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Exercise Solo Flight

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EXERCISE *SOLO FLIGHT* – EXERCICE *SOLO FLIGHT*

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The post-Cold War world has seen a dramatic shift in the form of security threats facing Western powers and traditional states, and a commensurate and equally transformed response from governments and their military hard power. The mere mention of military power conjures ideas of tanks, jets and missiles within much of the contemporary western society populace – but paradoxically, the military responses in the majority of the new security threat environments have remained relatively small, dispersed, and largely out of the public spotlight. There is an academic consensus that the future security environment (FSE) will continue in the direction of this shift from state on state conflict, to irregular, small, non-state actor and associated trans-border security threats in the future operating environment (FOE). Special Operations Forces (SOF) are highly trained, advanced and specialized military forces that are ideally suited and tailored to this type of FSE and FOE.¹ Moreover, Special Operations (SO) and SOF appeal to western governments as a means of obtaining an economy of force in dealing with these emerging global security threats with high strategic value and political risk.² The relevance of employing SO and SOF in modern and future conflict therefore, cannot be understated, while understanding and analyzing the FSE and FOE also reveals that SOF will be called upon evermore frequently in future operations of the Canadian Armed Forces (CAF) and the Royal Canadian Air Force (RCAF).³

SOF in Canada have long had organic aviation assets integral to the Canadian Special Operations Forces Command (CANSOFCOM), particularly since the move of 427 Special

¹ William H. McRaven, *Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice* (Novato, CA: Presidio, 1995). McRaven was the first and most notary commander of the US Joint Special Operations Command (JSOC) and his book considered one of the first modern and standard in SO theory books available within the contemporary SOF community.

² Bern Horn and Emily Spencer, “Force of Choice: SOF as a Foreign Policy Enabler”, in *Special Operations Forces Building Global Partnerships*, ed Emily Spencer, 2 (Kingston: Canadian Defence Academy Press, 2012); Brigadier-General M.N. Rouleau, Commander, Canadian Special Operations Forces Command, Memorandum “Matching CANSOFCOM Mission Requirements with RCAF CC130J Capabilities” to Lieutenant-General Yvan Blondin, Commander, Royal Canadian Air Force, 15 February 2015, CANSOFCOM File 3500-1 (J3 Air).

³ Department of National Defence, A-GA-007-000/AF-008, *Air Force Vectors* (Ottawa: DND Canada, 2014).

Operations Aviation Squadron (SOAS) from the RCAF to operational command (OPCOM) under Commander CANSOFCOM in February 2006.⁴ Despite the relative successes of organic SOF aviation,⁵ there has been precious little development in creating formal or informal integral SOF fixed-wing air,⁶ despite several missed opportunities to do so.⁷ Considering the relevant facts that national counter-terrorism (CT) responsibility rests with the Royal Canadian Mounted Police (RCMP) as the lead federal agency,⁸ and the reality that SO will most often be conducted at great distance from operational bases (particularly in expeditionary contexts),⁹ the relevance and importance of RCAF fixed-wing aerospace support to SO and CANSOFCOM has rarely been more apparent. Given the current construct of RCAF fixed-wing support to CANSOFCOM, and the inherent lack of dedicated, integral, or organic personnel and resources, there is a perceivable capability gap that raises the key issue of whether or not CANSOFCOM and SO should have its own fixed-wing air arm and how this would affect the RCAF and CANSOFCOM institutionally. This paper will address the question of how the RCAF can best support special operations forces aerospace power requirements and rationalize why CANSOFCOM requires a specific degree of dedicated and segregated personnel and resources within the RCAF fixed-wing air transport community.

⁴ LGen Lucas, Chief of the Air Staff, *Transfer of Command Authority – 427 Squadron*, (NDHQ Ottawa: file 3010-1 (D Air SP), 27 January 2006), 1.

⁵ M. A. West, “The Future of Canadian Special Operations Aviation – A Strategic Cross Road,” (Joint Command and Staff Program Course Paper, Canadian Forces College, 2015); T.A. Morehen, “A Selection Process for SOF Aviation in Canada,” (master’s thesis, Canadian Forces College, 2009).

⁶ Within RCAF doctrine, aviation is a term in common reference to rotary wing platforms, while air is a commonly accepted reference to fixed-wing platforms. Throughout this paper, air will be used to delineate RCAF fixed-wing aircraft from aviation, or rotary wing aircraft.

⁷ M. Cournoyer, “Time for the Creation of a Canadian Special Operations CC130 Hercules Flight,” (Joint Command and Staff Program Course Paper, Canadian Forces College, 2002); C. Roy, “CANSOFCOM: A Special Force Command Without a Specialized Fixed-Wing Capability,” (Joint Command and Staff Program Course Paper, Canadian Forces College, 2009).

⁸ West, “The Future of Canadian Special Operations Aviation ...”, 2015, 9.

⁹ Roy, “CANSOFCOM: A Special Force Command Without a Specialized Fixed-Wing ...”, 2009, 4.

To resolve these questions and issues, this paper will address the FSE and FOE from an RCAF perspective to demonstrate the relevance of SO and SOF,¹⁰ with an emphasis on background and context in the integration of SOF and airpower in irregular warfare. Secondly the paper will address the uniqueness of aerospace requirements in support of SO and SOF, and why specialized and integral assets are required to maximize the provision of aerospace capabilities in the SO environment. This examination will then detail how SOF aerospace capabilities can best be supported only with the right selected RCAF personnel and why this is so critical. Finally, this paper will address the challenges of command and control (C2) structures in operationally supported command relationships between the RCAF and CANSOFCOM, and why CANSOFCOM requires integral, organic, command of assigned RCAF fixed-wing assets throughout any supported SO.

BACKGROUND, CONTEXT & SO RELEVANCE

The global security environment is a dynamic and changing operating area for contemporary military forces with operations conducted simultaneously across the spectrum of conflict and the entire continuum of operations.¹¹ SO are operations conducted by a specially trained, equipped, structured, and organized military force to achieve psychological-shock, politico-military, or foreign policy objectives through unconventional means in unsympathetic, access-denied, or politically hypersensitive areas.¹² These operations are conducted during peacetime competition, conflict, and war, independently or in coordination with operations of conventional, non-special operations forces. Political-military considerations frequently shape

¹⁰ In contemporary Special Operations theory, SO is the effect or mission to be accomplished, while SOF or Special Forces (SF) are the personnel and elements that conduct SO. There is no universally agreed difference between SF and SOF, for example the US uses both terms for similar activities of different units. Throughout this paper, SOF will be used as a synonymous term for both SF or SOF.

¹¹ Department of National Defence, *Future Security Environment 2013-2040* (Ottawa: Chief of Force Development, 2013).

¹² R.D.C. Schmidt, "Sapre Aude: Toward a CANSOF Officer Professional Development Model," (master's thesis, Canadian Forces College, 2015).

special operations, requiring clandestine, covert, or low visibility techniques and oversight at the national level. Special operations differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets.¹³ All analysis of the FSE and FOE indicate an ever-increasing frequency within which SOF, and thus the RCAF, will find itself conducting these simultaneous operations.

