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**CANADIAN FORCES COLLEGE / COLLÈGE DES FORCES CANADIENNES  
CSC 32 / CCEM 32**

**EXERCISE / EXERCICE NEW HORIZON**

**Beyond the Medium Transport Helicopter – The Tactical Aviation Gap**

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## **ABSTRACT**

This paper will review the projected Tactical Aviation Lift Capability (TALC) requirements. It will then illustrate the requirement-capability gap of the DPS' Domestic operational functions where it will show the expanding trend of military missions, the geographical imperatives and the consequence of failure. Thirdly, it will conduct a similar examination for the Expeditionary functions by concentrating on the MSTF mandate. Fourthly, it will demonstrate the essential Force Generation requirements. The latter is the inescapable critical requirement for a robust and comprehensive capability to allow both the qualitative maturation of the required skills sets and the quantitative critical mass to sustain the overall tactical aviation tasks. The paper concludes that the Tactical Aviation contribution to Canada's security in the Post-9/11 world will be greatly handicapped by over-relying on TALC and its consequent budgetary-driven cuts to the present order of battle; TALC must be complemented by more numerous, complementary systems to fully support the DPS.

**“Stovepipe” thinking leads to competition for scarce resources – a competition we cannot afford.**

**- LGen Jeffery, CLS, 2001**

**INTRODUCTION**

In 2005, the release of Canada’s International Policy Statement (IPS) brought a holistic view to steer Canada’s through the Post-9/11 World. Comprised of four interlocking chapters of Diplomacy, Defence, Development and Trade, it sets achievable, yet ambitious goals.<sup>1</sup> For the Canadian Forces, it means to be engaged, at home and abroad, in fewer missions, by being “...effective, relevant and responsive...” while remaining capable to engage in combat operations.<sup>2</sup> It also states that additional resources to carry out these tasks will be made available.<sup>3</sup> The Budget of 2005 leading to the DPS has been labelled as the “...largest reinvestment in Canada’s military in over 20 years.”<sup>4</sup> While the recent elections introduced a new political party at the helm, it is assumed that the most basic tenets of the IPS will remain generally unchanged.<sup>5</sup> If anything, a further emphasis shift towards Canadian domestic operations could occur,

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<sup>1</sup> International Policy Statement: A Role of Pride and Influence in the World – Overview, (Department of Foreign Affairs and International Trade, Ottawa, ON, 2005), p. ii –v.

<sup>2</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 27.

<sup>3</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 2

<sup>4</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 1.

<sup>5</sup> Elinor Sloan, *The Strategic Capability Investment Plan: Origins, Evolution and Future Prospects*, (Canadian Defence & Foreign Affairs Institute, Calgary, AB), 3

some of the relative priorities and timelines could be changed and overall funding baselines would be increased.<sup>6</sup>

One of these tenets of the DPS states that the CF will see Canada as “...a single operational area...”, requiring a comprehensive review of Command and Control, organizations and activities for *Domestic Operations*.<sup>7</sup> The DPS also specifies that Canada *Expeditionary* contribution would focus on *failed and failing states*,<sup>8</sup> by a more salient presence in fewer theatres and by doubling its capacity to undertake operations overseas.<sup>9</sup> Furthermore, to accomplish this *Transformation*, in scope and in ways, new decisive capabilities would have to be created.<sup>10</sup> One such case is that of the Tactical Aviation Lift Capability (TALC) to be procured in the near- to mid-term “...to support land and special forces...” missions in the post-9/11 world.<sup>11</sup> Judged an essential capability, TALC will provide the CF with an improved mobility in countries where security and lack of infrastructure demands unimpeded mobility and timely, decisive reach.<sup>12</sup> TALC will also provide a significant contribution to the support of domestic operations.

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<sup>6</sup> Gordon J. O’Connor, MDN, Speech the Conference of Defence Associations Institute Annual General Meeting, February 23, 2006, [http://www.forces.gc.ca/site/Newsroom/view\\_news\\_e.asp?id=1860](http://www.forces.gc.ca/site/Newsroom/view_news_e.asp?id=1860), Internet, last accessed 24 Apr 2005.

<sup>7</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 18.

<sup>8</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 5.

<sup>9</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 3.

<sup>10</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 13.

<sup>11</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 14

<sup>12</sup> Department of National Defence, Capability Initiative Database, TALC Project 00001007, Capability Deficiency, updated 3 Nov 2005, p. 4.

The corollary to this new capability is that difficult decisions will also have to be made to retire others capabilities that are considered less relevant or too onerous.<sup>13</sup> The funding resources required for TALC are significant and stresses the overall Defence Services Program. To offset these expenditures, significant cutbacks are being considered by the VCDS, notably within the current Tactical Aviation capabilities<sup>14</sup> and cuts would seriously compromise Canada's ability to fulfil the DPS' stated *and implied* Domestic and Expeditionary requirements. Thus, the procurement of TALC could entail significant reduction of complementary capabilities and result in the paradox of undermining the very capability it seeks to create. This paper will demonstrate that, despite the acknowledged benefits of the upcoming *Tactical Aviation Lift Capability*, the proposed residual Tactical Aviation's Order of Battle is insufficient to fulfil Canadian Defence Policy.

