

Even Speed Bumps Need Protection: The Requirement for a Counter Unmanned Aerial System / Anti Munition Capability within Canadian Armed Forces Deployed to Latvia

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Introduction

With the crisis in Ukraine combined with the saber rattling, and posturing along the borders of Eastern Europe by Russia, NATO has decided to deploy four battalions into the Baltic States. Canada has agreed to lead one of these Battalions in Latvia as a framework nation and deploy up to 450 soldiers as part of its deterrence mission.

This places Canada with a serious force protection issue. Russia through the use of linking Unmanned Aerial Systems (UAS) with massed fires combined with their use of Anti Access Area Denial (A2AD) doctrine poses a threat vector we are unable to counter. This article will argue the need for an immediate Counter Unmanned Aerial System (C-UAS) / anti-munition act / shield capability to provide force protection for Canadian Army (CA) operations within Eastern Europe.

How did we get here?

The world looked on as the first coalition aircraft struck their targets on the 16th of January 1991 during the Persian Gulf War¹. This war demonstrated to the world the overwhelming might of western coalition airpower. The rapid and one sided success of the war justified western doctrine as it defeated the fifth largest military in the world. As the Iraqi military was trained and equipped using Warsaw Pact methodology their loss represented the superiority of western doctrine, methods, and equipment. This opinion was so strong at the time that the U.S. Army Strategic Studies Institute concluded that “wholesale changes in the doctrine, education, and training that contributed significantly to the operational success are not required.”² This led to a status quo approach to future western warfighting.

Standoff airpower, precision fires, Intelligence Surveillance and Reconnaissance (ISR), and force multipliers became the norm for western conflicts. Afghanistan and Iraq in particular saw coalition forces develop further along these lines of thought. Heavy reliance on airpower and UAS was standard practice for land forces. In the words of MCpl Pichovich, 1st Battalion Prince Patricia’s Canadian Light Infantry, “[infantry] section battle drill number four, Win the Fire Fight, was usually a 500 pounder.”³

¹ <http://www.history.com/this-day-in-history/the-persian-gulf-war-begins>, 23 November 2016

² An Operational Analysis of the Persian Gulf War, Colonel Douglas W. Craft, Chairman of the Strategic Research Department of the Strategic Studies Institute, U.S. Army War College, August 31, 1992

³ Canadian Forces Leadership and Recruit School professional development session Section Battle Drills, MCpl Steve Pichovich, February 2008

In essence the west taught the world how it fought wars. Former Warsaw Pact nations, Russia in particular, absorbed these lessons paying particular to the weaknesses of their doctrine in comparison. These observations combined with the inefficiency of combat troops experienced in the conflict with Georgia convinced Russia to completely modernise their entire military and doctrine⁴.

Several non-NATO nations such as Russia and China have adopted Anti-Access Area Denial (A2AD) doctrine.⁵ A2AD was created as a direct counter in response to observations of western coalitions conducting warfighting operations. This doctrine intends to destroy or prevent coalition forces entering an operational theatre (anti-access) or deny manoeuvre to forces already deployed (area denial). A2AD can be achieved through a combination of ballistic missile, cruise missile, and long range rocket fires defended by long range surface to air capabilities. These A2AD systems prohibit joint fires and effects. It has the real potential of forcing our limited air and sea capabilities outside the operational theatre, leaving tactical manoeuvre forces exposed without support while creating operational and strategic vulnerabilities.