Future Security Environment (FSE)

A plethora of studies have analyzed and defined the predominant characteristics of the FSE. While it is not the intent of this paper to add, develop, or replicate the analysis and conclusions of this daunting amount of study, it is important to summarise the aspects of the FSE that pertain to the future security challenges of SOF and the RCAF in supporting them in SO. In broad terms, what *The Future Security Environment 2013-2040* published by Chief of Force Development surmises is that while peer versus peer conflict remains unlikely, it remains possible among other more likely forms of conflict such as irregular and counter-insurgency warfare, or stability and reconstruction operations.¹⁴ A common emergent thread is that the RCAF will need to maintain capabilities that enable operations across the whole spectrum of conflict and the continuum of operations, with both conventional force structures and in support of SOF.¹⁵ The FSE involves a greater likelihood of conflict with non-state actors as globalization continues to contribute to state instability and failure, thus difficulties will arise that challenge the RCAF's capacity to maintain readiness against conventional threats and also in managing

¹³ Ibid., 14-18; Rouleau, "Matching CANSOFCOM Mission Requirements with RCAF CC130J Capabilities" ... 2015, CANSOFCOM File 3500-1 (J3 Air).

¹⁴ Department of National Defence. *Future Security Environment 2013-2040*. (Ottawa: Chief of Force Development, 2013).

¹⁵ LGen (retired) George MacDonald, "A New Way to Fly: Major Challenges Facing Air Force Planners Over the Next 20 Years," Canadian Defence and Foreign Affairs Institute Policy Paper, 2014. https://d3n8a8pro7vhmx.cloudfront.net/cdfai/pages/412/attachments/original/1414642270/A_New_Way_to_Fly.pdf?1414642270; Department of National Defence, *Projecting Power: Canada's Air Force 2035*, ..., 2009.

adept non-state actors, largely in austere, urban, littoral, or austere environments. More importantly, these challenges "...will call for new capabilities and new approaches to combat new adversarial means...[such that] the C[A]F of the future must be a multi-role, combat effective force that can perform a broad range of tasks..."¹⁶ While the *Future Security Environment* does not rule out entirely interstate conflict, there is some contention about what the prevalence of this form of conflict will be in the FSE. In the United States (US), the recent past Chairman of the Joint Chiefs of Staff contends that the level of interstate conflict will rise, and this certainly is in line with contemporary empirical evidence with the level of potential interstate conflict from regions and states such as between Saudi Arabia and Iran in the Middle East, and the Ukraine and Russia in Eastern Europe.¹⁷ Finally, the *Future Security Environment* depicts a complex and ever-changing FSE where change and uncertainty remains an ever-present constant and crucial feature of future expeditionary operations for the CAF. Ultimately, the FSE will necessitate an integrated, balanced RCAF that is agile,¹⁸ with the reach and capabilities required for future CANSOF as well as CAF operations.¹⁹

The RCAF cannot manage SO in the FSE with its conventional structure and capabilities, as both general purpose and SOF will be required to tackle the wide-ranging potential future security challenges. While the RCAF has recognized this reality,²⁰ it has not promulgated how it intends to achieve this future balanced mix of capability and forces, particularly with respect to

¹⁶ Department of National Defence, *Projecting Power: Canada's Air Force 2035, ..., 2009*, 26-27.

¹⁷ United States, Department of Defence. *Quadrennial Defence Review 2014*. (Washington, DC: Department of Defence, 2014).

¹⁸ David S. Alberts, "Agility, Focus, and Convergence: The Future of Command and Control." *The International C2 Journal* 1, no. 1 (2007). (cf. Alberts' agility in military organizations); David S. Alberts, and Richard E. Hayes. "Power to the Edge: Command and Control in the Information Age." *Command and Control Research Publication Series* (2005). (cf. role of agility in manoeuvre and distributed warfare).

¹⁹ Department of National Defence, A-GA-007-000/AF-008, *Air Force Vectors* (Ottawa: DND Canada, 2014). (cf. AIRPower concept in RCAF vision at <http://www.rcaf-arc.forces.gc.ca/en/article-template-standard.page?doc=a-gathering-of-eagles-and-a-discussion-of-the-rcaf-s-future/ihat2lcv>).

²⁰ Department of National Defence, A-GA-007-000/AF-008, *Air Force Vectors*..., 15-16.

how the RCAF can improve on delivery of joint capabilities in the fixed-wing community – an issue that has captured the attention of the Commander CANSOFCOM.²¹

Future Operating Environment (FOE)

The *Future Security Environment* rejects the notion of predicting future trends based on the risk associated with the unpredictability of such an undertaking, but alternatively predicts the extension of current threats and concerns within broad categories such as geopolitical and science and technology trends. But this FSE understanding does provide a measure of predictability to the future RCAF capability requirements (FCR) in the conduct of likely missions to delivery aerospace effects in the FOE. As predicted by the FSE, the FOE will be incredibly dynamic and non-predictable, with dispersed operations globally performing simultaneous missions across the complete spectrum of conflict. The logical implication from this analysis of the FOE is that the RCAF will be operating within more complex and less defined theatres of operation and that this will be more demanding on the RCAF and occur with higher frequency than in the contemporary environment. More critically, the RCAF will not necessarily be confined to specific or traditional roles.²² Renewed Government interest in the inherent mission capabilities resident in CANSOFCOM, exemplified by the recent deployment to Iraq, points to CANSOF as an increasingly significant capability that Canada could contribute and to an increased political willingness to commit this capability to international operations in the FOE.²³ Thus, for the RCAF to continue to be a relevant joint partner and effective component in this national strategy, it must develop capability to support and project CANSOF capabilities

²¹ Brigadier-General M.N. Rouleau, Commander, Special Operations Forces Command, Memorandum “CANSOFCOM Dedicated Fixed-Wing Tactical Air Transport Flight” to Lieutenant-General Michael Hood, Commander, Royal Canadian Air Force, 30 November 2015, CANSOFCOM File 3500-1 (J3 Air).

²² Department of National Defence, *Future Security Environment 2008-2030 Part 1: Current and Emerging Trends...* (2009); Department of National Defence, *Projecting Power: Canada's Air Force 2035...*, 2009, 30-33.

²³ Rouleau, “Matching CANSOFCOM Mission Requirements with RCAF CC130J Capabilities” ... 2015, CANSOFCOM File 3500-1 (J3 Air), 1.

along with RCAF fixed-wing effects-based capabilities that allow the RCAF to function and respond to the dynamic aspects of complex SO within this FOE. One important aspect of this is keeping pace with technological advancements and the impact of technology, which demands that the RCAF must have the ability to change and evolve fleets incrementally uses existing resources in multiple ways, including that of roles in support of SO and SOF.²⁴

Accordingly the CAF and RCAF will not be operating in static theatres where the ability to dedicate and surge considerable resources to the application of a particularly narrow set of effects and capabilities exists. Instead forces will be deployed mostly to smaller, less defined and more numerous dispersed locations delivering a wide range of effects concurrently. If the RCAF were to deploy on a similar operation as the prolonged and well-supported Afghanistan theatre, with current operational tempos found in the European and Iraqi theatres, it would find itself without the historic flexibility for deployment of air mobility capabilities. Coupled with the complexities of the FSE and FOE, and the amplification of the dynamic nature of these missions in a SO context, the vital deduction is that RCAF personnel will be of critical importance to the successful outcome of strategic and operational SOF objectives.²⁵ As personnel become more and more critical to operational success, higher-level commanders must be willing to delegate execution authority to the echelon with the greatest degree of situational awareness and cannot be tempted to provide centralized control and centralized execution, or risk the loss of initiative in an information age when the pace of data will become increasingly incomprehensible.²⁶ Thus a more likely evolution of RCAF doctrine, as the FSE and FOE suggest, is the need for

²⁴ MacDonal, "A New Way to Fly: Major Challenges Facing Air Force Planners...", 2014, 2-3.

