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## AIRSTRIKES IN COIN OPERATIONS: FIGHTING THE MYTHS

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**JCSP 43**

### ***Exercise Solo Flight***

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## INTRODUCTION

In 2006, then Lieutenant-General David Patraeus co-authored the United States (US) Army and the United States Marine Corps combined arms field manual for counterinsurgency. Largely touted as an extremely influential document, it failed to make any significant mention of the role of airpower.<sup>1</sup> Not surprisingly, retired Air Force Major-General Charles J. Dunlop Jr. has been a vocal critic of the document and its near-exclusion of airpower, writing "... it represents an astonishingly 'fossilized' take on current and emerging airpower capabilities."<sup>2</sup> These domain centric arguments while interesting, do little to advance the collective knowledge of the profession of arms with respect to the joint counterinsurgency (COIN) fight. The truth is COIN operations are extremely complex and, as the US Army's 35<sup>th</sup> Chief of Staff General Peter Shoomaker pointed out in a 2006 interview, "... anyone who thinks you can win these kinds of things in one dimension is not being honest."<sup>3</sup> While a population cannot be secured, developed, advised or trained from 30,000 feet; it is the reach, speed and flexibility inherent in airpower that enables the whole of government effort to do so.<sup>4</sup> This paper will show that the effective employment of airpower, in particular precision airstrikes should, and will, represent a critical component of the comprehensive military approach necessary to ensure the successful conduct of COIN operations for the foreseeable future. In particular, it will demonstrate why politicians of Western nations are more likely to look to airpower as its primary military response at the strategic level. It will go on to discuss how airstrikes must be integrated into the comprehensive effects based approach at the operational level. Finally, it will outline the recent technological

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<sup>1</sup> Phillip S. Meilinger, "Counterinsurgency from Above." *Air Force Magazine* 91, no.7 (2008), 37

<sup>2</sup> Charles J. Dunlop Jr "Shortchanging the Joint Fight? An Airman's Assessment of FM 3-24 and the Case for Developing Truly Joint COIN Doctrine" (Air University: Maxwell AFB AL, 2008). 19.

<sup>3</sup> General Peter Shoomaker, "Ground Truth", September 14, 2006 (interview) available at <http://www.govexec.com/features/0906-15/0906-15s1.htm> (last visited May 6, 2017).

<sup>4</sup> Angelina M. Maguinness, "Counterinsurgency: Is 'Air Control' the Answer?" *Small Wars Journal* (2009), 4.

advances that enable airpower to be effectively employed in the collateral damage sensitive environment of COIN operations at the tactical level.<sup>5</sup>

## **AIRPOWER IN COIN OPERATIONS**

Airpower has played a role in counterinsurgencies since air forces themselves were in their infancy. One of the earliest examples of airpower application in the COIN environment was seen in the interwar years when economic constraints forced the British to manage its colonial holdings through ‘air policing’.<sup>6</sup> While these operations were not always successful from a strictly military standpoint; early approaches to the problem resulted in indiscriminate bombings of villages, they were quite successful from a political standpoint as they provided good effects with low cost in both financial terms and casualties.<sup>7</sup> The lessons learned in the British Air Policing era have not been forgotten by both airpower zealots and practitioners alike. Comparisons to the Air Policing have been made in a number of academic articles when making reference to more recent successful COIN air campaigns such as Bosnia in 1995, Kosovo in 1999, Afghanistan in 2001 and Iraq in 2003.<sup>8</sup> Despite this long history of the application of airpower in COIN operations, there remains little in the way of official doctrine on the subject. In fact, “The British Army Counter-Insurgency (COIN) manual devotes approximately four pages out of around 290 to the use of airpower.”<sup>9</sup> This tends to be the trend across Western militaries, including the United States whose Army and Marine Corps field manual on COIN, FM 3-

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<sup>5</sup> This paper deals specifically with conventional airpower in COIN operations being conducted in an environment of air superiority. There are recent examples of COIN operations where Special Operations Forces worked with indigenous groups or where air superiority was not realized. The discussion to complete the arguments presented for such environments would require further research including classified references and is beyond the scope of this paper.

