

## Archived Content

Information identified as archived on the Web is for reference, research or record-keeping purposes. It has not been altered or updated after the date of archiving. Web pages that are archived on the Web are not subject to the Government of Canada Web Standards.

As per the [Communications Policy of the Government of Canada](#), you can request alternate formats on the "[Contact Us](#)" page.

## Information archivée dans le Web

Information archivée dans le Web à des fins de consultation, de recherche ou de tenue de documents. Cette dernière n'a aucunement été modifiée ni mise à jour depuis sa date de mise en archive. Les pages archivées dans le Web ne sont pas assujetties aux normes qui s'appliquent aux sites Web du gouvernement du Canada.

Conformément à la [Politique de communication du gouvernement du Canada](#), vous pouvez demander de recevoir cette information dans tout autre format de rechange à la page « [Contactez-nous](#) ».

CANADIAN FORCES COLLEGE / COLLÈGE DES FORCES CANADIENNES  
JCSP 33 / CCEM 33

EXERCISE/EXERCICE NEW HORIZONS

**PERSONNEL RECOVERY FOR LOW AND MEDIUM THREAT OPERATIONS:  
A REQUIRED CAPABILITY FOR THE CANADIAN FORCES**

By /par

Major Brian F. Newman

*This paper was written by a student attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions, which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.*

*La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale.*

## **ABSTRACT**

The Canadian Forces have referred to Combat Search and Rescue, now termed Personnel Recovery operations, within the various doctrine and procedures manuals for many years but have not made any advancements in making this role a combat capability. With the frequent deployments into low and medium threat theatres of operations and the increased risk of personnel being isolated or capture has the time now come when the Canadian Forces must now make Personnel Recovery an integral role for deployments. This paper will look at a brief history of Personnel Recovery and discuss the importance of this role in operations. It contends that with the modernizing and purchase of new equipment and capabilities the Canadian Forces will be able to fulfil Personnel Recovery operations in low and medium threat theatres as part of a coalition once these resources become operational.

# **PERSONNEL RECOVERY FOR LOW AND MEDIUM THREAT OPERATIONS: A REQUIRED CAPABILITY FOR THE CANADIAN FORCES**

## **INTRODUCTION**

The Canadian Forces, the Air Force in particular, has been directed to resource a significant level of assets to provide search and rescue for domestic requirements. Currently there are five search and rescue squadrons across Canada, each with specially trained personnel utilizing specifically configured fixed- and rotary-wing aircraft. In addition, all other helicopter, transport, and maritime patrol squadrons, totaling eleven in all, provide search and rescue as a secondary or tertiary role. A search and rescue mission can last a week or more and involve a dozen or more military aircraft and a hundred or more air force personnel. Except for the three Combat Support Squadrons whose primary role is in support of the military aircraft operating from their bases, the predominant beneficiary of this capability is the civilian community. In contrast to this, Canada provides no search and rescue or recovery capability to expeditionary land or air forces even though this capability, as with the domestic search and rescue, is identified in both strategic and operational level doctrine.<sup>1 2</sup>

Since the end of the Cold War, the Canadian Forces' deployments have moved away from the less benign peacekeeping operations of the late-1970's and 1980's. More and more deployments have been to low to medium intensity conflict areas such as: Gulf War I ('91) which saw CF18s deployed; Somalia ('92-'93) had land forces, tactical aviation and maritime helicopters deployed in support; Bosnia ('93-'99) had land forces with tactical aviation support; Kosovo ('99-'01) saw land forces, SOF forces, tactical aviation, and CF18s deployed; currently,

---

<sup>1</sup> Department of National Defence, B-GA-400-000/FP-000 *Canadian Forces Aerospace Doctrine* (Ottawa: DND Canada, 2006), 46

Afghanistan ('02 – present) has land forces, SOF forces, and tactical aviation UAVs in theatre; and in all cases tactical fixed-wing transports supporting the operation have had to fly into theatre with the threat of engagement from belligerent air defence weapons. What is significant about these operations is that in all cases one or more belligerents had or has the potential, will, and capability to project force against our Forces and in doing so expose our personnel to the risk of shoot downs, capture, or isolation from friendly forces. In what had been traditionally termed Combat Search and Rescue (CSAR), the Canadian military has not been capable of deploying search and rescue assets that would have been able to accomplish even a lightly opposed recovery of personnel. In each of the above operations Canada has depended on or still depends on coalition forces for personnel recovery because it does not have the capacity to conduct the task.