²⁵ North Atlantic Treaty Organization, "The Royal Canadian Air Force and NATO," *JAPCC Journal* 23, (Autumn/Winter 2016), 20. https://www.japcc.org/wp-content/uploads/JAPCC_Journal_Ed-23.pdf; Department of National Defence, A-GA-007-000/AF-008, *Air Force Vectors*..., 43.

²⁶ Lieutenant General David A. Deptula, "A New Era for Comamnd and Control of Aerospace Operations," *Air and Space Power Journal* 28, no. 4 (July-August, 2014): 8-10. <http://www.au.af.mil/au/afri/aspj/digital/pdf/articles/2014-Jul-Aug/SLP-Deptula.pdf>

distributed control, and more resilient command and control (C2) through *centralized command, distributed control, and decentralized execution*.²⁷ In this context, the importance of skilled and knowledgeable personnel who can thrive in unpredictability and be able to tackle SO air power challenges is immeasurable,²⁸ particularly considering the subject matter of SOF activities.

SO and SOF

Nowhere is this centrality of the human in operations and operational success and effectiveness more evident than in SO and SOF. SO and SOF power theories are less widely accepted and more historically based than its three traditional service domains counterparts, however a contemporary body of theoretical work exists that conclusively leads to this common thread. Universally, special operations are considered operations undertaken by particularly specialized and organized military special forces (SOF); specifically trained and equipped, and notable selected through rigorous selection processes, that creates small groupings of like-minded individuals who thrive in ambiguity and whose effects are greater than the sum of their parts.²⁹ This is predominantly because they are able to overcome the frictions of war, which less flexible conventional forces are unable to avoid given their structure and size. These frictions include constraints created through physical and cognitive limits in personnel, informational uncertainties stemming from difference in perceived and actual realities, and the non-linear aspects of combat processes.³⁰ The strengths of SOF personnel allow a marked degree of capacity to overcome these frictions where conventional forces cannot.

²⁷ Gilmary Michael Hostage, and Larry R Broadwell Jr., "Resilient command and control: The need for distributed control," *Joint Force Quarterly* 74, no. 38 (2014): 38-39.

²⁸ *Ibid*, 39.

²⁹ McRaven, *Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice* (Novato, CA: Presidio, 1995); Horn and Emily Spencer, "Force of Choice: SOF as a Foreign Policy Enabler",... (Kingston: Canadian Defence Academy Press, 2012)

³⁰ Robert G. Spulak, *A Theory of Special Operations: The Origin, Qualities, and Use of SOF*. (Tampa: JSOU Press, 2007).

SO are conducted across the spectrum and continuum of operations, during peace, conflict, or war in coordination with or independent from conventional operations. SO are conducted using unconventional means to achieve military, political, economic or psychological effects in often sensitive or hostile areas from a political or military standpoint, and differ from conventional operations in the techniques, independence from support, degree of political risk, and reliance on detailed intelligence.³¹ The politico-military sensitivities often shape SO such that it entails strategic or national-political oversight and requires specialized covert, clandestine, or low-visibility methods in achieving objectives. Thus SOF and SO rely on a technological overmatch to a large degree.³² All of these characteristics of SO and SOF lend to themselves to the FSE and FOE, and affords the Government of Canada (GoC) flexibility to take military action inside political sensitivities and to exercise hard power in conjunction with its allies without exorbitant risk and within fiscal realities.³³ Given the current political landscape of the United States advocating for increased global security burden sharing under the presidency of Donald Trump, the strategic relevance of SO and SOF as a force of choice will only increase from the high demand already being experienced by CANSOFCOM. As a critical enabler, the RCAF must structure its resources in support of CANSOF and SO to face the inevitable realities within this global security environment and the FSE and FOE.

RCAF Resistance

The stated mission of the RCAF is to provide the CAF with “relevant, responsive and effective airpower to meet the defence challenges of today and into the future.”³⁴ However, we

³¹ United States. Joint Chiefs of Staff, *United States Joint Publication 3-05: Special Operations* Vol 3-05 (United States, Washington, D.C.: Joint Chiefs of Staff, 2012); McRaven, *Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice* (Novato, CA: Presidio, 1995).

³² West, “The Future of Canadian Special Operations Aviation ...”, 2015.

³³ David A. Charters, “Special Operations Forces: An Economy of Force Option For Canada?”, in *Special Operations Forces: A National Capability* (Kingston: Defence Academy Press, 2011).

³⁴ Department of National Defence, A-GA-007-000/AF-008, *Air Force Vectors*,... 2014, 26.

remain the only modern air force with all assets that fly collected centrally in a single arm RCAF, and only recently in the last decade created an organic and integral aviation unit within CANSOFCOM.³⁵ Since the RCAF became a permanent element in the CAF in 1924, the GoC and the CAF have come to expect that the RCAF will meet their needs and challenges.

CANSOFCOM is a relatively young and non-matured organization within the CAF institution and has yet to normalize its working relationship with the RCAF as it continues maturing and developing its mandate.³⁶ The rapid change in SO and SOF operating environments, coupled with fiscal constraints that weigh heavily on the RCAF's ability to remain responsive and maintain capabilities in support of the entire CAF and GoC (including CANSOF), strain this relationship. Constraints on Commander CANSOFCOM's ability to support domestic and national assigned tasks led to a formal proposal for a joint study of assignment of a fixed-wing component of CC-130Js with supporting crew to CANSOFCOM under the Operational Control (OPCON) construct.³⁷ But to date, this has not happened and no timeline or formal frameworks have been discussed jointly with respect to this endeavour.

The conventional employment of aerospace power in the air mobility effects set³⁸ is relatively clear and not overly complex, evident by the tactical level expertise performed by the RCAF on a daily basis, both at home in Search and Rescue and support missions and in expeditionary contexts globally. But where does air power and air mobility fit into the complex scenario of SO? At a fundamental level there is a general belief that the training required for the

³⁵ West, "The Future of Canadian Special Operations Aviation ...", 2015; West, "The Future of Canadian Special Operations Aviation ...", 2015. (cf. Department of National Defence. B-GA-400-000/FP-001, *Royal Canadian Air Force Doctrine*. Ottawa: DND Canada, 2017. <http://www.airforce.forces.gc.ca/en/cf-aerospace-warfare-centre/aerospace-doctrine.page>)

³⁶ Rouleau, "Matching CANSOFCOM Mission Requirements with RCAF CC130J Capabilities" ... 2015, CANSOFCOM File 3500-1 (J3 Air), 1.

³⁷ Ibid; Rouleau, "CANSOFCOM Dedicated Fixed-Wing Tactical Air Transport Flight" to Lieutenant-General Michael Hood, ... November 2015.