Two opposing trends were occurring between western and eastern militaries. In the West military forces were slowly changing to counter insurgency operations as a result of decades of operations in Afghanistan and Iraq. With the end of the Cold War, most NATO nations, including Canada, divested the majority of their Ground Based Air Defense (GBAD) systems (including those capable of countering UAS and munitions) as the perceived air threat diminished. This has removed one of the key pillars required when countering A2AD. By comparison eastern militaries saw modernization and an increased focus on merging conventional with unconventional warfare to achieve political aims. A2AD and the development of Gerasimov Doctrine into what is now known as “New Generational Warfare” is an example of the differences in trends experienced on either side of the globe.⁶

Examining the use of UAS can highlight these divergent trends. Western forces developed UAS tactics to involve long endurance ISR saturation and precision fires. In essence developed to be a commander’s real time view of the battlefield with options to engage individual high value targets at the discretion of the commander. As part of their modernisation Russia’s “New Generation Warfare” built upon western concepts and further developed UAS and ISR to net multiple sensor inputs as part of a layered targeting system for massed fires.⁷

The Problem

In the Ukraine, Russia has demonstrated the ability to conduct massed thermobaric rocket and cluster munition fires within 15 minutes of target detection. They achieve this by utilising layered UAS linked to Multiple Launch Rocket Systems (MLRS). At the town of Zelenopillya, two Ukrainian mechanized battalions were destroyed from such a bombardment lasting less than

⁴ Russia Launches Unprecedented Modernisation Push, Peter Kazimiroff JDW Correspondent, Moscow, Jane’s Defence Weekly, 24 Feb 2012

⁵ New Chess Game Between West and Russia, Giulia Paravicini, 7 January 2016

⁶ Russia’s Renewed Military Thinking: Non-Linear Warfare and Reflexive Control, Can Kasapoglu, NATO Defense College, Rome, No 121, November 2015

⁷ Lessons Learned from the Russo-Ukrainian War, Dr Phillip A. Karber, The Potomac Foundation

three minutes. This was not a singular incidence but an example of how Russian “New Generation Warfare” has changed their methods of warfighting. Russians have attached dedicated tube and rocket artillery at every level of combined arms command, demonstrative of their commitment to capitalize on tactical successes.⁸

The rapidity of Russian massed fires is unprecedented. A single BM-27 Uragan battery can launch 128 220mm rockets in excess of 35 km in a single bombardment.⁹ According to Russian sources each salvo of 16 rockets has a destructive area of 200,000 m^2 to 460,000 m^2 .¹⁰ Counter – Rocket Artillery Mortar (C-RAM) systems are typically used to counter indirect fire threats in Western militaries, yet this type of attack will saturate any in-service system.¹¹ This is especially true when you consider that multiple batteries will support military objectives. Once massed fires have been launched, the Canadian Armed Forces (CAF) would be hard-pressed to effectively counter it.

The Canadian Battle Group (BG) in Latvia will be facing such fires if the situation becomes kinetic. The doctrine response is to locate the source of the fires and strike most likely with coalition airpower due to the ranges involved. Due to Latvia’s proximity to the border of Kaliningrad and the rest of Russia, A2AD systems will envelop the Canadian area of operations¹² As the Canadian operation will fall within a Russian A2AD envelope, this response will not be adequate.

Russian GBAD systems will push friendly airpower outside of their launch ranges. Knowing western reliance on precision fires every Russian made tactical GBAD system since the 9A331MK Tor M2E (SA-15 Gauntlet) is able to Counter - Precision Guided Munitions (C-PGM)¹³. While the west was focusing on C-RAM to counter the odd insurgent mortar or rocket harassing fire eastern militaries were strengthening their forces to defend against large scale coordinated precision strikes. Even if ordnance is launched, the Russian Integrated Air Defence System (IADS) which uses tactical GBAD systems to defend manoeuvre forces and strategic air defence has the ability to destroy our precision fires. “The reality of evolving IADS technology and its global proliferation is that most of the US Air Force combat aircraft fleet, and all of the US Navy combat aircraft fleet, will be largely impotent against an IADS constructed from the technology available today from Russian and, increasingly so, Chinese manufacturers.”¹⁴

The next likely western response would be to call upon coalition sea-based or long range rocket fires. Both capabilities are able to be engaged and countered by IADS and A2AD systems. When the C-PGM capabilities of tactical GBAD systems are combined with the area denial and

⁸ Lessons Learned from the Russo-Ukrainian War, Dr Phillip A. Karber, The Potomac Foundation