This paper Begins with a review of the projected TALC requirements. It will then map out the requirement-capability gap of the DPS' Domestic operational missions where it will show the expanding trend of military missions. The geographical imperatives will be paramount for the timely reaction to a range of emerging situations. Thirdly, it will conduct a similar examination for the Expeditionary missions and concentrate on the MSTF task. In that venue, it will show a constant requirement for Reconnaissance, Command & Liaison and Utility tasks as well as a Firepower; and the

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<sup>13</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 12.

<sup>14</sup> DND, VCDS, 1150-1 (DDA) *Tactical Helicopter Requirements and Apportionment*, 18 Oct 2005.

emerging need for Escort of high-value assets such as TALC. Fourthly, it will demonstrate the essential Force Generation requirements to sustain the overall tactical aviation tasks. The latter is a critical factor to ensure the viability of a robust and comprehensive capability by allowing both the qualitative maturation of the required skills sets and the quantitative critical mass that sustains the overall Tactical Aviation capability. Finally, the paper will conclude that Canada's security in the post 9/11 world will be greatly handicapped by relying solely on the currently envisaged Tactical Aviation Lift Capability and that it must be complemented by more numerous, complementary systems to fully realize its aim of providing decisive action in supporting of the DPS.

### **“Big Honking Helicopters” – The Tactical Aviation Lift Capability Project**

Before embarking in the Tactical Aviation requirement-capability gap analysis, it is important to review the TALC project genesis to appreciate the twisted path of its evolution and the capability compromises that lie ahead. From its doctrinal source, Tactical Aviation fulfills functions of Reconnaissance, Firepower and Mobility. Since the Vietnam War, using four distinct helicopter categories – namely, the Light Observation (LOH), Utility (UH), Attack (AH) and Medium Transport (MTH) - these roles have remained sensibly the same, punctuated by evolutionary rather than revolutionary changes.<sup>15</sup> In 1995, the CF rationalized its aging helicopter fleet of LOHs, UTTHs and MTHs by introducing a single type to fulfill all tasks: the CH146 GRIFFON,

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<sup>15</sup> Department of National Defence, BGA-440-000/AF-000. *Tactical Helicopter in Operations*, p 1-3, 11-13.

a derivative of the Bell 412 commercial helicopter.<sup>16</sup> However, as demonstrated during OP KINETIC in Kosovo, the GRIFFON lift performances were limited. At the same time, the battlespace itself was witnessing a renewed C4ISR impetus.<sup>17</sup> By 1999, in a pragmatic move, the Army downgraded its lift expectations to “limited mobility”<sup>18</sup> and, reflecting the growing concern over the emerging Information function, weighted its efforts towards Reconnaissance.<sup>19</sup>

Following the removal of the CF’s CHINOOK in 1991 as a cost-reduction measure,<sup>20</sup> the GRIFFON could not make-up for the loss of medium lift capability and the shortfall became obvious in operations in Bosnia, Kosovo and Haiti as well as domestically.<sup>21</sup> During OP APOLLO, the CF noted the vertical mobility deficiency which was made even more acute by the mountainous Afghan terrain.<sup>22</sup> The US Army CH47s CHINOOK proved indispensable in successfully moving large number of troops from the 3<sup>rd</sup> Battalion Princess Patricia’s Canadian Light Infantry over long distances and rugged terrain. The CHINOOK large carrying capacity and its unrivalled landing ability

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<sup>16</sup> Department of National Defence, 32517-104 (PMO CFUTTH), *Project Charter 92/1 - , Canadian Forces Utility Tactical Transport Helicopter DSP 2517*, 14 Aug 1992, p 8.

<sup>17</sup> National Defence, *Statement of Operational Requirement - Tactical Aviation Lift Capability Project, Draft version 6.4*, dated 25 Oct 2005, p.2.

<sup>18</sup> Department of National Defence, *Capability Development Record, Tactical Aviation, 04002 (DAD/ COS AVN)*, DGLCD, 11 Nov 2004, amended 22 Sep 2005, Annex A, p. 11.

<sup>19</sup> Department of National Defence, *Future Army Capabilities*, DLSC Report 01/01, Jan 2001, Chap 2, p.8.

<sup>20</sup> Department of National Defence, 32517-104 (PMO CFUTTH), *Project Charter 92/1 - , Canadian Forces Utility Tactical Transport Helicopter DSP 2517*, 14 Aug 1992, p 8.

<sup>21</sup> National Defence, *Statement of Operational Requirement - Tactical Aviation Lift Capability Project, Draft version 6.4*, dated 25 Oct 2005, p.2.

<sup>22</sup> Department of National Defence, *Tactical Aviation Lift Capability Synopsis Sheet (Identification) 000001007*, 04 Jul 05, 1.



at high altitudes under high temperatures were especially valuable in this demanding environment. However, its availability was limited by the allies own competing priorities.<sup>23</sup> Thus, at times, the CF personnel were left isolated or unsupported once deployed; a risky endeavour in a war zone which, given the impassable terrain, could not be otherwise remedied by ground transportation.<sup>24</sup> Such shortfall in Tactical Aviation lift capability drew critical comments from the Senate Committee on Security and Defence.<sup>25</sup> The first tangible sign of progress came when the Federal Budget of 2005 identified funding for helicopters.