³⁸ Air Mobility is an aerospace power role succinctly suited to fixed-wing aircraft closely tied to the CANSOFCOM mandate.

application of aerospace power, and the roles undertaken by air mobility in the conduct of SO remain the same as for conventional air power.³⁹ While this holds some truth, the difference in the reality of application will be the emphasis placed on roles, which will vary contextually, and that the employment of aerospace power in SO warfare must be innovative. Air mobility is at the centre of special warfare, as the ability to insert, sustain, extract, and support small dispersed and isolated SOF units is a prized capability at the heart of SO that is extremely dependant on air mobility. To be effective in the complete SO context as describe thus far, air mobility assets need to perform expanded roles such as precision strike, persistent ISR, and traditional air mobility roles to provide the foundation for successful SO warfare. This also requires an OPCON construct be afforded to CANSOF for assets and personnel as a unique SO and SOF capability aspect that is not affordable to the RCAF for full conventional operations. To date, there is again no progress within the RCAF to multirole air mobility assets nor segregate air mobility crews and personnel for the unique SO and SOF requirements.

There is no great deal of surprise in this weariness within the RCAF. As Dr. Richard Goette and Major Bill March aptly describe with organizational change in large institutions, such as the RCAF, particularly within larger institutions such as the CAF, there is an inherent degree of lethargy to transformation or meaningful change.⁴⁰ Moreover, the gathering of RCAF ownership of all aviation and air assets furthered the concept of the indivisibility of air power - and the age-old debate of centralized and concentrated assets versus decentralization and distribution of resources.⁴¹ Furthering this organizational culture is retired Major-General Daniel

³⁹ Australia. Department of Defence. "Air Power and Hybrid Warfare" *Pathfinder: Air Power Development Center Bulletin*, issue 277 (Australia, Canberra, November 2016).

⁴⁰ Richard Goette and Bill March, "Transforming Canada's Post-Cold War Air Force," in *The Transformation of Western Airpower*, ed Gary Schaub, Jr. (n.d). At the time of writing this paper was still in draft form and the publication had not been released.

⁴¹ *Ibid*, 2.

Gosselin's idea of a separate air element sub-culture he termed the "strong service idea".⁴²

Together, this has contributed largely to an RCAF institutional resistance to CANSOFCOM complete ownership of air mobility assets, exaggerating some of the RCAF institutional and air mobility community specific challenges that will be discussed further in this paper.

SPECIAL OPERATIONS FIXED-WING ASSETS AND CAPABILITIES

Despite the institutional lethargy and resistance to asset ownership residing within the RCAF, CANSOFCOM also faces institutional dilemmas; forced to rationalize its advantageous characteristics of small size and flattened hierarchies within the command, while it considers considerable growth in adopting organic aerospace assets and resources. While the RCAF is changing its emphasis on future expectancy to continuous analysis of emerging capability gaps and requirements in procurement endeavours, the successful navigation of this approach in fiscally constrained budgets and contentious political environments is not being realized. An ensuing platform-centric solution to capability gaps approach has resulted in stovepipe and stagnated capabilities management, the sheer number of additional fleets added to an already constrained RCAF force provides ample empirical evidence of this. CANSOFCOM risks following the RCAF in a similar manner, with a number of similar platform-equals-capability projects already in various stages of the procurement programme.⁴³

Multirole Platforms

Multirole platforms that employ a variety of capabilities within the same aircraft fleet provide numerous benefits for both RCAF and CANSOFCOM objectives with respect to

⁴² Ibid, 17.

⁴³ Department of National Defence, *DAG 2016 CANSOFCOM SERVICES: Air and Aviation Systems Portfolio*, (Ottawa: DND Canada, 2016). <http://www.forces.gc.ca/en/business-defence-acquisition-guide-2016/cansofcom-air-capability-portfolio.page>. The 2016 CANSOFCOM Defence Acquisition Guide Air and Aviation Systems Portfolio not only shows ambitious CANSOFCOM aerospace resource requirements, but show some overlap with redundant capability-based projects in the DAG 2016 Aerospace System Services project lists of the RCAF.

aerospace power mandates. These multirole adaptations are particularly relevant to SOF and provide CANSOFCOM significant benefits in the application of aerospace effects to SO. These benefits include superior resource management options, increased survivability and operational effectiveness, as well as socio-political benefits. Most importantly for SOF, multirole platforms provide enhanced flexibility and a larger degree of certainty that more of the roles and air effects needed in SO will be available for mission support. In sum, multirole adaptation offers an ability to have a more rationalized RCAF approach to delivery of aerospace support to CANSOF, while maintaining the capabilities within the limited resources that exist for continued support to conventional operations.

Survivability.

Multirole platforms extend the RCAF's ability to project capabilities and effects into areas where specialized platforms may not be able to operate, such as in RCAF operations in Libya that conducted Strike and Armed Reconnaissance - Coordinator (SCAR-C) missions with the CP-140 Aurora in 2011.⁴⁴ While a multirole example in its own right, this mission highlighted an avenue where platforms other than the CP-140 could have produced more consistent capability projection had they been properly deployed as multirole aircraft. Brigadier-General (BGen) Joyce described in his Libya mission end of tour report, "Of note, had the CP140 been capable of operating in a higher threat environment it could have been used in this role months earlier to significant operational effect."⁴⁵ Use of the Canadian CC-130J, equipped similarly to a United States Air Force (USAF) MC-130W Dragon Spear or AC-130J Ghost Rider with the self-protection capabilities integral to all C-130 family aircraft, would have provided a

⁴⁴ Alan Lockerby, "SCAR-C Over Libya: To War in an Aurora," *Canadian Military Journal* 12, no. 3 (Summer 2012): 63-67.

⁴⁵ BGen Derek Joyce, *End of Tour Report – Task Force Libeccio*. (CEFCOM: file 1630-1 (Comd TF LIB), 07 November 2011, 4/9.

holistic and pure multirole function that would have permitted this capability projection in a higher threat environment. More importantly from a SOF and SO perspective, air mobility assets such as the CC-130J properly configured with roll-on, roll-off multirole capabilities could have performed these tasks while remaining capable of performing other SO and SOF roles and support in theatre, a necessity in the SO context as previously discussed.⁴⁶ The Dragon Spear also has air attack capabilities, and can operate from remote and austere strips where contemporary multirole fighters such as the CF-18, require substantive main operating bases. This is another example of capability projection (such as air attack – interdiction) through multirole aircraft that enhances survivability over more specialized platforms.⁴⁷ The use of C-130 air mobility aircraft in such roles for SO is commonplace in the inventory of the USAF, in particular the US Marine Corps and in the US Air Force Special Operations Command (AFSOC), the air component of the US Special Operations Command (USSOCOM).⁴⁸

Resource Consolidation.

Multirole platforms also present a mechanism that minimizes the impact of technological and scientific innovation on future global RCAF operating environments, particularly in support of SO and SOF. In broad terms, weapons and sensors can be replaced or modernized quicker and cheaper than an entire aircraft or platform,⁴⁹ and CANSOF has already purchased SABRE pods that provide a modular capability to turn CC-130Js or CC-177s into Command, Control,

⁴⁶ United States, Department of Defence, “AC-130J Ghost Rider Factsheet,” US Air Force, last modified 16 December 2013, <http://www.af.mil/AboutUs/FactSheets/Display/tabid/224/Article/467756/ac-130j-ghost rider.aspx>; Defence Update, Lance and Shield Ltd, “AFSOC MC-130W Combat Spear Turned into a Dragon Spear,” last modified 2011, http://defense-update.com/products/m/mc130w_combat_spear_31122010.html

⁴⁷ David Hambling, “Spec Ops Shops for 10-pack of precision guided bombs,” *Wired*, 25 June 2009, Retrieved 3 February 2017. <https://www.wired.com/2009/06/spec-ops-shops-for-10-pack-of-precision-glide-bombs/>.