As responses to global security threats change to countering terrorist activities, counter-insurgency (COIN) operations, and threats from failed and failing states, low and mid-intensity deployments like those mentioned above are expected to continue in the foreseeable future to such areas as east-central Africa like Eritrea, Ethiopia, Somalia, and Sudan as examples. With this change, is it time for Canada to review our CSAR and Personnel Recovery (PR) capability? Does the Canadian Forces have the capacity to conduct CSAR/PR operations or should it continue to be a coalition dependency? This paper will discuss what is CSAR/PR, why CSAR/PR is important, who conducts it today and how, and finally, what capabilities are needed to carry out the role and how this is reflected through current and future equipment purchases and upgrades. It is my contention that the current upgrade in the CF18 and Aurora aircraft, the forecast purchase of new tactical medium or heavy lift helicopters and the planned upgrading of

---

<sup>2</sup> Department of National Defence, B-GA-441-001/FP-001 *Tactical Level Aviation Doctrine* (Ottawa: DND Canada, 2000), 21-1

existing helicopters, when combined with the standup of the Canadian Special Operations Command and the Canadian Special Operations Regiment, will provide the Canadian Forces with the capability to conduct CSAR and PR operations in low and mid-intensity threats.

## **BACKGROUND**

### **WHAT IS CSAR/PR**

Combat Search and Rescue (CSAR), has been around in the United States military since the Vietnam War. Originally its purpose was the recovery of downed pilots but in recent years it has expanded to include recovering any isolated military person. The US Joint Pub 3-50.21 defines CSAR as “. . . reporting, locating, identifying, recovering, and returning isolated personnel to the control of friendly forces in the face of actual or potential resistance.”<sup>3</sup> It is defined in Canadian doctrine as “the detection, location, identification, and rescue of *downed aircrew* in hostile territory, in crisis and in war, and *when appropriate, isolated military personnel* in distress, who are trained and equipped to receive CSAR support . . .”<sup>4</sup> (emphasis added). Unlike civilian search and rescue (SAR), PR missions are generally conducted within a hostile environment. CSAR recovery requires special pre-deployment training for the person being recovered, requiring them to facilitate their locating, rescue and recovery through escape and evasion, and survival techniques. Personnel Recovery operations (PR) on the other hand are defined by the Air Standardization Coordinating Committee, of which Canada is a member, as:

. . . the umbrella term for operations that are focused on the task of recovering captured, missing, or isolated personnel from harm’s way. PR includes, but is not limited to, theater search and rescue; combat search and rescue; search and rescue; survival, evasion,

---

<sup>3</sup> United States, Department of Defense, Joint Pub 3-50.21 – *Joint Tactics, Techniques, and Procedures for Combat Search and Rescue*, (Washington, DC, 23 March 1998), I-1

resistance, and escape; evasion and escape; and the coordination of negotiated as well as forcible recovery options.<sup>5</sup>

This definition is more general in nature and refers to all military personnel recovery operations within the full spectrum from non-hostile SAR to the higher risk CSAR mission. Due to the general nature of this definition, and because it is becoming a more common term when referring such missions, Personnel Recovery (PR) will be the term used throughout this paper and will include CSAR. The term CSAR will be specifically used when the need is required to differentiate between the two missions.

In addition to defining PR, it must be clear what is referred to as low, medium and high threat recovery operations:

**Low Threat.** This operating environment **contains highly dispersed, thinly concentrated enemy forces and assets.** Their ability to reconstitute is limited. Weapon systems typically include small arms, light optically-aimed antiaircraft artillery (AAA), up to 0.50 caliber and/or 14.5mm equivalent weaponry, and man-portable infrared (IR) surface-to-air missiles (SAMs). Tactics and techniques employed by friendly forces do not normally require extraordinary planning measures prior to launch, and the environment permits operations using passive countermeasures taken to avoid detection and engagement by enemy forces.

**Medium Threat.** This operating environment contains **significant threats;** the concentration and types of enemy weapons employed normally require both **passive and active measures to avoid or degrade the** threats and prevent subsequent engagement. Weapons systems typically include low-threat systems, early generation SAMs, warning systems, and aircraft without look-down and/or shoot-down capability. CSAR forces should expect to conduct extensive planning and employ threat avoidance tactics and evasive techniques, onboard countermeasure and defensive suppression systems, or external threat suppression or force protection aircraft . . . to preclude lethal engagement. Limited radar or electro-optical acquisition and engagement capability at medium ranges may exist, but air defense systems are not fully integrated.

---

<sup>5</sup> Air Standardization Coordinating Committee, AIR STANDARD 45/25 *Tactics, Techniques, and Procedures for Combat Search and Rescue*, 25 February 2003, [www.airstandards.com](http://www.airstandards.com); Internet; accessed 2 February 2007, A-7-6

**High Threat.** The operating environment presents **hostile forces over a wide area of coverage, densely concentrated, and capable of rapid reconstitution and mobility.** Enemy weaponry includes advanced or late generation SAMs, modern ground-based radars, early warning systems, electronic counter-countermeasures, integrated AAA, and aircraft with look-down and/or shoot-down capabilities. High threat environments are characterized by fully integrated air defense systems and C2 networks, as well as EW capabilities. Use of a conventional CSARTF for high threat operations requires extensive and detailed planning, and large force protection packages are necessary to conduct these operations. Because of this large force requirement, the JSRC should also pursue other PR means in high-threat environments.<sup>6</sup>

This paper will focus on Canada's ability to provide PR within future low and medium threat environments.