Subsequently, the DPS clearly articulated that Canada was to become engaged in “failed and failing states” and made specific reference to procuring “medium- to heavy-lift helicopters” in the near future.<sup>26</sup> This wide-ranging requirement is rooted in all of the new major commands: in Canada Command (CANCOM) for its Domestic Operations (DOMOPS); in Canadian Expeditionary Command (CEFCOM) for the both the Standing Contingency and Mission Specific Task Forces (SCTF and MSTF respectively) as well as the Disaster Assistance Response team (DART); and in the Canadian Special Operations Command (CANSOFCOM) for activities at home and

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<sup>23</sup> Department of National Defence, *Tactical Aviation Lift Capability Synopsis Sheet (Identification)* 000001007, 04 Jul 05, 1.

<sup>24</sup> Department of National Defence, *Tactical Aviation Lift Capability Synopsis Sheet (Identification)* 000001007, 04 Jul 05, 1 and Dianne DeMille & Stephen Priestley. *Hillier's Hopes for the Holidays – Honkin' Huge Helicopters!*, Canadian American Strategic Review, <http://www.sfu.ca/casr/ft-hillier1.htm>, Internet, Last accessed 21 Apr 2005.

<sup>25</sup> *Wounded, Canada's Military and the Legacy of Neglect – Our Disappearing Options for Defending the Nation Abroad and at Home*, Interim Report, Senate Committee on National Security and Defence, Sep 2005, p. 47.

<sup>26</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 14.

abroad.<sup>27</sup> The net sum is a demanding remit by any metrics and constitutes the basis for the Tactical Aviation Lift Capability (TALC) project that will see Chinook-sized helicopters, capable of operations in “High, Hot and Heavy” conditions, being procured in an accelerated project.<sup>28</sup> The functional tasks are of combat, tactical and logistical airlift.<sup>29</sup> However, this welcome project is framed by stringent financial limitations. As a case in point, the optimum fleet size to fully satisfy the DPS is estimated at 35 helicopters while the minimum viable fleet size is of 16 aircraft.<sup>30</sup> Already, the TALC project is acknowledged as expensive in term of procurement, operations and maintenance costs; and in terms of manning and training efforts. Even to afford the minimal viable fleet, DND is constrained to significant reductions elsewhere to offset the financial burden. Of particular interest is the planning cap of overall Tactical Aviation manning and O&M funding. Should these cuts be imposed, it would reduce the current Tactical Aviation capabilities to a point arguably below the critical mass for the implied DPS tasks.

From the departmental perspective, given current funding lines, the introduction of TALC is to occur within the existing Operations and Maintenance budget and

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<sup>27</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 30.

<sup>28</sup> National Defence, *Tactical Aviation Lift Capability Synopsis Sheet (Identification)* 000001007, 04 Jul 05, 1; and 3554-1 (D Air SP) CAS Initiating Directive – CF Combat Helicopter Force Structure Study, 15 Nov 2005, p. 2.

<sup>29</sup> National Defence, *Statement of Operational Requirement - Tactical Aviation Lift Capability Project, Draft version 6.4*, dated 25 Oct 2005, p.10.

<sup>30</sup> National Defence, *Statement of Operational Requirement - Tactical Aviation Lift Capability Project, Draft version 6.4*, dated 25 Oct 2005, p.12. Note that the number of aircraft has since been updated from 15 to 16 - LCol Bigaouette, DAR 9, PD TALC, telephone conversation with author, 21 Apr 2006.

established personnel ceilings.<sup>31</sup> In October 2005, the VCDS directed the impact assessment of a scenario based on a combat helicopter fleet made up of a maximum of “...28 CH-148 CYCLONE..., [16] medium- to heavy-lift helicopters... and 24 CH146 GRIFFON to be retained....”<sup>32</sup> This Mission-Capability Gap Analysis is currently underway by CAS in cooperation with other Level One leaders.<sup>33</sup> While there is still much analysis currently underway to ascertain the definitive TALC fleet size, configuration, geographical basing disposition, contracting arrangements and delivery timelines, these important issues will not be explored further here. Rather, this paper will now explore the anticipated residual order of battle from TALC service introduction, and the gaps in the overall Tactical Aviation Capability for Domestic and Expeditionary operations.

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<sup>31</sup> Department of National Defence, VCDS 1150-1 (DDA) 18 Oct 2005, p 2.

<sup>32</sup> The directives was issued to Chief of the Maritime Staff (CMS), Chief of the Land Staff (CLS), Chief of the Air Staff (CAS) and the Commander of the Special Operations Group (SOG). The Search and Rescue (SAR) helicopters were excluded from this staff check as were the helicopters employed at Southport, MB, under the Contracted Flying Training and Support (CFTS) Project. Department of National Defence, VCDS, 1150-1 (DDA) *Tactical Helicopter Requirements and Apportionment*, 18 Oct 2005.

<sup>33</sup> Department of National Defence, 3554-1 (D Air SP) CAS Initiating Directive – CF Combat Helicopter Force Structure Study, 15 Nov 2005, p. 2.