⁴⁸ United States, Department of Defence, Joint Publication 3-05 *Special Operations* (Washington D.C.: US Government Printing Office, 2014); United States, Department of Defence, AFDD 2-6 *Air Mobility Operations*. (Washington D.C.: US Government Printing Office, 2010).

⁴⁹ Thomas Held, Bruce Newsome, and Matthew W. Lewis, “Commonality in Military Equipment: A Framework to Improve Acquisition Decisions,” RAND Corporation, (Santa Monica: 2008), 30. <http://www.rand.org/pubs/monographs/MG719.html>

Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) platforms.⁵⁰ Multirole also provides a basis for aerospace platform rationalization,⁵¹ something of an expected problem for both the RCAF and CANSOFCOM as eluded to in the DAG 2016. Fleet rationalization problems are likely to only continue into future procurement endeavours for both CANSOFCOM and the RCAF. Fleet rationalization achieved with multirole options maintains capabilities, with corresponding and considerable cost savings achievable due to infrastructure and logistical reductions, reduced training costs and personnel savings (organizational efficiency), and operations and maintenance (O&M) efficiencies as examples.⁵² Nowhere is this more pronounced than for the current RCAF helicopter fleets,⁵³ a significant problem that will face CANSOFCOM's replacement options for the CH-146 Griffin fleet for SOF and SO support in the near future.⁵⁴

Operational Effectiveness.

The RCAF communicates a strategic intent to realize multirole efficiencies and savings by "...pursu[ing] the operational advantages and cost efficiencies afforded by multi-role [sic] platforms, crews, and weapons."⁵⁵ Despite formalizing this intent in 2014 however, the RCAF has been hampered by a multitude of new fleet acquisitions that are not multirole aircraft,⁵⁶ and recent announcements and intent surrounding new platform procurements or fleet replacements indicate that the RCAF is not trending towards commonality or multirole efficiencies to existing

⁵⁰ This author is an Operational Test Pilot with 436 Sqn, and conducted some of the initial trial consultations with CANSOFCOM staff after purchase of the SABRE pods.

⁵¹ J.A. Bowser, "Providing the Same with Less: An Examination of Fleet Rationalization in the Large Fixed-Wing Communities of the RCAF" (Joint Command and Staff Program Course Paper, Canadian Forces College, 2016).

⁵² David Robertson and Karl Ulrich, "Planning for Product Platforms," *Sloan Management Review*, Vol. 39, No. 4 (Summer 1998). <http://sloanreview.mit.edu/article/planning-for-product-platforms/>

⁵³ W.C. Reyno, "Less is More: Rethinking the RCAF's Future Rotary Wing Fleet," (master's thesis, Canadian Forces College, 2015).

⁵⁴ West, "The Future of Canadian Special Operations Aviation ...", 2015, 21-22.

⁵⁵ Department of National Defence, A-GA-007-000/AF-008, *Air Force Vectors*..., 41.

⁵⁶ Cf. Goette and Bill March, "Transforming Canada's Post-Cold War Air Force,".... There are a multitude of political and military decisions surrounding this issue for the RCAF, but no indications that the trend is reversing.

platforms already in service.⁵⁷ This trend is counter to the aerospace needs within CANSOF for SO that CANSOFCOM is currently demanding from the RCAF. The operational advantages afforded through multirole platform capabilities in aircraft such as the CC-130 are that they are proven, affordable, provide a modular approach through rapid integration of roll-on roll-off (RORO) approaches, and provide multiple mission capabilities within the same sortie if required.⁵⁸ In short, there are timely and effective, and multirole platforms can also produce effects when other specialized platforms are unable to provide their singular capability or effect. In the FSE and FOE expected, deployment of multirole platforms for air power effects in SO contexts translates to smaller deployed footprints, fitting with SOF truths and doctrine with benefit ranging from greater force protection options, to mobile and more effective sustainment, C4ISR, and precision fires support. Multirole platforms enhance capability-based planning and provide flexibility, where airpower already "...provides one of the most flexible instruments available to Canadian policy makers...[offering] the ability to project power quickly and precisely..."⁵⁹ and "The rapid response capability represented by the CC130J combined with the tactical mission-sets ... complement the covert and highly flexible mission sets inherent in [CANSOFCOM] units."⁶⁰ More meaningfully, multirole platforms make available the capabilities that allow SOF to respond rapidly and intelligently to unexpected developments in SO, thereby facilitating the SOF requirements to be to be agile.⁶¹

⁵⁷ Department of National Defence, *Defence Acquisition Guide 2016*..., 2016; Reyno, "Less is More: Rethinking the RCAF's Future Rotary Wing Fleet..." (2015); Bowser, "Providing the Same with Less: An Examination of Fleet Rationalization in the Large Fixed-Wing Communities of the RCAF" ..., 2016.

⁵⁸ Del Warman, "C-130 Roll On/Roll Off Capability," (presentation given by Lockheed Martin Aeronautical Advanced Development Projects (ADP), Special Mission Programs, at Hercules Operators Conference, Marietta, Georgia, 2010). Last accessed 07 May 2017.

http://www.lockheedmartin.ca/content/dam/lockheed/data/aero/documents/global-sustainment/product-support/2010HOC-Presentations/Wed_1115_Roll-onRoll-Off-Del_Warman.pdf

⁵⁹ Department of National Defence, A-GA-007-000/AF-008, *Air Force Vectors*..., 9.

⁶⁰ Rouleau, "Matching CANSOFCOM Mission Requirements with RCAF CC130J Capabilities"...February 2015, 3.

⁶¹ Ibid.

Socio-political Benefits.

SOF require freedom of movement within the social and political frameworks, and physical dimensions of the future global security environment. Multirole platforms offer potential political benefits, as there is considerably less risk adversity and decision paralysis from the political spectrum in contributing transport aircraft with embedded multirole C4ISR or precision strike capability to a theatre compared to strike-fighter aircraft that can have but one purpose for example. This risk adversity was demonstrated in the recent decision by the newly elected Trudeau Government to cancel the kinetic contribution to OP IMPACT by Canada's CF-18s.⁶² Socio-political benefits are also obtained when the smaller footprints of deployed SO task forces supported by multirole air power favourably shapes host nation perceptions and support so critical to deployed SOF. These benefits from multirole platforms can allow the RCAF to furnish CANSOF aerospace power requirements while still deploying a full spectrum of capabilities and maintaining agility of SOF and RCAF deployed forces.