## WHY CANADA HAS NOT DONE PR OPERATIONS

Canadian Forces doctrine and publications have and still do refer to PR operations. For example, the Canadian Forces Aerospace Doctrine states, "In times of conflict or war, air forces may also conduct Personnel Recovery (PR) mission . . ." <sup>7</sup> Other documents that reference PR include: Canadian Joint Task List v1.4, Canadian Forces in Operations, all the Tactical Aviation doctrine, Search and Rescue Operational Doctrine, and more recently, the 2006 Canadian Forces Combat Helicopter Force Structure Study. Even though they mention PR, it is only in the Tactical Aviation documents that it is explained that the CANADIAN FORCES is unable to fulfill this role. There are various reasons why the Canadian Forces has not invested in developing its own PR capability. The focus of the Canadian Forces in the Cold War was NATO and fighting World War III against the Warsaw Pact forces. In this conflict, the emphasis was total war and offensive action and as such the manning and equipping of forces was focused on equipment purchases for NATO requirements. Because the budget to the Canadian Forces was

---

<sup>6</sup> Air Standardization Coordinating Committee, AIR STANDARD 45/25 *Tactics, Techniques, and Procedures* . . . , A-20

<sup>7</sup> Department of National Defence, B-GA-400-000/FP-000 *Canadian Forces Aerospace Doctrine* (Ottawa: DND Canada, 2006), 46



only large enough to maintain our minimum requirements, providing resources to roles such as PR was not considered critical for success since they did not directly support the doctrine of the time. For a country like Canada with a limited budget and limited resources to provide to the alliance, PR was a luxury that we could not afford. Additionally, the actual deployments being carried out were predominantly peacekeeping operations (Cyprus, Sinai, and Central America) and were far from the intensity that required PR assets or consideration. Although locations like Cyprus did see some degree of combat operations early in the mission, the mandate of the missions and the general threat to ground forces was low and the sides of the conflicts were less belligerent than they have been since 1990.

Since the end of the Cold War the absence of the PR role within our capability, even though it was mentioned in various policy documents and doctrine, can be attributed to different reasoning. Even though the level of risk of the missions has increased, the budgetary constraints were severe, resulting in the retiring of capabilities in the form of aircraft like the triple helicopter fleet of the Kiowa, Twin Huey and Chinook and attack aircraft like the CF-5. There has been a further erosion of capability with the disbanding of land force units like the Airborne Regiment that would have been able to support the specialized ground support role of PR missions. When combined with the reduction of the regular standing force the addition of such a specialized role to the Canadian Forces' missions would not have been supportable. The specialized capability required for the PR role (i.e. UAVs, airborne C2 platforms, specialized munitions for the CF18, and a helicopter capable for armed escort and lift) were not present in the Canadian Forces inventory and were not expected to be within the near- or mid-term future. Therefore, the absence of PR as an active role for the Canadian Forces could be logically supported due to the lack of manpower, resources, budget and differing mission focus.

## ANALYSIS

### WHY IS PR IMPORTANT TO OPERATIONS

As described above, the budgetary, manpower and resource costs associated with the PR role are high for any military involved. With such high costs, why are PR operations important not only to the military viewpoint, but also the governmental and public view? As an example of the importance some countries place on PR, it is now a matter of policy that the United States never deploys military forces anywhere in the world without providing a capability to rescue or recover personnel who may become isolated or captured in enemy territory or by enemy forces in any territory in a non-linear battlefield environment.<sup>8</sup> To the United States, PR is part of warfighting and as such is part of the commander's planning process. In Canadian doctrine this is similarly stated in Tactical Aviation Doctrine, where although it states we do not carry out PR missions it does say, "Combat experience has demonstrated the importance of commanders at all levels to plan for combat search and rescue [PR] of downed pilots."<sup>9</sup> *Air Standard 45/25 - Tactics, Techniques, and Procedures for Combat Search and Rescue*, has more expansive reasoning for the importance of PR capability within theatre, "... successful CSAR operations enhance a JFC capabilities by returning valuable resources to friendly control, by denying adversaries opportunity to exploit the intelligence and propaganda value of captured personnel, and by maintaining force morale."<sup>10</sup> These considerations are not all equal in the justification for having PR capability or launching a PR mission.