**“By virtue of its size, Canada requires an Expeditionary Air Force for Domestic Operations...”**

**- LGen K.R. Pennie  
Former Chief of the Air Staff**

### **The Domestic Operations Commitment-Capability Gap**

The 2004 National Security Policy (NSP) is unambiguous about the role of the state in that “...there can be no greater role, no more important obligation for a government, than the protection and safety of its citizens.”<sup>34</sup> In that vein, the Statement of Requirement (SOR) acknowledges the beneficial contribution across the full span of DOMOPS that can be made by the TALC. This issue is not disputed here; however, the overall aviation capabilities ought to be examined in light of the recent experiences; rising public expectations; and the character of domestic operations, especially, the adverse impact of vast distances. This section will examine these requirements through a *Humanitarian Assistance* mission as defined in the DOMOPS DCDS Instructions,<sup>35</sup> by using a Disaster Relief scenario with a brief side bar on Aid to Law Enforcement Agencies which contain similar elements. It will conclude that CANCOM needs, in addition to TALC, timely access to a larger number of helicopter assets to be capable of intervening at multiple points within a short time span; it will also highlight the corresponding benefits of geographical dispersion. In sum, both benefits stand to be forfeited by the contemplated Tactical Aviation reductions.

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<sup>34</sup> Privy Council Office, *Securing an Open Society : Canada’s National Security Policy*, (Ottawa, ON, 2004), p. vii.

<sup>35</sup> Department of National Defence, J3 Continental, *DCDS Direction for Domestic Operations (DDDO)*, 01 Apr 2005, Annex O, p. 10-1 and M-1.

As witnessed over the last ten year period, every helicopter community -- Maritime Aviation (MH), Tactical Aviation (TH), Special Operations (SOF) and SAR -- have undertaken increasing activities, whether in terms of number of events, resources deployed or potential for catastrophic consequences in the event of failure. The increasing frequency and intensity of natural disasters have captured the headlines in recent years while the suddenness and the large scale of destruction overwhelms local responders and examples from abroad are even more daunting. While Canadian losses were moderate thus far, the citizens have been fortunate by a mix of luck and shrewd use of resources made the difference. They have come to expect a timely response from the authorities and, undoubtedly, TALC will bring a much welcome lift capacity in response to such events.

DOMOPS is the domain of CANCOM whose design considerations includes treating Canada as a "... single operational area".<sup>36</sup> This new Command, in combination with the Joint Task Force-assigned Regional Air Component Element (RACE) could see an increase in tasks being assigned to the nearest unit instead of relying on the more traditional unit role-orientation used up to now. However, the budgetary limitations and the corresponding cuts to the Tactical Aviation fleet being considered by the VCDS would reduce the available order of battle to a fraction of what is currently available. As the net sum of available assets shrink, significant limitations of availability, timely access and reduced multiple locations action will emerge with potentially dire consequences.

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<sup>36</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 18.

Firstly, accounting every year for a significant number of life-or-death rescues, the availability of helicopters is often the determining factor in executing timely missions. Such intervention in the early hours can stem further loss of life and enable faster recovery. In particular, the devastating effects of large scale disasters must be considered: one cannot help but remember defining events such as the large tracts of land consumed by forest fires in several provinces, notably in Québec (1996) and BC (2003); to Saguenay (1996) and Winnipeg floods (1997); or the Ice Storm of 1998.<sup>37</sup> Examples from abroad, such as the *Boxing Day* Tsunami of 2004<sup>38</sup>; or Hurricane Katrina in New Orleans in 2005 further typify the magnitude of destruction.<sup>39</sup> In all of those cases, the local infrastructure was damaged or destroyed altogether. The intervention methods remaining are to proceed on foot, using all-terrain vehicles, small boats, or helicopters. All of them, except the helicopter, will take considerable time to move between rescue sites, often exposing the rescuers to additional risks or preventing access altogether, leaving people stranded for extended periods. While a direct correlation between the casualty rates between the onset of the disaster and the follow-on period cannot be drawn with accuracy, it remains that timely intervention will reduce the number of casualties.

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<sup>37</sup> Department of National Defence, VCDS / DDA Summary of Key CF Operations, nd, obtained from LCol Sam Michaud, COS DDA, VCDS, NDHQ, 25 Nov 05.

<sup>38</sup> Wikipedia, [http://en.wikipedia.org/wiki/2004\\_Indian\\_Ocean\\_earthquake](http://en.wikipedia.org/wiki/2004_Indian_Ocean_earthquake) , Internet, last accessed 23 Apr 2005.

<sup>39</sup> Wikipedia, [http://en.wikipedia.org/wiki/Hurricane\\_Katrina](http://en.wikipedia.org/wiki/Hurricane_Katrina) , Internet, last accessed 23 Apr 2005.

Secondly, the vast distances will have an impact on such timely deployment, requiring significant transit to reach the afflicted area. Amplifying LGen Pennie's quote, Col Parent indicated that a look at the map of Canada, coupled with some knowledge of its weather patterns, will indicate that a geographical distribution of helicopter assets is justified to ascertain the swift action that Canadian citizen expects.<sup>40</sup> As a case in point, Hurricane Katrina and the perceived delays in intervening brought much angst to the citizens, the local authorities and the United States Federal Government.<sup>41</sup> Thus, if it is reasonable to expect a tangible response, the physical separation between the helicopter home location and the disaster site must be in the order of a day of flying which equates to approximately 1500 kilometres between helicopter-equipped Squadrons. In addition to dedicated SAR assets and the planned TALC establishment in only two distinct locations, CF helicopters will need to be kept at intermediately-located units.<sup>42</sup>

Thirdly, the scale of disaster means that multiples sites are often involved. The TALC will be best employed by bringing its large capacity to bear where there is a demand concentration.<sup>43</sup> However, as performing a helicopter can be, it can only be at one place at the time; hence, the requirement to have multiple platforms available at once. Commandeering of civilian assets is a solution; but, the local helicopters and crews are also at risk from the disaster itself. External resources could be contracted out and

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<sup>40</sup> Col Alain Parent, D Air SP, "Canadian Air and Space Policy" (lecture, Canadian Force College, Toronto, ON, February 28, 2006).