⁹ Splanv 220mm BM 9P140 (16 round) Multiple Rocket Launcher Upgrade, Land Warfare Platforms: Artillery & Air Defence, Janes his, 16 June 2015

¹⁰ Russian Uragan Multiple Rocket System, Jane’s Intelligence Review, 01 Jan 1995

¹¹ Counter-Rocket Artillery Mortar Futures, Dr Carlo Kopp, Land Warfare Conference, Oct 2010

¹² Russian Anti-Access and Area Denial (A2AD) Range: August 2016, Institute for the Study of War, <http://www.understandingwar.org/backgrounder/russian-anti-access-and-area-denial-a2ad-range>

¹³ Counter-Rocket Artillery Mortar Futures, Dr Carlo Kopp, Land Warfare Conference, Oct 2010

¹⁴ Surviving the Modern Integrated Air Defence System, Dr Carlo Kopp, 3 February 2009

counter ballistic missile capabilities of systems such as the S-400 Triumf (SA-21 Growler)¹⁵ an integrated and layered system created to nullify western methods of attack can be seen.

We have already observed the effects of how easily Russia can employ A2AD. In response to Turkey shooting down one of their SU-24 Fencers, they deployed an S-400 Air Defence unit to Hmeimim airbase near Latakia¹⁶. This one S-400 unit then dominated the entire Syrian airspace, altering NATO sorties throughout the entire AO for fear of engagement. Through that deployment, the Russians controlled and denied over 200 km of Turkish sovereign airspace as well as the entire airspace over Cyprus, Lebanon, and half of Israel.

In the case of Latvia there are numerous S-400 units deployed to the region both in Kaliningrad and along the western boarder of Russia. These denial systems are defended closely by Pantsyr-S1 (SA-22 Greyhound) systems.¹⁷ With the addition of long range cruise missiles in the theatre which threaten naval forces and staging areas it is easy to see how manoeuvre forces, such as the Canadian BG, operating within these threat envelopes can be isolated from joint fires and support.

What can we do about it?

To counter the acknowledged A2AD threat present in Eastern Europe, the US Chairman of Joint Chiefs of Staff General Martin Dempsey released the Joint Operational Access Concept on 17 Dec 2012. The intent of this document was to articulate the vision for all allied forces operating within denied environments. Specifically highlighting force protection, the paper calls for capabilities able to defeat enemy targeting equipment, as well as “expeditionary missile defense to counter the increased precision, lethality, and range of enemy (A2AD) systems.”¹⁸

While fighting in a denied environment created by A2AD, manoeuvre forces cannot rely on outside effects as they will be isolated. Each manoeuvre commander must bring a complete set of integral capabilities required to achieve operational aims as a result of the fact that once A2AD systems envelope a force, it will be operating on its own. General Milley the Chief of Staff of the US Army advised that “[t]he Army – yes, the Army - we’re going to sink ships and dominate the airspace above our units from enemy air and missile attack.”¹⁹

“Soldiers will struggle just to survive on a battlefield more lethal than anything we’ve seen since at least World War II.” General Milley explained, “Land-Based forces now are going to have to penetrate denied areas to facilitate air and naval forces. This is exact opposite of what we have done for the last 70 years, where air and naval forces have enabled ground forces.”²⁰

¹⁵ S-400 Land Warfare Platforms: Artillery & Air Defence, Janes iHs, 30 August 2016

¹⁶ Russia S-400 Syria Missile Deployment Sends Robust Signal, Jonathan Marcus, BBC news, 1 Dec 2015

¹⁷ Pantsyr Family Land Warfare Platforms: Artillery & Air Defence, Janes iHs, 9 August 2016

¹⁸ US Guidance Boosts Joint Operational Response to Counter A2AD Threat, Daniel Wasserby Senior Americas Reporter, Janes Defence Weekly, 20 Jan 2012

¹⁹ Miserable, Disobedient & Victorious: Gen. Milley’s Future US Soldier, Sydney J. Freedberg Jr, 05 October 2016,