---

<sup>8</sup> Whitcomb, Darrel Colonel (USAFR, Retired), "Rescue Operations in the Second Gulf War," *Air and Space Power Journal* (Spring 2005), [www.airpower.maxwell.af.mil/airchronicles/apj/apj05/spr05/whitcomb.html](http://www.airpower.maxwell.af.mil/airchronicles/apj/apj05/spr05/whitcomb.html); Internet; accessed 2 February 2007

<sup>9</sup> Department of National Defence, B-GA-441-001/FP-001 *Tactical Level Aviation Doctrine* (Ottawa: DND Canada, 2000), 12-1

<sup>10</sup> Air Standardization Coordinating Committee, AIR STANDARD 45/25 *Tactics, Techniques, and Procedures* . . . , A-3

Least significant of these is the denial of intelligence to the enemy. The capture of a pilot or soldier will not result in the cancellation or major re-working of an operation. During Gulf War I & II, Bosnia, or Kosovo where PR operations have been mounted, no indication was made that the recovery operation was based on intelligence requirements but instead it was justified for one or more of the other factors mentioned.

With the current reduction in the sizes of militaries the returning of valuable resources to friendly control is valid reasoning for a commander. Unlike the case for past conflicts like Korea, World War II or even the intervening peacekeeping missions of the 1960 – 1980's, the cost in dollars and manpower to train personnel to operationally ready in the current high technology battlefield, whether it is army, air force, or navy, is incredible and the ability to replace a person quickly is nearly impossible. The Canadian Forces Leadership doctrine summarizes an individual's importance as, “. . . personnel attrition represents a loss of training and developmental investments, unnecessary replacement costs, and a reduction in effectiveness through the loss of accumulated knowledge, skills, and experience.”<sup>11</sup> In addition, with the focus on smaller, more agile forces and having better educated personnel, the loss of one or a few personnel can equate to the loss of significant experience and capability within the unit and therefore one that is no longer available to the commander. Additionally, with increased reliance on Special Operation Forces, which in practice are small and very highly trained, the factors and impacts stated above are more relevant. The loss of even one person in a SOF section is significant.

---

<sup>11</sup> Department of National Defence, A-PA-005-000/AP-004 *Leadership in the Canadian Forces: Conceptual Foundations* (Canadian Defence Academy – Canadian Forces Leadership Institute, 2005), 20

The propaganda impact of having military personnel falling into enemy hands is more and more becoming a centre of gravity for national support of an operation. Tilford in his book *Search and Rescue in Southeast Asia, 1961-1975*, states “. . . [captured] military aircrew have never been such a valuable commodity, and of late become something of a political football to be bargained with.”<sup>12</sup> Of course today this includes not just aircrew but soldiers, sailors, diplomats, and NGOs. Depending on the outcome of these captured personnel the incident can either harden resolution or cause political and public will to deteriorate. The dragging of dead troops through the streets of Mogadishu or the chaining of UN Peacekeepers to lamp posts in Bosnia had equal but opposite impacts on public support for their respective operations. In the case of the Somalia mission, it was a significant precipitator in the eventual pull out of the United States from that mission.<sup>13</sup> Sound PR doctrine and capabilities can minimize isolation and capture. Canada in particular is becoming more sensitized to the loss of military personnel on operations, as is reflected in the current Afghanistan operation. The preventable loss or capture of military personnel could have significant political implications and public support for that or any operation. If this becomes the case, a commander is now faced with additional distractions outside of planning operations as he or she now has to increasingly focus on responding to countering this propaganda.

The final point associated with the Air Standards quote, and the one that is most likely the key for the military justification for PR, is the morale issue. Morale, as a Principle of War, is identified in the Canadian Forces Aerospace Doctrine as, “the most important element in

---

<sup>12</sup> Tilford, Earl H., *Search and Rescue in Southeast Asia, 1961-1975* (Washington, D.C.: Office Of Air Force History United States Air Force, 1980), 145

<sup>13</sup> Ireton, Colin Major (USAF), “Neglected Air Force Combat Missions,” *Air and Space Power Journal* (Summer 2003), [www.airpower.maxwell.af.mil/airchronicles/apj/apj03/sum03/ireton.html](http://www.airpower.maxwell.af.mil/airchronicles/apj/apj03/sum03/ireton.html); Internet; accessed 2 February 2007

ensuring cohesion and the will to win.”<sup>14</sup> Morale is a major force multiplier to any commander, and a military whose personnel have lost their morale will provide a commander with a grave situation that can have major implication on successful mission accomplishment. While most military personnel realize that their life is less important than the whole of the mission or operation, they need to know that if they are isolated or shot down that if possible there will be some efforts to recover them. To abandon a military member when he or she could have been recovered if the assets were available would have a negative impact on unit or force morale. All one has to do to see the effect of morale is consider the interest in the recovery of Captain Scott O’Grady in Bosnia in 1995, the search for the French Mirage pilots the same year and the recovery of Private Lynch and her six fellow soldiers in Iraq in 2003. These three events brought to the forefront the importance of recovering personnel. Tilford states this clearly “. . . from the earliest days of aerial combat the men who fly and fight performed their duties more efficiently knowing that every effort would be made to rescue them if they were shot down”<sup>15</sup> The mantra of many militaries and personnel, “never leave a man behind” is a cornerstone of the professional military and from this grows the unit cohesion. PR operations answer to this belief.