<sup>41</sup> Wikipedia, [http://en.wikipedia.org/wiki/Hurricane\\_Katrina](http://en.wikipedia.org/wiki/Hurricane_Katrina), Internet, last accessed 23 Apr 2005.

<sup>42</sup> National Defence, *Statement of Operational Requirement - Tactical Aviation Lift Capability Project, Draft version 6.4*, dated 25 Oct 2005, p.12.

<sup>43</sup> National Defence, *Statement of Operational Requirement - Tactical Aviation Lift Capability Project, Draft version 6.4*, dated 25 Oct 2005, p.5.

certainly would. However, the delays, real or imagined, would not keep with the spirit of the NSP statement of “...no more important obligation for a government, than the protection and safety of its citizens.”<sup>44</sup> The inability for the CF to act decisively would be questionable. Op SAGUENAY is a telling case: within a day, a dozen GRIFFON scoured the country side, picking people from roof tops. As a dam burst threatened to engulf the town of La Baie, these aircraft landed in small confined areas to airlift some 1200 people isolated after the flood had swept the bridge away.<sup>45</sup> Evidently, a multiplicity of CF platforms was instrumental in reducing further loss of lives.

Finally, these quantity and location requirements are common to those of the Post-9/11 security situation. DOMOPS tempo is likely to increase with the advent of the 2010 Olympics and other similar large scale events in years to come. The same is to be said of the terrorist threat. The CF involvement in *National Emergency Plans* ranges from dealing with the threat by virtue of the *National Counter-Terrorism Plan* to assisting local authorities with *Consequences Management*.<sup>46</sup> The security issues illustrated by the G8 Summit of 2003 where the terrorism threat had a similar potential and demanded a similar scale of response as a natural disaster. Again, the ability to employ multiple platforms, as demonstrated during the G8 summit where no less than 42 GRIFFON were

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<sup>44</sup> Privy Council Office, *Securing an Open Society : Canada's National Security Policy*, (Ottawa, ON, 2004), p. vii.

<sup>45</sup> According to mission reports and crews' verbal statements to author, serving as incoming Flight Commander in 430 ETAH, Valcartier, circa Jul 1996.

<sup>46</sup> Department of National Defence, J3 Continental, *DCDS Direction for Domestic Operations (DDDO)*, 01 Apr 2005, Annex O, p. M-1 and O-2.



involved, is representative of the scale of efforts required.<sup>47</sup> As the DPS mandates that protecting Canadians is the foremost CF priority, there is a distinct risk of disconnecting Policy and Plans by cutting too deep in the Tactical Aviation assets to afford the TALC. Obviously, both TALC and a yet-to-defined residual Tactical Aviation capability are needed; so is its adequate resourcing.

In the DPS, the previous government made a specific emphasis about the growing importance of DOMOPS. The new Government's position remains to be fully articulated but has pledged that Canada was to be its first defence priority.<sup>48</sup> After examination of the DOMOPS issue, it must be stated that, in addition to the TALC potential contribution, a number of smaller helicopters, distributed across the country will ensure swift, decisive action that can live up to the NSP remit.

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<sup>47</sup> Department of National Defence, VCDS / DDA Summary of Key CF Operations, n.d, obtained from LCol Sam Michaud, COS DDA, VCDS, NDHQ, 25 Nov 05.

<sup>48</sup> Gordon J. O'Connor, MDN, Speech the Conference of Defence Associations Institute Annual General Meeting, February 23, 2006, [http://www.forces.gc.ca/site/Newsroom/view\\_news\\_e.asp?id=1860](http://www.forces.gc.ca/site/Newsroom/view_news_e.asp?id=1860), Internet, last accessed 24 Apr 2005.

**“Victory smiles upon those who anticipate the changes in the character of war, not on those who wait to adapt themselves after the changes occur.”**

**- Giulio Douhet**

### **The Expeditionary Requirement-Capability Gap**

The advent of TALC will provide the CF in general and the Army in particular with a quantum leap in lift capability throughout the battlespace. However, there are a number of *implied* tasks in the DPS that cannot be ignored in determining the size of the residual Tactical Aviation organization. These involves short notice deployment abroad; the Army enduring requirements for battlespace Reconnaissance, Command and Liaison and Utility support; the renewed requirement for Aerial Firepower and the emerging need for escorting high value assets such as the TALC in combat zones. This section will review these in turn and conclude that these *implied* tasks warrant full consideration before committing to premature and counter-productive cuts in Tactical Aviation organization.