<sup>6</sup> Angelina M. Maguinness, “Counterinsurgency: Is ‘Air Control’ the Answer?” *Small Wars Journal* (2009). 2.

<sup>7</sup> Phillip S. Meilinger, “Counterinsurgency from Above.” *Air Force Magazine* 91, no.7 (2008): 39.

<sup>8</sup> *Ibid.*, ...39.

<sup>9</sup> Derek Read “Airpower in COIN: Can Airpower Make a Significant Contribution to Counter-Insurgency?” *Defence Studies*, volume 10, Issue 1-2, 2010. 126.

24/MCWP 3-33.5, as previously mentioned, paid an equal amount of attention to air operations. The limited doctrinal discussion of air power by Joint partners ultimately resulted in the US Air Force publishing its own doctrine in the broader context of Irregular War in August of 2007.<sup>10</sup> The Royal Canadian Air Force (RCAF), for its part, has not published specific COIN doctrine although it does receive passing mention in the Canadian Forces Aerospace Shape Doctrine which provides operational-level doctrine for the 'Shape' sub-function of the RCAF.<sup>11</sup> Despite this lack of published air-centric COIN doctrine airpower capabilities do make it very well suited to contributing to the overall COIN fight. In particular, when compared to the Land component, the air domain carries a number of clear advantages in irregular war; lower operational risk of casualties, ease of political support, scalability of operations tempo and ability to respond to evolving threats.<sup>12</sup> These advantages are key tenets which lead the discussion which will follow on the importance of airpower in COIN operations.

## **STRATEGIC ENDS**

Before the tactical advantages of airpower can be discussed, there must first be a fundamental understanding of the applicability of airpower towards achieving strategic ends in the comprehensive approach to COIN operations. It is no secret that today's political environment can be risk averse when it comes to accepting military casualties during operations abroad. While an airpower centric approach to COIN operations may not represent an ideal solution to an insurgency, it can represent the best value to the politicians ultimately making the decision. This is especially valid from the Canadian perspective where contribution warfare is taking on greater prominence in defence circles. Indeed, the current Canadian Chief of the

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<sup>10</sup> Dunlop, "Shortchanging the Joint Fight...", 4.

<sup>11</sup> Canada, "Canadian Forces Aerospace Shape Doctrine" B-GA-403-000/FP001, (Canadian Forces Aerospace Warfare Centre, 2014), 16.

<sup>12</sup> John T. Farquhar, "Airpower and Irregular War: A Battle of Ideas." *Air and Space Journal* 31.1 (2017), 56.

Defence Staff, General Jonathan Vance, once contended that being seen to contribute forces can often be the government's main goal when he wrote "...Canadian strategic objectives are less concerned with Canadian tactical outcomes, and more concerned with the political advantage of being seen to participate."<sup>13</sup> Along these lines, it follows that the deployment of airpower could meet both the tactical intent of delivering battlefield effects and the political intent of participation with an end result of 'success' at a lower cost in both casualties and dollars.<sup>14</sup> It is not lost on Western politicians that the advantages of speed, reach and precision strike associated with modern aircraft is delivered through platforms which provide for minimal risk of casualties to the aircrew, and of collateral damage.<sup>15</sup> It also helps that the same aircraft, proudly sporting the flag of the participant nation sends a strategic message by simply sitting on the ramp, regardless how many missions it actually flies. While this argument of course, holds true for all types of military operations, it is especially poignant in the context of irregular warfare where first and foremost, airpower is an instrument of politics. "No matter how spectacular its technological potential...Airmen must remember that airpower is simply a means to achieve a political end."<sup>16</sup> The US has seen success with this model in Afghanistan in 2001 as well as in Iraq in 2003.<sup>17</sup> It is also quite reflective of the approach Canada adopted towards Operation IMPACT and the government's decision to fight against ISIL in Iraq and Syria in 2014.<sup>18</sup> In a 3 October 2014 motion to the House of Commons, then Foreign Affairs Minister John Baird motioned that the House "...support the Government's decision to contribute Canadian Military

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<sup>13</sup> Jonathan H. Vance, "Tactics without Strategy or Why the Canadian Forces Do Not Campaign" in *The Operational Art: Canadian Perspectives, Context and Concepts*, ed. Allan English et al. (Kingston: Canadian Defence Academy Press, 2005), 281.