Aside from the morale of the military personnel, one must also consider the morale of the national population. While this is not a factor for the operational commander, it is important for the strategic commander and the government. How many casualties a public is willing to accept can depend on many factors. Whitcomb presents this when he stated that when national existence or survival is at stake, as occurred in the World Wars, the public and the government are willing to pay a higher price in casualties than during a limited conflict where they are

---

<sup>14</sup> Department of National Defence, B-GA-400-000/FP-000 *Canadian Forces Aerospace Doctrine* (Ottawa: DND Canada, 2006, 26

<sup>15</sup> Tilford, Earl H., *Search and Rescue in Southeast Asia*, . . . , 3

willing to pay only a limited price. In short he states “[the] public measures the cost of a conflict in terms of risks to the lives of its sons and daughters.”<sup>16</sup> Since the end of the Cold War, the conflicts that Canada and other Western and NATO countries have been involved in have been reflective of these limited conflicts. PR may be limited in total conflict, “but not so in limited engagements, in which we prepare ourselves to pay only a limited price to achieve a limited [national] objective . . . the public has little tolerance for loss.”<sup>17</sup> The Canadian public too is becoming more interested in the affairs of the Canadian Forces. This can be attributed in part to:

. . . public concern about the internal management of the CF [resulting] in closer scrutiny of its functions . . . [furthermore] the success of CF units and contingents on assignments, and the costs in lives and distress associated with such operations have elicited considerable public appreciation and support.<sup>18</sup>

This appreciation and support though could evaporate if a loss or capture was preventable had integrated PR been available. The requirement and importance then, of the Canadian Forces developing a PR capability to support the conflicts they are engaged in will resonate with this closer scrutiny and make the decision to invest in the role more a factor of the public’s perceived need than commander’s identified operational needs.

The final consideration for the potential need for a PR capability is the political and military Leadership’s responsibility to members of the Canadian Forces being put in harms way. The Canadian Forces Leadership Manual considers that a member’s well-being and commitment to be one of the four aspects that make our military effective. Within this aspect the manual states:

---

<sup>16</sup> Whitcomb, Darrel Colonel (USAFR, Retired), “Combat Search and Rescue – A Longer Look” *Air and Space Power Journal* (Summer 2000), [www.airpower.maxwell.af.mil/airchronicles/apjoo/sum00/whitcomb.pdf](http://www.airpower.maxwell.af.mil/airchronicles/apjoo/sum00/whitcomb.pdf); Internet; accessed 2 February 2007

<sup>17</sup> *ibid*

<sup>18</sup> Department of National Defence, A-PA-005-000/AP-004 *Leadership in the Canadian Forces: . . .*, xv

CF leaders have a moral responsibility to take good care of service members. Because of the legal authority of commanders to compel members to perform lawful duties, leaders incur a weighty ethical obligation to reciprocate such member liability and the associated personal costs of military service. [One] of these costs includes . . . the risks and dire consequences of hazardous duty and being placed in harm's way.<sup>19</sup>

The manual maintains there must be a balance between the accomplishment of the mission and the members well being. But while it is the responsibility for military members to perform their duties, “. . . it is both unreasonable and imprudent to expect them to perform supererogatory (beyond the call of duty) acts for any and every operational rationale.”<sup>20</sup> By not supplying Canadian personnel with at least partial recovery capability and instead depending on coalition willingness for the service, the Canadian Forces is not supporting the member as intended within this doctrine. This responsibility is also that of the government's when considering the resources required for the Canadian Forces to fulfill these higher risk commitments.

## **RESOURCES REQUIRED**

PR is a unique mission that requires both specialized equipment and training for the units carrying out the recovery. PR started in World War II with the recovery of downed Allied aircrew in the English Channel and was carried out in relatively benign environment by the Royal Air Force Air-Sea Rescue Organization. The United States conducted similar missions and expanded into the Pacific Theatre to meet unique requirements of that theatre. In Vietnam the Aerospace Rescue and Recovery Service improved rescue and recovery techniques and recovered over 3,883 personnel over the duration of the conflict.<sup>21</sup> The assets used in Vietnam included helicopters for the extraction, observation aircraft, and fighter-bombers/ground attack

---

<sup>19</sup> *ibid*, 20

<sup>20</sup> Department of National Defence, A-PA-005-000/AP-004 *Leadership in the Canadian Forces*: . . ., 24

<sup>21</sup> Tilford, Earl H., *Search and Rescue in Southeast Asia*, . . ., 3

aircraft for defensive and suppressive support. In some instances, fixed-wing aircraft were utilized when airstrips were available. Although many missions were successful, they were also very risky and costly due to poor planning and training on the part of both the survivors and recovery personnel due mainly to the lack of detailed doctrine to direct and guide recovery operations.