The CF has regularly demonstrated the value of a World-wide deployable Utility Helicopter Capability such as modelled in OPLAN FORTUNE; yet, it is an implied task that has never appeared in any of the White Papers or Defence Policy updates. Indeed, since 1986, the Tactical Aviation community has generated over 30 Squadron-sized deployments of an average duration of six months.<sup>49</sup> This constitutes a

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<sup>49</sup> Since 1986, these rotations included eight OP CALUMET in Sinai; two for OP SULTAN in Central America; one in Somalia (OP DELIVRANCE); seven in Haiti (OP PIVOT; OP STANDARD; OP STABLE; OP CONSTABLE; OP HALO); 12 in Bosnia (OP CAVALIER; OP PALLADIUM); and two in Kosovo (OP KINETIC). It also participated in the recovery effort following Hurricane MITCH in Nicaragua. It is noteworthy that these deployment were shouldered by only three Regular-heavy

significant contribution, often made in lieu of more conventional deployments, thereby spreading the workload across a wider swath of CF units.<sup>50</sup> Currently, these are available in pre-packaged three, six and eight GRIFFON helicopters units, with one Squadron ready to deploy within 21- to 30-days notice, depending on the threat level. From traditional peace-keeping in the Sinai to more forceful mission like Op KINETIC in Kosovo, by way of very short notice mission such as OP HALO in Haiti which deployed in only 14 days, this presents a relevant and salient capability that has been used often to favourable effect. Moreover, it present a capability that is not readily available world-wide both from the political acceptability perspective of the belligerents and from the limited pool of nations having sufficient assets, technical resources and political will to undertake such tasks. It has been suggested several times that contracted service would be cheaper. This is recognised and has actually been done several times; however, due to the inherent risks to civilian personnel and equipment, these contracts tend to occur after the conflict situation has abated. Finally, the deployment of a Utility Squadron can often be accomplished with a fraction of the strategic airlift required of Army units. This characteristic and the innate mobility of the utility helicopter makes it a viable choice for mission such as DART support which has recently been mandated to become lighter and more deployable.<sup>51</sup>

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Squadrons, two Reserve-heavy Squadrons, one Operational Training Unit and individual augmentation from across the CF, mainly in the support trades. From the author's notes and Department of National Defence, VCDS / DDA Summary of Key CF Operations, n.d., obtained from LCol Sam Michaud, COS DDA, VCDS, NDHQ, 25 Nov 05.

<sup>50</sup> Ibid.

<sup>51</sup> International Policy Statement: A Role of Pride and Influence in the World – Defence, (Department of National Defence, Ottawa, ON, 2005), p. 15.

The DPS states that MSTF is to sustain deployment indefinitely with up to six medium- to heavy-helicopters. When considering the 3:1 or 4:1 ratio employed, let alone the other tasks such as SOF, SCTF, DOMOPS and Force Generation, it becomes obvious that it is a demanding mandate. Combining tasks amongst different users within a theatre will reduce the pressure in providing aviation support but there will still be a significant difficulty in securing enough TALC sorties. However, the American model of heliborne operations relies on complementary assets that are not organically available to the CF. This issue is not receiving the full attention it deserves. The US Army, the British RAF and the Royal Netherlands Air Force (RNLAF) have gained considerable experience in operating within the Three-Block War mission envelope. All of them ensure a measure of mutual support for their CHINOOK, either by providing dedicated AHs or by having a similar aircraft flying as a section. The latter method is onerous and, combined with a maintenance-intensive aircraft like the CHINOOK, compromised the sustainability of the RNLAF deployment in Afghanistan, weighting in their decision for an early withdrawal.<sup>52</sup> The RAF is using another type of aircraft to escort part of the way and provide observation and fire support over the Landing Zone.<sup>53</sup>

It is incongruous that the justification to procure the TALC stems from the desire to dispose of an autonomous capability, yet the correlated issue of mutual support and escort is glossed over by stating that it would be provided as a *coalition*

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<sup>52</sup> Department of National Defence, 3030-2-1 (DAR 9), Briefing Note for CAS – TALC Visit Report to Holland, 11 Jan 06, p. 3.

<sup>53</sup> LCol M. Bigaouette, DAR 9, correspondence with author, 23 Apr 06.

*dependency*.<sup>54</sup> Allies have indicated that their AH assets are fully committed and are not available for supplementary tasks.<sup>55</sup> The choice of failing to secure proper escort or, at the very least, provide landing zone reconnaissance and suppressive fire capability, is either to cancel the mission or to risk losing a large helicopter and all souls on board; clearly, neither choice is acceptable. Therefore, there is a definite need for both integral reconnaissance and fire support capability that can be provided by a balanced force structure.<sup>56</sup>

Incidentally, these Reconnaissance and Firepower requirements are nothing new to the CF. These are traditional tasks rooted in CF doctrine for a constant demand at the Brigade level;<sup>57</sup> a fact made especially important with the growing emphasis of the non-contiguous battlespace where units' flanks are always exposed to potential enemy action.<sup>58</sup> Such integral battlespace support is performed repeatedly by our allies;<sup>59</sup> however, the CF no longer has such means. Within the Army and Air Force circles, the otherwise modern CH146, as presently configured, acquired a reputation for being underpowered and ill-suited for most battlefield duties.<sup>60</sup> These comments might be

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<sup>54</sup> National Defence, *Statement of Operational Requirement - Tactical Aviation Lift Capability Project, Draft version 6.4*, dated 25 Oct 2005, p.12.

<sup>55</sup> Department of National Defence, 00001007-1000-16 (DAR 9), *TALC Recce To Holland 05-10 Dec 2005*, Jan 06, p. 7.

<sup>56</sup> Department of National Defence, 3030-2-1 (DAR 9), Briefing Note for CAS – TALC Visit Report to Holland, 11 Jan 06, p. 3.