<sup>14</sup> Meilinger, "Counterinsurgency from Above"...36.

<sup>15</sup> Goette, "Preparing the RCAF...", 97.

<sup>16</sup> John T. Farquhar, "Airpower and Irregular War: A Battle of Ideas." *Air and Space Journal* 31.1 (2017), 51.

<sup>17</sup> Meilinger, "Counterinsurgency from Above...", 39

<sup>18</sup> Canada, "Operation IMPACT" accessed at [www.forces.gc.ca/en/operations-abroad-current/op-impact.page](http://www.forces.gc.ca/en/operations-abroad-current/op-impact.page). Last accessed May 6, 2017.

assets to the fight against ISIL... including airstrikes for a period of up to six months...and note that the Government of Canada will not deploy troops in ground combat operations.”<sup>19</sup> The motion, which explicitly favored airpower over land, passed four days later, and serves as a recent Canadian example of the political will to contribute to operations through air power while outright withholding the risky business of deploying ground forces.

The idea of replacing boots on the ground with the technologically advanced capabilities of the air domain is not simply a sound policy decision enabling risk adverse politicians to offer the appearance of commitment. There are very sound operational reasons to follow such an approach as well. If the most natural form of irregular warfare is resistance against a foreign, occupying force as argued by Sir Lawrence Freedman of King’s College in London, then it follows that the massing of foreign troops into a COIN environment is likely to aggravate an already tense host nation population.<sup>20</sup> Furthermore, the sheer numbers of troops estimated to be required to successfully conduct COIN operations is in and of itself a limiting factor. The US Army field manual on counterinsurgency document outlines a required troop density of 20 COIN troops for every 1000 civilians in the population to be influenced.<sup>21</sup> In the Canadian context, with an army of only 23,000 full time serving members, participation in COIN operations following this model would be restricted to only the most sparsely populated regions of the world.<sup>22</sup> When held in this light, it becomes clear that the land-centric approach when applied to the Canadian context is not feasible. It follows that experts such as Dunlop and Meilinger are astute when they argue that a more effective, comprehensive approach is to employ airpower to

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<sup>19</sup> Honourable John Baird, Minister of Foreign Affairs, “Motion to the House of Commons on expanding Canada’s Military mission against ISIL”, 3 Oct 2014

<sup>20</sup> Sir Lawrence Freedman, “Regular and Irregular Warfare.” *Strategic Datalink* no. 1 (August 2008), 1.

<sup>21</sup> United States, “Counterinsurgency”,

<sup>22</sup> Canada, “About the Army” *accessed at* [www.army-armee.forces.gc.ca/en/about-army/organization.page](http://www.army-armee.forces.gc.ca/en/about-army/organization.page). Last accessed May 6, 2017.

support indigenous groups through precision strike and advanced ISR, enabled by Special Forces as required can bring effective long lasting results without the risks and liabilities associated with large western ground forces occupying territory.<sup>23</sup>

The most common argument against such an approach is, of course, that a counterinsurgency is about human interaction and winning the support of the population through hearts and minds style campaigning.<sup>24</sup> In fact, it has been argued that "...insurgencies are by nature ground oriented; thus, effective COIN campaigns are primarily oriented in this manner as well."<sup>25</sup> Clearly, if we accept the centre of gravity of COIN operations to be the hearts and minds of a population then it is right to question how that can be achieved without a substantial presence on the ground. The problem with this argument is that it ignores our own centre of gravity, the hearts and minds of Western populations.<sup>26</sup> At the strategic and operational level of war, practitioners are no longer afforded the luxury of thinking through problems in a purely military context. The political environment must also be considered; practitioners must reconcile those actions which should be done militarily, with the results which must be achieved politically. As has been demonstrated above, the political risk associated with large ground force deployments is simply not acceptable to the political palate when there exists other options (i.e. airpower) that can achieve results and protect the government's own centre of gravity. When one considers the environment of contribution warfare, the intent of participation is best achieved through application of the course of action demonstrating the least political risk to a government. That is to say, it is perhaps acceptable to contribute to a limited solution rather than accepting the

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<sup>23</sup> Farquhar, "Airpower and ...", 57.