Currently, countries that carry out the full range of PR missions have well established doctrine and practices with correspondingly well equipped and trained units and personnel. A PR mission in a low threat area where the survivor's location is known or where stealth is needed can be carried out with a single aircraft, generally a helicopter, and no other support assets. For more complex situations within the medium to high threat environment there may be the requirement to form a task force that are properly trained, organized and equipped for medium- to high- threat recoveries. These missions would include multi-ship operations requiring two or more extraction helicopters, along with all or some of the following capabilities:

- escort aircraft (fighters or armed/attack helicopters) to protect the lift helicopters predominantly from ground fire while enroute to the extraction and/or over the pick-up area;
  - fighter aircraft to provide combat air patrol if a significant air threat is present;
  - reconnaissance (manned or UAV) to provide threat warning and personnel location over the extraction point or search area,;
  - C2 platform(s) (fixed or rotary wing) to provide mission command and coordination between the isolated person(s) and of all assets within the task force; and/or
  - surveillance aircraft (AWACS or equivalent) to provide airspace control and if trained, to act as higher command and control.
-



The force package depends on the threat, time available to plan, knowledge of the survivor's location, and most of all, the risk the Task Force Commander is willing to accept. In addition to the equipment requirements, there are costs in specialized training for the aircrew and the ground recovery team:

- helicopter crews must be trained in proper tactical flying to avoid detection, air search techniques, survival techniques used by the isolated person(s) and coordination with escort aircraft and support assets;
- escort aircraft, both fixed- and rotary-wing need to understand how to protect the lift helicopters plus secure and protect the pick-up area and provide assistance to the survivor;
- the recovery personnel, those ground troops who exit the helicopter to search and/or recover the distressed person(s) have special procedures plus the training to extract under fire and provide medical assistance if required;
- a properly trained On-Scene Commander in the C2 aircraft, surveillance aircraft, or the fighter, who knows how to plan and synchronize all assets effectively and efficiently to safely conduct the operation; and finally
- a trained Rescue Coordination planning team who are knowledgeable in the intricate aspect of assessing, planning and mounting a PR operation.

This training is costly in time, exercises, and resources for all to become proficient so PR missions do not unduly risk isolating additional personnel. Therefore operations cannot be conducted in an *ad hoc* manner. As stated in the USAF Personnel Recovery Operations document, “[PR] success is rooted in comprehensive education and rigorous training of

commanders and their staff, PRO forces, and isolated personnel.”<sup>22</sup> Because Canadian Forces’ missions have and will continue to be coalition/multi-national, units and personnel would have to train regularly with other nations to ensure compatible. The United States Air Force Personnel Recovery Operations document also emphasizes this multi-national training need:

The Air Force PRO construct is part of a greater PR concept; Airmen need to work closely with joint and Coalition partners to recover any isolated personnel from hostile or uncertain environments and denied areas. Therefore, joint and combined training can enable interoperability and improved integration between [USAF] Air Force PRO forces and their joint/combined partners.<sup>23</sup>

The assets and training nTdbh-17.38 rKer P(1)]TJ0.0008 Tc -0.0015 Tw948.85 0 Tdrolnue to bearrenie j

personnel for this role in the face of shrinking military budgets and force personnel, few countries are able to equip their military with designated PR units. Most countries therefore, dual role units with the result they are unable to properly conduct PR operations in mid- to high-intensity conflicts.<sup>24</sup> To overcome this capability limitation NATO has developed PR doctrine with the objective of forming a multi-national alliance capability that will spread the high costs across many countries.<sup>25</sup>

### **CANADIAN FORCES FUTURE PR CAPABILITY**

The current transformation and equipment upgrade and modernization that is taking place is providing the Canadian forces with many of the resources and capabilities required to conduct the PR role in the future. These capabilities are mainly within the Air Force resources but also include the vital assets from the land component and in particular those of the Special Operations Command (CANSOFCOM). As mentioned earlier, the five capabilities required for PR operations are lift helicopters, escort aircraft, surveillance aircraft, C2 platform, and ground recovery teams.