<sup>57</sup> BGA-440-000/AF-000. *Tactical Helicopter in Operations*, p 1-3, 11-13.

<sup>58</sup> Department of National Defence, *Capability Development Record, Tactical Aviation, 04002 (DAD/ COS AVN)*, DGLCD, 11 Nov 2004, amended 22 Sep 2005, Annex A, p. 11.

<sup>59</sup> Brig Lain Thompson, Brig, Comd UK Army Air Corps, quoted in *Bring on Future Lynx*, Defence Helicopter, Feb/Mar 2006, p 18.

<sup>60</sup> Maj Danny Houde, *The CH146: An Armed Helicopter for the Canadian Army*, (The Army Doctrine and Training Bulletin, Winter 2000/Spring 2001, Vol 4, No 1), 37

warranted for the air mobility role as its performances are not in the same category as a BLACKHAWK helicopter. But, for the observation role, it has a definite potential that, through a series of budgetary decisions, has never been realized. The lack of a comprehensive sensor suite to fulfill its tasks of Reconnaissance and Firepower adjustment would lessen the flight regime limitations. While the original statement of requirements spelled out the tasks and equipment fitment to conduct such functions to complement the aircraft, the pivotal Electronic Reconnaissance, Surveillance and Target Acquisition (ERSTA) package was removed from the CFUTTH Project to allow project close-out.<sup>61</sup>

The end-result was an incomplete weapon system, falling short of its potential where it would have made one of its most significant and sustained contribution to an Army formation. The project was revived under the stand-alone ERSTA Project which was also cut, leaving the Army without an aerial reconnaissance platform to complete its upcoming COYOTE vehicle and severely handicapping the aircraft for its intended role.<sup>62</sup> In response to sustained requirement, this second attempt to correct this deficiency met a similar fate. The enduring nature of the reconnaissance requirement remains obvious in that a recent Army Capability Deficiency Record was raised yet again to provide such capability and is being handled by the Air Staff under the new title of TARTAN; however, funding remains elusive. The prospect of a GRIFFON mid-life update, while

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<sup>61</sup> Department of National Defence, *2517 Canadian Forces Utility Tactical Transport Helicopter: Minutes of Senior Review Board of 04 Dec 2003*, (Ottawa: DND Canada), 31 Dec 2003, p. 6-7.

<sup>62</sup> Department of National Defence, *2517 Canadian Forces Utility Tactical Transport Helicopter: Minutes of Senior Review Board of 04 Dec 2003*, (Ottawa: DND Canada), 31 Dec 2003, p. 6-7.

relevant and promising, is far from certain as it is hampered by lack of funding as well as aircraft re-design requirements.

Eventually, to make up for its dearth of dedicated air surveillance assets, the Army ordered the SPERWER Tactical Uninhabited Air Vehicle. The procurement and fielding was accelerated for the deployment OP ATHENA Roto 0, further highlighting the chronic surveillance gap. While the technical results of this Urgent Operational Requirement Project were plagued by a lack of adequate training, marginal technical and logistical support and basic design shortfalls; its tactical contribution was most significant, thus, confirming the Army's sustained requirement for dedicated, predictable and reliable form of aerial observation and surveillance.<sup>63</sup> SPERWER and other UAVs are currently in expanding use by the Army; however, as recognized by their British peers, it is a complementary solution to the Reconnaissance and Surveillance requirements. Indeed, there is still much need for a human-in-loop, where situational awareness and peripheral vision can make a decisive difference in the outcome of a battle.<sup>64</sup> Moreover, because of its size and marginal performances, the SPERWER is incapable of carrying ordinance, limiting its firepower to artillery fire adjustment if in line of sight and within range of the guns; an available yet incomplete solution to the problem at hand.<sup>65</sup>

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<sup>63</sup> Department of National Defence, TUAV CONOP, Oct 2003.

<sup>64</sup> Brig Lain Thompson, Brig, Comd UK Army Air Corps, quoted in *Bring on Future Lynx*, Defence Helicopter, Feb/Mar 2006, p 16.

<sup>65</sup> From author's own experience as G3 TUAV, KMNB HQ, Op ATHENA Roto 1 and 1 Wing HQ TUAV Master Implementation OPI.

Therefore, it is now evident that the TALC will provide an exceptional performance in support of the MSTF. But, it will require a complementary system to provide reliable Reconnaissance and Firepower support. To omit this capability is to unduly expose to attack the crew and troops flying onboard.

**I have flown in just about everything,  
with all kinds of pilots in all parts of the world ...  
and there wasn't a dime worth of difference  
between any of them except for one unchanging fact:  
the best, most skilful pilot had the most experience.**

**- Charles E. (Chuck) Yeager,  
BGen, USAF, Ret'd**

#### **The Force Generation & Force Employment Gap.**

The DPS specifies that the MSTF is to be sustainable indefinitely. The addition of a SOF role to the TALC will increase their training requirements and their OP Tempo. Due to the sensitive nature of SOF activities, this paper will limit its comments to general Force Generation issues that are nonetheless important in the discussion of maintaining a Tactical Aviation larger than the 16 MTH and 24 GRIFFON mentioned earlier.