<sup>24</sup> James S. Corum, "Airpower in Small Wars: Fighting Insurgents and Terrorists", (Lawrence, KS: University Press of Kansas, 2003), 49.

<sup>25</sup> Maguinness, "Counterinsurgency, is air control...", 4.

<sup>26</sup> Goette, "Preparing the RCAF...", 93.



risk associated with the perfect one. Of course, this counter-argument is only applicable to the limited environment of COIN operations which is the focus of this essay. Clearly this is not applicable to a total war concept where a nation is no longer afforded the luxury of contribution warfare.

## **APPLICATION THROUGH INTEGRATION**

Given the assumption that kinetic airpower can and will be called upon by Western nations to deliver kinetic effects within the COIN environment, it warrants discussion on the best way to integrate that power into the overall operational plan and strategic intent.<sup>27</sup> The key to the success of such operations is integration into the comprehensive approach, including the diplomatic, informational, military and economic (DIME) levers of national power. While it is undeniable that airpower becomes an attractive option for political powers searching for means to reduce personnel and resource costs associated with the military lever, airpower alone cannot solve all the political, social and economic issues associated with an insurgency.<sup>28</sup> This drives the argument that if airpower is to fulfill its potential in a COIN campaign it must integrate its capabilities into the comprehensive approach of ‘clear, hold, build.’<sup>29</sup> This approach then also necessitates the application of an effects based approach to target selection. Effects based operations within the air domain can be defined as “... a methodology in which the desired effect of an action, regardless of its scope, has to be identified first.”<sup>30</sup> This is particularly important in the context of air strikes in the COIN environment, where consideration must be given to the effect a strike will have on whole of the insurgent network. Of course, the targets most suitable

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<sup>27</sup> Paul Smyth, “Airpower and Counterinsurgency: Building on a Proper Foundation.” *Air and Space Power Journal* 25, no 2 (Summer 2011), 121.

<sup>28</sup> Maguinness, “Counterinsurgency: Is Air Control...”, 6.

<sup>29</sup> Smyth, “Airpower and Counterinsurgency...”, 121

<sup>30</sup> Christopher Coker, “Targeting in Context” in *Targeting: The Challenges of Modern Warfare* (The Hague, Netherlands: Asser Press Springer 2016), 18.

for air strike are those which are tangible and distinguishable and therefore targetable. Specific to insurgencies, the key traits to be considered in an effects based approach are structure, identity, function, scope, knowledge, membership, resources and adaptability of the insurgency.<sup>31</sup> While every insurgency is different and may place greater importance on specific elements, a holistic assessment of the tangible, distinguishable elements within the network following this framework will yield results in line with the comprehensive approach. Of course, as pointed out by USAF intelligence officer, Major Angelina Maguinnes "...the best COIN strategy is the integrated synchronization and application of all of the instruments of power, both tactically and strategically, as part of a coherent strategy developed into an effective operations design to achieve desired end states."<sup>32</sup>

There is a school of thought however; that the effects based approach when exercised in the COIN environment should lead to a 'force withheld' concept. The force withheld construct is built on the assumption that kinetic air operations are designed to achieve rapid, decisive effects on an insurgent centre of gravity or against critical nodes of their system of systems. The force withheld concept argues that this is not achievable in the flat non-hierarchical command system of an insurgent network and "...that the idea of simply identifying and destroying the critical parts of a generic insurgent network has been undermined by the experience of operations against contemporary adversaries."<sup>33</sup> The concept instead argues for greater emphasis on non-kinetic actions such as shows of force and shows of presence where an armed aircraft is flown over an area of concern in an "...attempt to diffuse a specific situation which, if allowed to

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<sup>31</sup> Major Jason M. Brown, "To Bomb or Not to Bomb?: Counterinsurgency, Airpower and Dynamic Targeting." *Air and Space Power Journal*. Volume 21, Issue 4 (Winter 2007), 77.