The planned purchase of the Chinook helicopter will provide the lift requirement plus the range, speed, and AD countermeasures requirements and if armed, will provide self-defence capability to prosecute PR missions in at least a low threat environment. The escort requirement can be carried out with the current CF18 with the targeting pod and precision guided munitions delivery capability. A future plan to modify the Griffon with a reconnaissance suite and provide it with some additional weapons would provide some further escort capability for the lift

---

<sup>24</sup> Ripley, Tim, "Rotary Rescue" *Janes Defence Weekly*, August 26, 2006, <http://www8.janes.com/Search/documentView.do?docId=/content1>, Internet; accessed 2 April 2007

<sup>25</sup> Lake, Darren, "Lost and Found" *Janes Defence Weekly*, May 23, 2001, [www8.janes.com/Search/documentView.do?docId=/content1](http://www8.janes.com/Search/documentView.do?docId=/content1), Internet; accessed 2 February 2007

helicopter. Surveillance will be easily provided with the modernized Aurora which has the overland real-time provision of reconnaissance and surveillance information along with the improved communications equipment, although, the fact that AWACS will most likely be present in theatre, the Aurora would be an enabler to this platform rather than the sole provider. What the Aurora will be able to do is prove for the C2 platform and provision of mission command. Finally, the ground recovery assets will be present in the newly formed Special Operations Regiment (CSOR). The unique capabilities in advanced training, tactics and reconnaissance, along with their inherent flexibility makes special operations forces ideal for this final piece of the operation.

These modernizations will provide Canada with all the resources to actively and competently participate in with other allied countries in the provision of PR within the low to medium threat environment in the future. The annual hosting of the Maple Flag exercise in Cold Lake, our close ties with various US army, air force, and special operations units and routine bi-national training in both countries will allow the Canadian Forces to not only develop compatible doctrine, but practice it to the level required to maintain our proficiency. Furthermore, the variety of equipment improvements will allow Canada to also supply niche capabilities in theatre as required to ensure a multi-national force has more than a single country, the US, to provide a valuable combat role.

## **CONCLUSION**

Up until now the absence of the PR role within the Canadian Forces has been based on budgetary and equipment limitations and, during the Cold War era, a different focus on operational requirements. Since the dissolving of the Warsaw Pact threat this absence in capability has been equaled with a fair amount of luck in that during the preceding 16 years with

ever increasing deployments to higher threat theatres and operations we have not required the PR capability. The potential for deployments to Africa in the future and with the global terrorist threat continuing our luck will eventually run out and PR will be required by Canadian forces. The importance of the PR role has not matured as a combat capability at the same pace in Canada as it has in other countries. Its importance has also not kept up as our operational risks have increased and it will only take one incident to jeopardize the support of our already casualty sensitive Canadian public and media. The potential of military morale being negatively impacted for a preventable loss, injury or capture is also real. The Canadian Forces have the moral responsibility to provide the force protection equal to the risk, but we cannot continue to expect this protection to always be provided by coalition partners. The Canadian government is upgrading military resources and with it is the increase in capabilities to begin developing doctrine, tactics and techniques, and contributing to the PR role. The Aurora, CF188, and CSOR are currently fielded assets capable of participating in this role. The Chinook will be fielded in approximately 2011 with the ability to conduct PR operations if properly equipped, and a planned follow-on of an upgraded Battlefield Reconnaissance Utility Griffon with sensors and weapons will fulfill the capabilities required to participate in the PR role. The Canadian Forces' close relationship with the US military and the numerous opportunities to conduct combined training provides Canada with the capacity to develop sound and compatible doctrine. The personnel of the Canadian Forces deserve the protection of search and rescue that has been provided to the civilian population for years, it is now achievable and needs to be developed as the capability becomes operational, and not in reaction to an operational tragedy.