Overall, the SOF crews requires training and currency in both quantitative and qualitative terms that are higher than regular tactical crews. This Force Generation issue magnifies the requirements for the qualitative performance from the crews involved. To fulfill their demanding mandate, the training and currency ought to be comprehensive, intense and sustained. The entry level is high and in most cases, from the experience of this author, is seldom reached by a newly graduated crew member. Thus, a maturing



period is required. The actual task is equally demanding, requiring concentration as well as imposing significant personal cost in terms of family life and personal tempo. Both the entry level experience and the sustained tempo considerations requires a Force Generation strategy that allows for an adequate skills-maturing period for the new entry and a restoration period for those serving.

The residual Tactical Aviation fleet being considered by NDHQ adversely curtails both. It will adversely impose too great a skill demands on new crews members who do not have sufficient experience, with the risks of compromising the outcome of the mission. These missions are fraught with negative consequences for the nation and are commonly referred to as *No-Fail* missions. As the name implies, measures must be taken and priorities re-aligned to ensure the sustainability of this essential capability. There is no substitute to experience; experience needs time and opportunity. At the same time, the lack of a crew retention strategy that would allows alternate types of duties will wear down personnel over time, leading them to seek employment elsewhere, causing more loss of experience within the fleet. Rotation rates in the order of 3:1 or 4:1, similar to those used by other deployable units, have proven their value and need to be considered to resolve this Force Generation / Force Employment quandary.<sup>66</sup> This issue is compounded by the DPS statement that TALC will also participate in SOF operations abroad, further raising the tempo for that limited pool of available individuals.

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<sup>66</sup> Department of National Defence, Direction General Air Force Development, The Aerospace Capability Framework, 1<sup>st</sup> Edition, 2003, p. 25.

Constraints spelled out by the CDS in his Directive to Level 1 Commanders, indicates that nothing is immutable in that "...Option analysis must not be limited to any current structure."<sup>67</sup> Thus, Tactical Aviation resource reductions ought not to be taken as irreversible direction and the advent of TALC must entail a capability review for the maintenance, or the creation of complimentary Tactical Aviation capabilities. Therefore, after this examination of the Force Generation issue, it is clear that a deliberate and comprehensive Force Generation and Force Employment plan must be implemented. One of its essential elements will be to ensure the sustainability of a critical mass of qualified personnel. This cannot be achieved by the proposed cuts in the post-TALC construct.

## **CONCLUSION**

This paper set out to review the projected TALC requirements and acknowledged the significant benefits this new capability will bring to operations. Upon further examination, it reviewed the requirement-capability gap for the DPS-mandated Domestic Operational functions. Using the Disaster Relief as a example of demanding requirements, it highlighted that the TALC, despite f its many benefits, would not suffice by itself to provide an adequate response to this situation by being limited by its small number of helicopter unable to service multiple targets in a short period of time. A parallel was made with other similar large scale events such as the G-8 Summit or the upcoming 2010 Olympics. Thus, the geographical imperatives is clearly paramount in the timely reaction DOMOPS situations and indicates that complementary platforms are

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<sup>67</sup> Department of National Defence, *CDS Planning Guidance – CF Transformation*, 18 Oct 2005.

warranted. A similar examination for the Expeditionary functions was made, concentrating on the MSTF. Again, it highlighted the constant requirement for a Reconnaissance, Command & Liaison and Utility tasks capability to both provide the required level of support to the Army and to ensure a degree of protection, through Reconnaissance and Firepower support to the vulnerable TALC helicopter. The paper then demonstrated that the Force Generation and Force Employment requirements are paramount to ensure a sustainable tactical aviation capability by allowing skills maturation and preserving a critical mass of trained personnel to sustain the overall tactical aviation tasks. Finally, it concluded that Canada's security in the Post-9/11 world will be greatly handicapped by relying solely on the currently envisaged Tactical Aviation Lift Capability and that it must be complemented by more numerous, complementary systems to fully realize its aim of providing decisive action in supporting of the DPS. Therefore, after examination of the TALC Requirement, the paper recognizes its *bone fide* requirement; however, the consequent resources limitations, as contemplated by the VCDS, while fiscally prudent, will result in a significant degradation in the overall Tactical Aviation capability.

Whether the reconnaissance and firepower solution rests with a brand new aircraft type, or with a modified CH146 with ERSTA-type suite and some form of Precision Guided Munitions is left for the Air and Army staff to assess the respective merits. Given the still precarious funding and the large number of CF capabilities in need of renewal, a new fleet is rather doubtful as it would add to the expensive overhead of one more fleet to manage. Insofar as an adequate fleet size is concerned, no actual numbers

are proposed here, but it ought to be sufficiently large to satisfy both the DOMOPS and Expeditionary requirements. Such capability ought to be equally sustainable and can be advantageously raised in rotation from those that would be available for DOMOPS. Indeed, the two requirements are naturally and mutually supportive. Therefore, this paper concludes that a legitimate requirement exist to provide a sufficiently robust Tactical Aviation organization that meet both the stated and *implied* DSP tasks, while providing a sustainable depth for the Tactical Aviation Lift Capability to deliver its fullest potential.

**“Air power is not made up of airplanes alone. Air power is a composite of airplanes, air crews, maintenance crews, air bases, air supply, and sufficient replacements in both planes and crews to maintain a constant fighting strength...”<sup>68</sup>**

**- General Hap Arnold,  
Commander US Army Air Corp, 1939 - 1945**

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<sup>68</sup> United States, USAF, *Air Force Basic Doctrine*, Air Force Doctrine Document 1, 17 Nov 2003, p. 73.

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