Projection of Force

Perhaps most critical to CANSOFCOM is the issue of projection of force versus the associated readiness levels of SOF for domestic tasks within Canada.⁶³ Without the allocation of dedicated platforms and associated crews for the domestic CANSOFCOM mandate, readiness levels that are matched to task and currently necessitated within CANSOF units are negated by the lack of a commensurate RCAF air mobility fleet response. Moreover, this is largely a time and space problem, where a CC-130J due to range, speed, and cargo capacity can project CANSOF needs for domestic operations much more readily than the dedicated helicopter fleet

⁶² Susana Mas, "ISIS Airstrikes by Canada to End by Feb. 22, Training Forces to Triple," CBC News Politics, 08 Feb 2016. <http://www.cbc.ca/news/politics/justin-trudeau-canada-isis-fight-announcement-1.3438279>

⁶³ Rouleau, "Matching CANSOFCOM Mission Requirements with RCAF CC130J Capabilities" ... 2015, CANSOFCOM File 3500-1 (J3 Air), 2, para 8; Rouleau, "CANSOFCOM Dedicated Fixed-Wing Tactical Air Transport Flight" November 2015, CANSOFCOM File 3500-1 (J3 Air), para 2.

organic to CANSOF, and therefore matched in terms of readiness levels. However, for expeditionary CANSOFCOM missions, geographical distance may warrant a dedicated CC-130J platform unfeasible and therefore require the greater range and speed of a CC-177. With limited strategic resources such as the CC-177, the RCAF cannot and will not allocate such assets integral to CANSOFCOM. However, while permanent allocation of all potential CANSOFCOM air mobility needs is not viable, organic CC-130Js, particularly in a multirole configuration able to provide multiple effects, organic to CANSOFCOM would produce measurable efficiencies to both the RCAF and CANSOF, and facilitate the mandated readiness levels of CANSOFCOM's domestic tasks.

PERSONNEL

With the capabilities granted by multirole platforms and the environment of future SO described by the FSE and FOE, the criticality of employing the right RCAF personnel in SO cannot be overstated. While the platforms used are flexible and can be adapted as needed through multirole, the same principles do not hold true for the personnel employed to function in the SO environment and operate RCAF assets in support of SOF and SO. The RCAF must dedicate air mobility crews to the unique mission-sets of SOF and SO in order to effectively delivery the air power requirements of the CANSOFCOM mandate and meet the RCAF's mission.

One method of ensuring the right RCAF personnel are employed in air mobility SO is through a rigorous process of selection that closely resembles that which has been conducted by SOF since their inception into modern battle. There are multiple benefits to selected personnel,⁶⁴ not the least of which are members that share the same commitments to the SO mission as the SOF operators they are supporting. SO requires continuous training and habitual understanding

⁶⁴ West, "The Future of Canadian Special Operations Aviation . . .", 2015, 10; Morehen, "A Selection Process for SOF Aviation in Canada," (master's thesis, Canadian Forces College, 2009); McRaven, *Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice* (Novato, CA: Presidio, 1995).

of the unique air power requirements of SOF and SO on the ground,⁶⁵ and this can only be done by dedicated and selected individuals who are afforded the training and experience to master the skills necessary in the complex SO environment. McRaven supports these contentions and adds that a constant throughout his eight case studies was the motivation of individuals and that all were volunteers that surpassed extensive screening and selection.⁶⁶ This leads to trust, another key component of team dynamics that is accentuated in the complexities of the SO operating environment. Given the forecasted increase in SO type operations of the FSE and FOE, the importance of well-equipped, well-trained, motivated and trusted SOF personnel to the Canadian security enterprise is immense.⁶⁷ This includes the RCAF personnel operating aerospace platforms in support of SOF and SO, whether those assets are dedicated or not, and these principals hold true for our American allies in AFSOC to the South.⁶⁸

Another large benefit of screened and selected personnel for air mobility SO missions is a training economization. Currently, air mobility crews in the CC-130J and CC-177 communities are trained and maintain currencies in all mission-sets. In short, the implication with reduced flying rates in contemporary fiscal realities and high operational tempos is that crews are current in all skill sets, but masters of none in a proficiency versus currency conundrum. In other cases, complete aircrew skills that would be particularly suited and required in air mobility support to SO have been lost altogether.⁶⁹ Ultimately, maintaining the complete crew force within either air mobility community requires a significant amount of flying hours (YFR) and personnel – given

⁶⁵ West, “The Future of Canadian Special Operations Aviation ...”, 2015, 10.

⁶⁶ McRaven, *Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice* (Novato, CA: Presidio, 1995), 387-390.

⁶⁷ Cournoyer, “Time for the Creation of a Canadian Special Operations CC130 Hercules Flight,”... 2002.

⁶⁸ Charles Tustin Kamps, “US Air Force Special Operations,” *Air & Space Power Journal* (Spring 2005):19.

⁶⁹ Roy, “CANSOFCOM: A Special Force Command Without a Specialized Fixed-Wing ...”, 2009, 6-18. Roy describes aptly the training resources and bill associated with training and maintaining skills required for air mobility crews to operate in a Threat System Category (TSC) 1 versus TSC 2 environment, with TSC2 being most probable for SO environments. TSC2 trained crews in the CC-130J community have all but disappeared.

the fixed nature of crew force establishments and historical record of YFR allocations, the RCAF simple cannot continue to train all crews in the unique skills required and demanded by SOF in SO missions, including evolving and emergent capabilities such as specialized High Altitude Parachute (HAP) insertions and covert Forward Air Refuelling (FARP) of SOF helicopters.⁷⁰ Furthermore, special airlift in support of SO cannot be conducted in an ad hoc, case-by-case, or improvised approach.⁷¹

COMMAND AND CONTROL

While adaptable, multirole assets and associated SO aerospace capabilities, and selected personnel, all contribute to successful SO, it is command and control (C2) that binds them together and allows SOF to be a flattened hierarchy and fast-acting enterprise (describe why this is necessary).

Africa case study (Forbes ref from his DRP on C2?)

Tie this to unity of command versus centralized control/decentralized execution (RCAF refs). The paradox this creates.

This also creates competing risk management situations between supported and supporting commanders, which does not function well in a SO and SOF mission environment. (particularly with a divergence of risk acceptance taken).

Air planning versus air effects execution. Complicates the holistic mission planning for RCAF crews supporting SO as elements outside of the command are not privy to all available mission planning information. This is not limited solely to the aspect of operational security (OPSEC) reasons, but also due to technical limitations with the transmission of secure mission

⁷⁰ Rouleau, "Matching CANSOFCOM Mission Requirements with RCAF CC130J Capabilities" ... 2015, CANSOFCOM File 3500-1 (J3 Air), 2, para 6-7.

⁷¹ Cournoyer, "Time for the Creation of a Canadian Special Operations CC130 Hercules Flight," ... 2002; Roy, "CANSOFCOM: A Special Force Command Without a Specialized Fixed-Wing ...", 2009.

planning information with RCAF and CANSOFCOM elements working on different IT solutions (due to being in different commands and elements of the CAF) while separated geographically. This is particularly exasperated when an RCAF Air task Force (ATF) is deployed in a deployed ATF construct embedded within a Joint Special Operations Task Force (JSOTF), regardless of the command relationship adopted and accepted by the RCAF. The simplest solution remains crews organic to CANSOFCOM for fixed-wing SO. (Counter is Griffin case study in salt water ops – but counter and solution is the five residuals).

Tie all, and find/link to Allied C2 structure (US has AFSOC within USSOCCOM, UK has 47 Sqn, etc).

WAY AHEAD (COUNTER ARGUMENTS)

Case study of CANSOFCOM exploitation of organic assets with CH-146 Griffin helicopter operations over salt water. Resulted in lengthy grounding of fleet and poor aerospace engineering management. This was blamed on lack of RCAF oversight, but this was not caused by the command having organic assets and the associated full command C2 relationship associated to CANSOFCOM. This was issue with residuals not properly understood and annotated, and could easily be overcome with better RCAF personnel representation within CANSOFCOM, for example Aerospace Engineer (AERE) officers and fixed-wing aircrew familiar with low-level salt-water operations and the effects on aircraft maintenance and performance.

Way ahead and recommendations.