<sup>32</sup> Maguinnes, "Counterinsurgency: Is Air Control...", 6.

<sup>33</sup> Harry Kemsley, "Air Power in Counter-insurgency: A Sophisticated Language or Blunt Expression?" (*Contemporary Security Policy*, Volume 28, Issue 1, 2007), 120.

continue, may be detrimental to friendly forces interests or objectives.”<sup>34</sup> While such an approach can be highlighted as a non-kinetic action delivering desired effects, it is clear that the effect is a result of the fear or expectation of kinetic action. It is this expectation which enables a non-kinetic show of force to deliver effects. Repeated shows of force, without subsequent kinetic action would result in the ‘boy who cried wolf’ effect rendering the non-kinetic action ineffective. That is to say, the non-kinetic effect of a show of force is dependent upon the destructive nature of kinetic action to deliver its effects.

### **THE TECHNOLOGY ADVANTAGE**

So we have seen that the current political environment with respect to COIN operations favors air action over land, and that there are operational advantages to employing air power in strikes using an effects best approach. It now rests to demonstrate that such airpower can be delivered in a manner which facilitates tactical objective without aggravating strategic intent though collateral damage. The area of airpower most often marginalized in the COIN discussion is the use of ‘fast air’ or fighter aircraft and remotely piloted aircraft (RPA). The issue most taken to task of course is the employment of air strikes. While this also relates to bomber aircraft as much as RPAs and fighter aircraft, it seems to be the latter communities which get highlighted as the most prevalent cause of errant airstrikes and civilian casualties. To understand this school of thought we must first discuss the issue of civilian casualties in a COIN environment.

It is well accepted that the centre of gravity of a COIN operation is the winning of the ‘hearts and minds’ of the host nation population. We need only investigate deeper into the FM 3-24/MCWP 3-33.5 Counterinsurgency, which warns that “...needlessly harming innocents can

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<sup>34</sup> United States, “JFIRE – Multi-Service Tactics, Techniques and Procedures for the Joint Application of Firepower,” (AFTTP(I) 3-2.6, December 2007), 59.

turn the population against the counterinsurgency effort.”<sup>35</sup> This is of course a very valid statement which must be considered whenever airpower effects are applied in the COIN environment. It also speaks to the importance of applying the tenets of proportionality and discrimination to any air attack. Again, this is applicable to all action taken in the COIN environment but, specifically with respect to airstrikes where the collateral damage reports generally garner Western media attention. In such an environment, commanders at all levels must be sure that the proverbial ‘juice’ is worth the squeeze. This concept is also highlighted in US doctrine which states “In COIN environments, the number of civilian lives lost and property destroyed needs to be measured against how much the targeted insurgent could do if allowed to escape.”<sup>36</sup> From the Canadian perspective this is particularly problematic given that “... the RCAF goes to great lengths to ensure discrimination, proportionality and accuracy but it is the extremely rare – and sometimes blatantly false – reports of collateral damage and civilian casualties that dominate the news cycle...”<sup>37</sup> And this is of course not simply a Canadian issue, it was also highlighted by Dr. Saru Kainikara of the Royal Australian Air Force’s Air Power Development Centre when he wrote “...justly of unjustly, the immediate mental picture formed in the mind of the general public when collateral damage is mentioned is that of an air strike gone terribly wrong.”<sup>38</sup> The conclusion that should be drawn by airpower practitioners and those elements of the Joint Force who rely on them though is not that airstrikes need to be avoided but rather that airpower must be employed with those realities in mind. Fortunately, the current state of technology and of tactics techniques and procedures are advanced well beyond the point

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<sup>35</sup> United States, “Counterinsurgency” *FM 3-24 / MCWP 3-33.5* (Washington DC), 2006, 5-12.

<sup>36</sup> United States, “Counterinsurgency”, ... 7-32.

<sup>37</sup> Richard Goette, “Preparing the RCAF for the Future: Defining Potential Niches for Expeditionary Operations.”, To be published.