²⁰ A ‘Highly Lethal’ War Of ‘Fleeting’ Advantages: Multi-Domain Battle, Sydney J. Freedberg Jr, 14 November 2016

Lt Gen Hodges, Commander of US Army Europe, is currently looking to the government of Romania to provide Gepard SPAAG as a means of force protection for the US Enhanced Forward Presence Battalion. The Gepard is “a great air defence cannon mounted on a Leopard chassis, I’d love to have that,” stated Lt Gen Hodges.²¹ Lt Gen Hodges was further quoted as saying, “[c]ounter-UAS would absolutely be in the top three or four things that we need, and I am confident we are going to have some other systems that are coming down the road... but I need something now.” Speaking alongside Lt Gen Hodges, the German Army Chief of Staff Lt Gen Jorg Vollmer said, “[w]e were very good in the old days, we were very good in Afghanistan, we have to get all these capabilities back.”

That the foremost super power in the world is looking for nations that possess “previously owned” equipment to provide a capability they have lost is simply striking. Abroad, America possesses no effective counter to the UAS threat as their National Guard Avengers are tasked with homeland defence. From a Canadian perspective, we must realise that we cannot depend on this capability being provided by others.

While some have likened the deployment of NATO forces to Eastern Europe as a “speed bump” or a “tripwire”²² we cannot simply dismiss them as expendable. They must be a credible and capable deterrent. In the worst case scenario they should be able to conduct the operations we ask of them by achieving more than simply laying down their lives.

The Canadian BG will be deploying into an extremely volatile operating environment without the ability to protect itself from hostile indirect fires. Due to the disparity of firepower it would be extremely difficult for a Canadian manoeuvre force to destroy hostile massed fires without close contact. Separating the fires from their method of targeting is a viable alternative.

An immediate C-UAS / anti-munition act / shield capability is required to enable manoeuvre free from hostile targeting. Manoeuvre will enable the destruction of hostile A2AD systems thus allowing Joint Fires to resume or to empower the BG to withdraw from an untenable situation. Manoeuvre is essential to the survival of the BG. In a kinetic situation, any attempt to achieve either of these aims while under observation from hostile UAS will result in the total destruction of the BG as witnessed at Zelenopillya.

While we wait decades for procurement projects to bear fruit our soldiers will be deploying to Latvia before any capability to protect them will be acquired through traditional means.²³ An immediate solution is required as a lead in to a long term steady state. Canada could acquire or lease through an Urgent Operational Requirement (UOR) a current or active C-UAS / anti-munition system in the near term until the scheduled GBAMD project takes over. Instead Canada could look to fill the NATO capability void by augmenting CAF and The Royal Regiment of Canadian Artillery (RCA) sense capabilities with the acquisition of an act capability in order to assume a larger coalition force protection role. Finally Canada could lease a system

²¹ For Want of A Nail: Awful Missing Pieces of NATO, Sydney J. Freedberg Jr, 6 October 2016

²² It’s not your grandfather’s Cold War, Canadian and NATO officials insist, Murray Brewster, CBC News, 11 July 2016

²³ Ground Based Air and Munitions Defence Briefing to ACDB, MWO M.J. Martin DLR 2-4-2, 2 June 2015

currently in storage within NATO to provide some limited capability, to include the Gepard or similar systems.

Conclusion

If the Canadian government and, by extension, the CAF intends to deploy to Eastern Europe with a view to increasing our status on the world stage as a credible coalition partner, we must deploy with a military force that is credible, sustainable and enabled with the means to protect itself. This situation is unlike our training scenarios whereby we wargame capabilities we don't have by simply attributing them to our allies. The Canadian Task Force (TF) Commander in Latvia must possess the means to act, and with the presumption that we must provide our own, integral defensive capabilities. Without Force Protection able to counter the UAS or munition threat, we will unnecessarily be putting Canadian and coalition ground forces in harm's way. Knowing what we know about the threat environment, reinforced by the destruction of two Ukrainian mechanized battalions in Zelenopillya by Russian bombardment by way of example, it would be negligence to do otherwise.

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