CONCLUSION

Status quo cannot be sustained and is not working. Immediate steps can and should be taken to set conditions for further improvements. For example adopting and implementing a

personnel selection to identify semi-permanent crews on CC-130J and CC-177 platforms that can hone a tighter set of aircrew skill sets expected and required for SO and support to SOF.

Multirole platforms are another easy win for the RCAF effort to better support CANSOFCOM, as roll-on, roll-off equipment that functions C4ISR needs for CANSOF also exists for these platforms.

Working to set conditions for analysis of further C2 relationship solutions and improvements must also occur to maintain the SOF enterprise as a flat and responsive organization. This can be managed with fixed-wing assets integral and organic to CANSOFCOM, while still maintaining control over residuals aspects where RCAF expertise is not deep enough to cut to CANSOFCOM, or where the nascent expertise and capabilities are already centralized within the RCAF (such as aerospace engineering and maintenance, flight safety, etc.).

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Research material and notes

(All from the fol link: <http://www.globalsecurity.org/military/systems/aircraft/sof.htm>)

SPECIAL OPERATIONS AVIATION

In the US military's Mission Design Series (MDS) designation system for aerospace vehicles, the modified mission prefix letter "M" stands for Multi-mission. With regards to specific airframes, variants designated with the M prefix range from helicopters capable of performing multiple utility missions to those designed specifically to support special operations forces.

Special Operations Forces (SOF) aviation units are trained, equipped, and manned to support both special and conventional operating forces. Special operations cover a series of unique primary, collateral, and emerging missions that directly support a theater combatant commander. These assets are dedicated to conducting special operations missions across the full range of military operations. They provide a mix of short, medium, and long-range lift, and limited attack capabilities. They support all principal, collateral, and emerging mission areas; they can conduct autonomous special reconnaissance and direct action missions.

Special Operations (SO) are operations conducted by specially organized, trained, and equipped military and paramilitary forces to achieve military, political, economic, or psychological objectives by unconventional military means in hostile, denied, or politically sensitive areas. These operations are conducted during peacetime competition, conflict, and war, independently or in coordination with operations of conventional, nonspecial operations forces. Political-military considerations frequently shape special operations, requiring clandestine, covert, or low visibility techniques and oversight at the national level. Special operations differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets.

SOF are not substitutes for strong conventional forces but are complementary to conventional capabilities. Depending on mission requirements, SOF may operate in place of, or in addition to, conventional forces throughout the range of military operations. The small size, special equipment, and area-oriented training which characterizes SOF make them useful in situations and areas where use of conventional military forces might be less feasible operationally or politically.

In special operations, it is essential to get in, accomplish the objective, and withdraw as quickly as possible. Any delay increases vulnerability and decreases chances for success. The longer a given mission lasts, the more the friction of war works against SOF. In order to maximize speed and surprise, SOF are relatively small in number and lightly armed. Because of this, SOF cannot sustain action against a large defending force for very long. SOF achieve relative superiority by moving so quickly that the enemy doesn't have time to react in force.

These highly trained active and reserve aircrews operate uniquely equipped, fixed-wing and vertical-lift aircraft to provide combat airpower "any time, any place." As the Air Force element of SOF, AFSOF are structured to provide denied territory mobility, surgical firepower, special tactics units, and aviation advisory interface with foreign organizations. They normally act in concert with Army and Navy SOF, including Army special forces, Rangers, and special operations aviation, Navy sea-air-land (SEAL) teams, PSYOP forces, and civil affairs units, but AFSOF are also capable of acting as part of an Air Force component in a larger joint structure. AFSOF are prepared to support activities ranging from limited duration combat operations to

long term materiel and advisory support of foreign governments and military services.

The SOF mobility mission area includes the rapid, global airlift of personnel and equipment through hostile airspace to conduct special operations. AFSOF are an integral part of a joint SOF team during mission planning, rehearsal, and execution, and may provide unique capability to conventional force commanders. SOF mobility includes covert, clandestine, or overt tasks. AFSOF capabilities must accommodate all operational and physical environments, especially conditions of adverse weather and darkness. Operations may be conducted with a single aircraft, as part of a SOF task force or as part of a larger force package.

The SOF precision employment/strike mission area includes precise and responsive support to SOF or conventional forces. AFSOF precision employment/ strike ground elements and airborne platforms provide all-weather weapons delivery and SOF support (target designation, air traffic control, and drop zone and landing zone operations) across the full spectrum of conflict. The ability of aerospace forces to deploy globally and strike precisely provides force multiplication, minimizes collateral damage, allows the discriminate employment of asymmetric force, and permits freedom of maneuver for supported forces.

Special activities are governed by executive order and require presidential approval and congressional oversight. These are activities conducted abroad in support of national foreign policy objectives. They are normally conducted in such a manner that US Government participation is neither apparent nor publicly acknowledged. When supporting or conducting a special activity, AFSOF can perform any of their traditional missions, subject to the limitations imposed on special activities. Such activities are normally compartmented and centrally controlled.

Unconventional Warfare [UW] includes guerrilla warfare, subversion, sabotage, intelligence activities, evasion and escape, and other activities of a low visibility, covert or clandestine nature. UW is principally the responsibility of Army special forces (SF). AFSOF aircraft support UW by conducting special air operations to provide covert, clandestine, or low-visibility infiltration, exfiltration, resupply, surveillance, and fire support for other SOF elements.

Direct Action [DA] operations are short-duration strikes and other small-scale offensive operations principally taken by SOF to seize, destroy, capture, recover, or inflict damage on designated personnel or materiel. Unlike UW, DA operations are normally limited in scope and duration and usually incorporate a planned withdrawal from the immediate objective area.

Under most circumstances, US Air Force AFSOF are integral to a joint SOF package for DA missions. Only AC-130 aircraft train extensively for DA fire support. MC-130 COMBAT TALON aircraft train for delivery of gravity-employed munitions. MH-53J PAVE LOW and NH-60 PAVE HAWK helicopters, primarily armed for self-defense, can provide limited fire support to SOF ground elements. Special tactics teams routinely provide their unique capabilities to joint DA forces. AFSOF airborne PSYOP dissemination assets may be employed as force multipliers for military actions, electronic combat measures, or support of tactical cover and deception activities.

The tactical commander may control the mission from an airborne command and control center (ABCCC) aircraft. This option provides effective, redundant communications systems and places the tactical commander and battle staff in close proximity to the operation. However, it also places the tactical commander at great risk in a high-threat environment and may increase the likelihood of early mission compromise.

DA missions often depend on the application of concentrated combat power by a small force in the narrowly circumscribed time and space of the actual actions in the objective area, followed

by a rapid withdrawal before the enemy can retaliate by introducing superior combat power into the local area. Unlike conventional military forces that use mass to accomplish these goals, SOF minimize force levels and instead rely on stealth and unconventional tactics and techniques to achieve them. The size of a DA force should be as large as the nature of the target requires and transportation restraints permit, but small enough not to significantly increase the risks of early detection and massive reaction by the enemy once the action occurs.