<sup>38</sup> Saru Kainikara, “Seven Perennial Challenges to Air Forces” (Canberra: Air Power Development Centre, 2009), 61.

where the risks associated with airstrikes should be considered prohibitive in the COIN environment. There are three key elements of the delivery of air munitions that make them a reasonable choice in an environment intolerant of collateral damage; the precision of air delivered munitions, the advancement of low yield munitions, and the accuracy of the joint enabler. Together, these capabilities form a system entirely designed to minimize collateral damage and still deliver decisive effects.

Even in the last decade there have been a number of advancements in the precision of air delivered munitions. The use of non-precision weapons is essentially a thing of the past as there now exists a societal expectation of precision in Western nations as precision guided munitions (PGMs) have given the West a huge asymmetric advantage over adversaries in the last twenty years.<sup>39</sup> In fact the use of PGMs, either terminally guided by GPS, laser or radar, has increased from only eight percent during the First Gulf War to one hundred percent in the current US operation in Iraq and Syria, Operation Unified Protector.<sup>40</sup> While the advent of precision guided munitions is hardly a new concept, advances in the targeting pod technology used to employ them is relevant. Although there are a number of different targeting pods currently being employed by Western nations, we can sufficiently generalize to state that the modern targeting pods being flown in COIN theatres today are capable of day and night color imagery, IR imagery and IR target marking, laser spot and designation and video downlink capability. As such, fighter aircraft can operate at standoff distances while maintaining video and radio downlink to troops on the ground, and accept and deliver both IR marking and laser designation of ground targets to

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<sup>39</sup> Goette, "Preparing the RCAF...", 94

<sup>40</sup> *Ibid...* 94.

enable accurate delivery of precision munitions.<sup>41</sup> The end result is an aircraft which enables aircrew to detect, identify and confirm tactical size targets outside jet noise ranges all the while, remarkably reducing the risk of civilian casualties which is a key tenet of operating within the COIN domain.<sup>42</sup> It is indeed these targeting pods that act as the interface between the precision guided munition and the aircraft. Whether the munition is laser guided, GPS guided or both, the targeting pod enables the precise delivery of the weapon to the designated point of impact.

The next element enabling airstrikes in the COIN environment is the low yield weapon itself. While not specific to any particular platform, the following low yield weapons have all been successfully employed in collateral damage sensitive areas recently.<sup>43</sup> The Hellfire II air to ground missile features a low collateral damage 20lb warhead and a semi-active laser guidance system is a key airpower element of the joint COIN fight.<sup>44</sup> Following along the same lines is the British Dual Mode Seeker Brimstone missile. Similar to the Hellfire II, the Brimstone boasts a semi-active laser guidance system and millimetric wave radar which enables the weapon to lock onto a target after launch. The weapon was specifically designed as an urgent operational requirement for RAF fighters deployed in COIN operations in Iraq.<sup>45</sup> Finally, the addition of the GBU-39 small diameter bomb (SDB) has given the Air Force yet another option for low collateral damage munitions for use in the COIN environment. The SDB is capable of standoff

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<sup>41</sup> Department of the Air Force, *Sniper Advanced Targeting Pod*, September 2015 (fact sheet), available at <http://www.af.mil/about-us/fact-sheets/Display/Article/104527/sniper-pod> (last visited May 6, 2017).

<sup>42</sup> Charles J. Dunlop Jr “Shortchanging the Joint Fight?...” 20.

<sup>43</sup> Erwin, “Tough Calls...”, 49.

<sup>44</sup> Kable Intelligence Ltd, *AGM 144 Hellfire II Missile*, (fact sheet), available at <http://www.army-technology.com/projects/hellfire-ii-missile> (last visited May 6, 2017).

<sup>45</sup> United Kingdom, “RAF Equipment – <https://www.raf.mod.uk/equipment/Brimstone.cfm>” last accessed May 2, 2017.

