997.
- O'Neill, Bard E. *Insurgency and Terrorism: From Revolution to Apocalypse*. Second Edition ed. Washington, D.C.: Potomac Books, Inc., 2005.
- Pugliese, David. *Shadow Wars: Special Forces in the New Battle Against Terrorism*. Ottawa: Esprit de Corps Books, 2003.

- Pushies, Fred J. *Night Stalkers: 160th Special Operations Aviation Regiment (Airborne)*. St. Paul: Zenith Press, 2005.
- . *U.S. Air Force Special Ops*. St. Paul: Zenith Press, 2007.
- Schroder, James A. "Ambush at 80 Knots: Company B, 3/160th SOAR." *Special Warfare* 15, no. 3 (September 2002), Internet accessed: 21 March 2010, <http://proquest.umi.com>.
- . "Forty-Five Seconds on a Hot LZ: The 2/160th SOAR." *Special Warfare* 15, no. 3 (September 2002): 46-49.
- Seymour, William. *British Special Forces*. London: Sidgwick & Jackson, 1985.
- Sun Tzu. *The Art of War*. Translated by Griffith Samuel B. New York: Oxford University Press, 1963.
- Taillon, J. Paul de B. "Canadian Special Operations Forces: Transforming Paradigms." *Canadian Military Journal* 6, no. 4 (Winter 2005-2006): 67-76.
- . "Coalition Special Operation Forces." *Military Technology* (Special Issue 2009): 12-17.
- . *The Evoloution of Special Forces in Counter-Terrorism*. Westport: Praeger, 2001.
- Till, Geoffrey. "The Evolution of Strategy and the New World Order." In *Contemporary Security and Strategy*, edited by Craig A. Snyder. Second Edition ed., 95-117. New York: Palgrave Macmillan, 2008.
- United Kigdom. *AP 3000 British Aerospace Doctrine*. Fourth Edition ed. London: The Stationary Office, 2009.
- United Kingdom, Ministry of Defence. *Delivering Security in a Changing World: Defence White Paper*. Norwich: MoD, December 2003.
- United States. . *"the Holloway Report"*. Washington: Department of Defense, 1980.
- United States. Central Intelligence Agency. "Long Term Demographic Trends: Reshaping the Geopolitical Landscape." (July 2001), Internet Accessed: 10 March 2010, [https://www.cia.gov/library/reports/general-reports-1/Demo\\_Trends\\_For\\_Web.pdf](https://www.cia.gov/library/reports/general-reports-1/Demo_Trends_For_Web.pdf).
- United States. Department of Defense. "The 160th Special Operations Aviation Regiment (Airborne): Fact Sheet." Internet accessed: 1 April 2010, <http://www.soc.mil/160soar/160soar.html>.
- . *JP 3-05 Doctrine for Joint Special Operations*. Washington: U.S. Government Printing Office, 2003.

———. . *Quadrennial Defense Review Report*. Washington, DC: U.S. Government Printing Office, 1 February, 2010.

von Clausewitz, Carl. In *On War*, edited by Michael Howard and Peter Paret. Princeton: Princeton University Press, 1976.

Wooley, Michael W. "America's Quiet Professionals: Specialized Airpower--Yesterday, Today, and Tomorrow." *Air & Space Power Journal* 19, no. 1 (Spring 2005).

427 Special Operations Aviation Squadron: Based at Petawawa, provides helicopter transport and other aviation support for Canada's special forces. Canadian Special Operations Forces Command: Known as CANSOFCOM, this is the headquarters for special forces units. Based in Ottawa. Canadian Special Operations Training Centre: Established in 2012 at Petawawa, Ont., to provide training to various CANSOFCOM units. 427 Special Operations Aviation Squadron (427 SOAS) (French: 427e Escadron d'opérations spaciales d'aviation, 427 EOSA) is a tactical helicopter unit that provides aviation support to Canadian Special Operations Forces Command. The squadron is based at CFB Petawawa, Ontario with a fleet of Bell CH-146 Griffon helicopters. Aviation Stack Exchange is a question and answer site for aircraft pilots, mechanics, and enthusiasts. It only takes a minute to sign up. Sign up to join this community. Most of the States that have authorized their pilots to fly as pilot-in-command in commercial air transport operations after they reach the age specified in 2.1.10.1 also authorize pilots holding a license issued or validated by another States to fly in their own airspace under the same condition. However, ICAO does not collect information on States authorizing pilots to fly in their airspace after reaching the age of 60 and cannot provide information on the subject.