Surprise is an absolute precondition in DA missions. Overall force ratios are usually so unfavorable that there is no chance of success if the enemy is alerted in time to concentrate a reaction force. Loss of surprise is normally a valid abort criteria to cancel, delay, or redirect the operation to an alternate target. For this reason, strict operations security (OPSEC) is vital and cover and deception activities are essential. The most successful DA missions treat cover and deception not as complementary activities but as an integral part of the mission planning process. Special Reconnaissance [SR] includes a wide variety of information-gathering activities of strategic or operational significance. AC-130 gunships can perform SR missions with their FLIR sensors, radar, and low light and infrared imaging and have imagery recording capability. MC-130 Combat Talons have FLIR sensors and imagery recording capability. Special tactics teams can perform SR and possess unique airfield assessment capabilities. AFSOF airborne PSYOP assets may be employed to monitor and record electronic communications information.

Counterterrorism [CT] is a highly specialized, resource-intensive mission. Certain SOF units maintain a high state of readiness to conduct CT operations and possess a full range of CT capabilities. Theater combatant commanders maintain designated CT contingency forces to respond to CT situations when national assets are not immediately available.

The Joint Forces Special Operations Component Commander [JFSOCC] may choose to organize functional components in lieu of or in combination with Service components. The most common SO functional organization is the JSOAC [Joint Special Operations Air Component]. The JSOACC is the subordinate commander within a SOC or JSOTF responsible for planning and executing joint special air operations and for coordinating and deconflicting those operations with conventional air operations. The JSOACC normally will be the SOF aviation commander providing the preponderance of air assets or most capable of controlling special air operations in a specific situation.

SO aircraft normally traverse multiple zones of airspace control and may overfly conventional surface operations while inserting, resupplying, or extracting SOF elements. Because joint air forces and SOF routinely operate in the deep battle area, their operations must be fully integrated to create opportunities for synergistic attack and deconflicted to prevent fratricide.

Commanders may employ virtually any aerospace forces in SO, and SOF may require support from conventional assets to suppress enemy air defenses, cause diversions, increase airlift capability or ensure the air and ground defense security of their landing strips or forward arming and refueling points. These augmenting forces provide capabilities beyond those found in SO aviation forces. The JFSOCC normally requests conventional air support sorties to support SOF on a mission-by-mission and priority availability basis, but the JFC may direct a transfer of control to the JSOACC or COMAFSOC for a specified and usually short period of time. Regardless of command relationships, integrating non-SOA assets into special air operations requires advance planning and extensive coordination.

In most threat environments, SOF can provide stealth and precision attack as an alternative to air power. The JFACC can therefore request the use of SOF as an economy of force measure to destroy certain targets, freeing air assets to concentrate against other targets more suitable for air

attack. For example, SOF attacked Iraqi early warning sites in the initial phase of Operation DESERT STORM, allowing the JFACC to employ the entire F-117 force to strike Baghdad.

The JFACC may have targets that require specific damage effects (or the limitation of collateral damage) beyond the capabilities of precision-guided munitions. Some examples include the destruction or incapacitation of weapons of mass destruction or their production facilities without the spread of deadly contaminants. The JFC may want to neutralize a target without destroying its vital components. SOF may also be employed to locate and attack concealed, perishable, or mobile targets that are difficult for conventional air and surface forces to attack.

SOF can contribute directly to joint air operations by conducting asymmetrical DA strikes against airfields, ground radars, and other high-value counterair targets. SOF can also locate and identify mobile targets and then designate them visually, electronically, or optically for conventional air attack. SOF can also perform poststrike reconnaissance missions after conventional air strikes.

SOF have unique capabilities that can enhance joint air operations. For example, SOF aircraft can deliver the 15,000 pound BLU-82 bomb for psychological effect or to create an instant helicopter landing zone. SOF can also conduct certain personnel recovery missions beyond the capabilities of conventional CSAR forces.

SOF normally operate from one or more main operations bases (MOBs) and a variable number of forward operations bases (FOBs) and advanced operations bases (AOBs).

A main operations base (MOB) is a base established by a JFSOCC or a subordinate SOF component commander in friendly territory to provide sustained command and control, administration, and logistic support to SO activities in designated areas. The MOB is normally the location of an ARSOTF, AFSOC, or NSWTG. The SF Group calls its MOB the Special Forces operations base. The AFSOC calls its MOB the Air Force special operations base.

A forward operations base (FOB) is a base usually located in friendly territory or afloat that is established to extend the command and control or communications of a MOB or to provide support for training and tactical operations. The FOB may be established for temporary or longer duration operations and may include an airfield or an unimproved airstrip, an anchorage, or a pier. The FOB is normally the location of a SOF battalion, squadron, or task unit controlled and/or supported by the SOF component commander at a MOB.

An advanced operations base (AOB) is a small temporary base established near or within a JSOA to command, control, and/or support training or tactical operations. Facilities are normally austere. The base may be ashore or afloat. If ashore, it may include an airfield or unimproved airstrip, a pier, or an anchorage. An AOB is normally the location of a SOF company or smaller element controlled and/or supported by an MOB or FOB.

Certain conventional forces receive enhanced training and special equipment that make them uniquely qualified to support SO. Some may be earmarked to support SOF by command agreement arrangements or documented as augmenting forces in plans. They are not designated as SOF by the SecDef, although the Marine Corps designates the MEU as "SO-capable." On a mission-specific basis these units may be assigned to support SO or participate in joint SO training. In some cases, these supporting forces augment existing SOF capabilities.

Special Operations Low-Level SOLL II C-130, C-141 and C-5 aircraft, by virtue of special aircrew training and/or aircraft modification, can quickly augment core SOF for the conduct and support of selected SO. They frequently practice single-ship tactical operations along SO profiles, maintain proficiency with night vision goggles, and participate in joint SOF exercises. The SOLL I program has been converted into the conventional Pathfinder program.

The Air Mobility Command and Air Combat Command maintain a limited number of strategic tanker crews trained to support the often unique refueling requirements of SO fixed-wing aircraft.

Helicopter Combat Support Special Squadrons 4 and 5 of the Naval Reserve operate HH-60H aircraft for either extended remote site operations ashore or extended shipboard operations. The aircraft are configured to support SOF infiltration and exfiltration.

Why The C130 Is Such a Badass Plane.

<http://www.popularmechanics.com/military/aviation/a26156/c-130-badass-plane/>

“A Hawk of War, a Dove of Peace”. Today's AC-130E/H/U/W Spooky/Spectre/Stinger gunship is renowned for its ability to protect special operations troops on the ground from Vietnam all the way up to the recent Afghanistan War with lethal 20mm/30mm/40mm cannon, and even 105mm Howitzer as well as additional smart bombs and missiles. In fact, one single AC-130 helped stop a southbound Iraqi armored column during the Battle of Khafji in 1991.

But the Herc was also central to rescue missions, whether dramatic hostage situations like the successful 1976 Israeli Raid on Entebbe or the failed 1980 Iranian hostage mission, and has saved countless lives on land and at sea with the Coast Guard. Breaking more records, the C-130 is also the first fixed-wing aircraft to land at the site of natural disasters like Hurricane Katrina, Haiti's earthquake, Fukushima, and the recent Peruvian floods.

One of the key issues this paper will address is whether or not SOF should have its own “air arm” and how this would affect the RCAF. Documented evidence suggests the RCAF leadership would be opposed to this, in particular the “indivisibility of air power” aspect of the RCAF that came out of the formation of Air Command in 1975 (See Goette/March source in biblio list below) and outlines some of the key issues. The practice is that when it comes to ownership, the RCAF will fight the other services tooth and nail, but when it comes to some kind of operational control arrangements, and more rarely operational command, the RCAF comes fully on board to support the other element.