ranges of over 40 nautical miles and is GPS guided to the precise desired point of impact.<sup>46</sup> The lower yield along with the option for a composite casing reducing the collateral damage risk even further enables airmen and women to have an impact in areas that otherwise would have been impossible due to collateral damage concerns.<sup>47</sup> Of course in terms of low collateral damage options, there is also the option of direct fire action by air forces. Most modern fighters have either a 20mm or 25mm cannon capable of being employed in the air to ground role. As a direct fire weapon with minimal explosive effect, this air to ground option can be employed in areas where risk of collateral damage is even too high for the SDB. The US Air Force outlines general risk estimate distance for most air delivered munitions in the Multi-Service Tactics, Techniques and Procedures for Joint Application of Firepower (JFIRE) document.<sup>48</sup> The JFIRE lists the risk estimate distance for a GBU-39B with contact fusing at 135m where the risk estimate distance for the 20mm gun is only 60m.<sup>49</sup> While the target and the desired effect will of course drive the targeting decision of which weapon should be employed in a situation, it is clear that the modern air platforms bring with them a number of reasonably low collateral damage options.

The final piece of this puzzle is the accuracy of the Joint Enabler; in this case we are referring to the Joint Terminal Attack Controller (JTAC) or the Ground Force Commander requesting air action against a ground target. Precision and accuracy are words which are often used interchangeably but which have very different meanings. In a military context, the

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<sup>46</sup> Department of the Air Force, *Small Diameter Bomb*, August 2008 (fact sheet), available at <http://www.af.mil/about-us/fact-sheets/Display/Article/104573/gbu-39b-small-diameter-bomb-weapon-system> (last visited May 6, 2017).

<sup>47</sup> Dunlop, "Shortchanging the...", 21.

<sup>48</sup> United States, "JFIRE – Multi-Service Tactics, Techniques and Procedures for the Joint Application of Firepower", AFTTP(I) 3-2.6, December 2007, 109.

<sup>49</sup> Note: Risk estimate distances are the distance outside of which you could expect to see personnel incapacitation rate of 0.1%. They are meant as a tool for a commander to weigh risk on the battlefield and are not meant for the training environment. The method of calculation for risk estimate distances is classified.

difference can best be explained using the analogy of a soldier on a rifle range. A soldier firing five rounds at a target on a rifle range is *precise* if all five rounds are grouped very close together. That same soldier is also *accurate* if the five round grouping also hits the intended point of impact. In the context of air strikes, precision is simply a matter of fact in modern day air campaigns as GPS or laser guided weapons will almost always impact the exact same GPS coordinate or Laser designated point if they are properly employed. That is to say precision munitions will go exactly where you tell them to; of course if you tell them to go to the wrong spot, they will precisely go there as well. This is the question of accuracy, which depends on the quality of that same GPS coordinate or laser designation. As such, the JTAC or Ground Force Commander must be sure of the level of target location error (TLE) of a targeted GPS coordinate. Target location error is defined as "...the difference between the coordinates generated for a target and the actual location of the target."<sup>50</sup> In order to ensure collateral damage is minimized, an air strike must consist of both a precision, low yield weapon and an accurate, low TLE, targeted coordinate. Fortunately, there have been technological developments in this area as well. The Precision Strike Suite – Special Operations Software (PSS-SOF) is a software tool which works with sensory data to provide the operator with an accurate set of GPS coordinates for a targeted point using digital mapping software.<sup>51</sup> In fact, this software was recently added to the suite of overland capabilities on the Canadian CP140 Aurora currently deployed on Operation IMPACT. An unidentified member of the Canadian Air Task Force Headquarters summarized the capability by stating "...more accurate means safer for friendly

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<sup>50</sup> United States, (JFIRE...), 11.

<sup>51</sup> Canada, "Canada's Eyes in the Skies over Iraq get Sharper" July 2016 available at <http://www.forces.gc.ca/en/news/article.page?doc=canada-s-i-eyes-in-the-skies-over-iraq-get-sharper/iqdipomd>