## **BIBLIOGRAPHY**

- Air Standardization Coordinating Committee. AIR STANDARD 45/20 *Combat Search and Rescue*, (22 November 1999.) Document on-line; [www.airstandards.com](http://www.airstandards.com); Internet; accessed 19 March 2007.
- Air Standardization Coordinating Committee. AIR STANDARD 45/25 *Tactics, Techniques, and Procedures for Combat Search and Rescue*, 25 February 2003. Document on-line; [www.airstandards.com](http://www.airstandards.com); Internet; accessed 2 February 2007.
- Braganca Eric Major (USAF). "The Joint Personnel. Recovery Coordination Center – The Next Step in Joint Integration." *Air and Space Power Journal* (Spring 2004). Journal on-line; [www.airpower.maxwell.af.mil/airchronicles/apj/apj04/spr04/braganca.html](http://www.airpower.maxwell.af.mil/airchronicles/apj/apj04/spr04/braganca.html); Internet; accessed 2 February 2007.
- Defense Industry Daily. *Canada's Auroras Getting Land Surveillance Capability.* 30 January 2007. Journal on-line; <http://www.defenseindustrydaily.com/2007/01/canadas-auroras-getting-land-surveillance-capabilities/index.php>; Internet; accessed 16 April 2007.
- Department of National Defence. A-PA-005-000/AP-004 *Leadership in the Canadian Forces: Conceptual Foundations*. Canadian Defence Academy – Canadian Forces Leadership Institute, 2005.
- Department of National Defence. B-GA-400-000/FP-000 *Canadian Forces Aerospace Doctrine* Ottawa: DND Canada, 2006.
- Department of National Defence. B-GA-441-001/FP-001 *Tactical Level Aviation Doctrine* Ottawa: DND Canada, 2000.
- Department of National Defence. B-GA-442-001/FP-001 *Tactical Aviation Tactics, Techniques and Procedures* Ottawa: DND Canada, 2000.
- Department of National Defence. B-GA-460-000/FP-001 *Search and Rescue Operational Doctrine* Ottawa: DND Canada, 1995.
- Department of National Defence. B-GJ-005-300/FP-000 *Canadian Forces Operations* Ottawa: DND Canada, 2005.
- Department of National Defence. *Canadian Forces Combat Helicopter Force Structure Study: Force Balance Analysis*. Ottawa: Directorate of Air Staff Operational Research, Chief of the Air Staff, 2006.
- Department of National Defence. *Canadian Joint Task List Version 1.4*. Ottawa: Vice Chief of Defence Staff – Defence Planning & Management, 2006; Publication on-line DIN; [http://vcds.dwan.dnd.ca/dgsp/pubs/rep-pub/dda/cjtl/cjtl14/intro\\_e.asp](http://vcds.dwan.dnd.ca/dgsp/pubs/rep-pub/dda/cjtl/cjtl14/intro_e.asp); Intranet accessed 7 March 2006.

Department of National Defence. SMM-2601(1) *Standard Manoeuvre Manual for Search and Rescue Operations*. Winnipeg . Publication on-line DIN;  
[http://trenton.mil.ca/TRSET/TRSET% Pubs; Intranet](http://trenton.mil.ca/TRSET/TRSET%20Pubs;Intranet); accessed 2 February 2007.

Evan, Andy. *Combat Search & Rescue*. London: Arms & Armour, 1999.

Gottlieb, Aryea Major (USAF). “The Role of SOF – Across the Range of Military Operations.” *Air and Space Power Journal – Chronicles Online Journal*. Journal on-line;  
[www.airpower.maxwell.af.mil/airchronicles/cc/sofpaper.html](http://www.airpower.maxwell.af.mil/airchronicles/cc/sofpaper.html); Internet; accessed 2 February 2007.

Ireton, Colin Major (USAF). “Neglected Air Force Combat Missions.” *Air and Space Power Journal* (Summer 2003). Journal on-line; [www.airpower.maxwell.af.mil/airchronicles/apj/apj03/sum03/ireton.html](http://www.airpower.maxwell.af.mil/airchronicles/apj/apj03/sum03/ireton.html); Internet; accessed 2 February 2007.

Lake, Darren, “Lost and Found.” *Janes Defence Weekly*, (May 23, 2001). Journal on-line:  
[http://www8.janes.com/Search/ documentView.do?docId=/content1](http://www8.janes.com/Search/documentView.do?docId=/content1), Internet; accessed 2 February 2007.

Ripley, Tim. “Rotary Rescue.” *Janes Defence Weekly*, (August 26, 2006). Journal on-line;  
[http://www8.janes.com/ Search/documentView.do?docId=/content1](http://www8.janes.com/Search/documentView.do?docId=/content1); Internet; accessed 2 April 2007.

Tilford, Earl H. *Search and Rescue in Southeast Asia, 1961-1975*. Washington, D.C.: Office Of Air Force History United States Air Force, 1980.

United Kingdom. Ministry of Defence. AP 3000 *British Air Power Doctrine* MOD: London, 1999.

United States, Department of Defense, Joint Pub 3-50.21 – *Joint Tactics, Techniques, and Procedures for Combat Search and Rescue*. Washington, DC, 23 March 1998.

United States. Secretary of the Air Force. Air Force Doctrine Document 2-1.6 *Personnel Recovery Operations*, (1 June 2005.) Publication on-line; ; Internet; accessed 15 January 2007.

Whitcomb, Darrel Colonel (USAFR, Retired). “Combat Search and Rescue – A Longer Look.” *Air and Space Power Journal* (Summer 2000). Journal on-line;  
[www.airpower.maxwell.af.mil/airchronicles/apjoo/sum00/whitcomb.pdf](http://www.airpower.maxwell.af.mil/airchronicles/apjoo/sum00/whitcomb.pdf); Internet; accessed 2 February 2007.

Whitcomb, Darrel Colonel (USAFR, Retired). “Rescue Operations in the Second Gulf War.” *Air and Space Power Journal* (Spring 2005). Journal on-line;  
[www.airpower.maxwell.af.mil/airchronicles/apj/apj05/spr05/whitcomb.html](http://www.airpower.maxwell.af.mil/airchronicles/apj/apj05/spr05/whitcomb.html); Internet; accessed 2 February 2007.