forces and civilians – you hit only what you want to hit.”<sup>52</sup> Another technological enhancement which enables accurate target designation is the remotely operated video enhanced receiver (ROVER) system. The ROVER system allows a pilot to share the display from his or her targeting pod with a JTAC on the ground, and exchange information on objects to be targeted, and avoided. Such real time video ensures pilots and JTACs share a mutual understanding of a target, and the surrounding areas to ensure collateral damage concerns are recognized and mitigated.<sup>53</sup> This is particularly important as collateral damage is not a product of a particular weapons system; it is product of the environment surrounding a target, the weapon chosen to bring effects within that environment and the accuracy of the target location. This concept is clearly misunderstood outside the profession of arms as military analyst Charles V. Pena stated in 2007 that “...when you are dropping ordnance from high altitude when pilots cannot see the ground, there is collateral damage. That’s inevitable no matter how precisely you drop munitions.”<sup>54</sup> Clearly this represents an antiquated way of thinking which does not take into consideration the current technological capabilities. The advancements in precision delivery systems, low yield weapons and target location systems, combined with airpower’s ability to loiter over a battlefield and respond to the ground force below make strike capable airpower an absolute essential part of COIN operations.<sup>55</sup>

Of course, the argument can still be made that it only takes one errant bomb to undo all of the good work completed in the eyes of the host nation population as “...misapplied firepower creates blood feuds, homeless people and societal disruption that fuels and perpetuates the

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<sup>52</sup> Canada, “Canada’s Eyes...” July 2016

<sup>53</sup> Dunlop, “Shortchanging the Joint...”, 83

<sup>54</sup> Sandra I. Erwin, “Tough calls: In today’s wars, air strikes under fire.” National Defense 92 no.654 (2008), 46

<sup>55</sup> Norton A. Schwartz, “Airpower in Counterinsurgency and Stability Operations”, Prism, 22 (2011), 131.

insurgency.”<sup>56</sup> While this can be true, it is hardly an argument to remove from one’s arsenal a tool of significant import. The profession of arms is an inherently risky one, and risk management is one of the key responsibilities of commanders at all levels. If we are in an environment where the application of force is a necessity, than we must be prepared to do just that, all the while ensuring we are employing tactics, techniques and procedures and risk mitigation strategies that allow commanders to meet the overall intent of the COIN mission. This is highlighted when one considers that, “...despite the media’s focus on airstrikes, airpower has rarely been the cause.”<sup>57</sup> The end result is simply a force which must have “...a clear understanding of not only the tactical and operational aspects of targeting, but also the socio-cultural strategic and political issues.”<sup>58</sup> And it should go without saying that this problems set is not unique to the air domain; it exists within all services participating in the COIN fight.<sup>59</sup>

## CONCLUSION

Insurgencies are not new; they have been going on since ancient times and have been addressed in the writings of warfare theorists from Clausewitz to Mao. Airpower’s contribution to COIN operations is also not new, with documented participation dating back to the 1913 uprising in Morocco and the 1916 US expedition into Mexico to capture Pancho Villa.<sup>60</sup> Military operations of all kinds are complex in nature and resource intensive, and as such it should come as no surprise that the airpower capabilities of reach, speed and flexibility which are largely relied upon in conventional warfare, are also key in the COIN environment. It is these same capabilities which enables air forces to bring precision kinetic effects to bear in support of an

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<sup>56</sup> Farquhar, “Airpower and Irregular War...”, 52.

<sup>57</sup> Schwartz, “Airpower and stability...”, 131.

<sup>58</sup> Goette, “Preparing the RCAF...”, 90.

<sup>59</sup> Erwin, “Tough Calls...”, 48.

<sup>60</sup> Schwartz, “Airpower and stability...”, 127.

overall COIN strategic intent, in an environment where collateral damage and civilian casualties are counter-productive. This capability has been enabled through recent technological improvements providing for both the accurate and precise delivery of low yield, reduced collateral damage weapons using tactics, techniques and procedures designed to minimize political and operational risk. This capability is particularly important when weighed against the recent trend of western governments to favor deployment of air assets to COIN theatres over their counterparts in the land environment due to either real or perceived risk to both resources and personnel. In an international environment where insurgencies continue to pose a threat to the national interests of western nations such as Canada, there should be no expectation of a reduction in this requirement. As such, a comprehensive approach emphasizing the importance of these capabilities and integrating them into the overall political, economic, social and indeed military levers of national power will ensure a coordinated effort towards attaining political end states. With this in mind, it becomes quite clear that effective employment of airpower, in particular precision airstrikes will continue to represent a critical component of the comprehensive military approach necessary to ensure the successful conduct of COIN operations for the foreseeable future.

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