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THE FUTURE OF THE ARMOURED CORPS IN MILITARY OPERATIONS IN URBAN TERRAIN

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Exercise Solo Flight

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EXERCISE *SOLO FLIGHT* – EXERCICE *SOLO FLIGHT*

**THE FUTURE OF THE ARMoured CORPS
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Maj Alfred Siu-Hung Wong

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THE FUTURE OF THE ARMOURED CORPS IN MILITARY OPERATIONS IN URBAN TERRAIN

Introduction

The introduction of the tank in WW1 was to break the stalemate of trench warfare and would demonstrate an entirely new form of warfare, whose capabilities would change warfighting forever. Fast forward 100 years later, tanks still have a relevant role on the battlefield still contributing to the fight regardless of the expansion of technology. One of the things that has changed over the years is where tank battles are conducted. As population increases, urban areas have grown and developed, which has caused a change to where tank engagement occurs. It is seldom that tank engagements are conducted on an open battlefield where tank warfare thrives, but in urban areas where the defender relishes in their advantages. Even with the migration of tank engagements in the urban settings, tanks have made a significant impact and this is terrain that we must ensure to embrace. Tank battles in Fallujah 2004, Israel-Lebanon 2006, and Afghanistan 2007 are examples of where tanks were used in an urban setting. While there are academics that believe that tanks do not belong in urban areas,¹ there are others that disagree with this line of argument.

The purpose of this paper is to illustrate the success of the use of tanks in urban settings and will be measured against the characteristics of armour² which are firepower, protection, flexibility, mobility and inability to hold ground. The application of these characteristics will demonstrate their suitability and the positive results will serve as an excellent example of

¹ Major Alan Mosher, *Light Armor MOUT Doctrine: Imperative Change or Business as Usual?* (Monograph paper: School of Advanced Military Studies, 1994), 3.

² Canada. Department of National Defence, *B-GL-305-001/FP-001, The Armoured Regiment In Battle*. (Ottawa: Department of National Defence, 1990), 1-2.

measure of effectiveness. With the change in environment, the Armoured Corps must embrace Military Operations in Urban Terrain (MOUT) in order to stay relevant,³ if not they will be relegated to a backseat in the future. By examining several historical urban conflicts, this paper will demonstrate that the Armoured Corps is a key stakeholder in urban operations and as a result will illustrate the success of tanks in urban environment.

Scope

Success in warfare is defined as achieving the aim of the mission; however, from time to time this may not be the case. If success comes at a high cost, such as casualties, but achieves the mission aim does this mean it is successful? For example, the US Army Ranger raid in Mogadishu in 1993 accomplished the mission with the capture of General Aididi, but they took a significant number of casualties.⁴ So was this a success or a failure? The high casualties and the political fallout indicates that this mission was a failure for a multitude of reasons that will not be discussed. If the army Rangers were allowed to use tanks and other heavy armour, would it have mitigated the risks?

Mutually exclusive to MOUT is Hybrid warfare and it is defined as “*the synchronized use of multiple instruments of power tailored to specific vulnerabilities across the full spectrum of societal functions to achieve synergistic effects.*”⁵ Asymmetrical battles are prominent in MOUT as this allows fighters to blend into the environment and achieve their aims; however, it maybe the preferred method but does not preclude other tactics from being used. This is important to

³ Major Alan Mosher, *Light Armor MOUT...*, 10.

⁴ Dennis A. Lowe, *Employing Armor Against the Islamic State: The Inevitable Urban Combined Arms Fight* (Small War Journal).

⁵ Dr Patrick J. Cullen and Erik Reichborn-Kjennerud, *MCDC Countering Hybrid Warfare Project: Understanding Hybrid Warfare* (Multinational Capability development Campaign, January 2017), 8.

understand as Taliban fighters, who normally use Improvised Explosive Devices (IED) and guerrilla warfare tactics, took a conventional stance during Operation MEDUSA in 2006 which forced the Battle Group to rethink their approach.⁶ There are arguments that lay out the dangers of using tanks in urban setting,⁷ but the advantages will outweigh the disadvantages. With the parameters set, let's look at the factors of why tanks are a significant force in MOUT.

Firepower

Bringing accurate and dominating fire to an adversary has the ability to neutralize the threat the adversary brings and might encourage their allies or other belligerents to not engage themselves. The tank itself brings a high level of physical direct fire with its main gun, suppressing fire with its coaxial machine gun, turret top pintel machine guns, and the capability to carry a significant amount of munitions on board. Air strikes alone will never truly motivate the adversary, as described above, and it will require the application of soldiers on the ground to persuade them to move.⁸ With tanks on the streets of built up areas (BUA), there is an immediate and accurate ability to utilize firepower unlike Close Air Support (CAS) that requires the airframe to be vectored in and is limited by the fuel and munitions it carries. The Army Rangers experienced the limitation of CAS first hand in Mogadishu; the complex terrain and shifting positions added to the confusion on where to target for the best effect in support of their mission.⁹ In the Battle of Fallujah the Marines used tactics, techniques and procedures (TTP)

⁶ Major Trevor Cadieu, *Canadian Armour in Afghanistan* (Canadian Army Journal 10, no. 4, Winter 2008), 5.

⁷ Major Alan Mosher, *Light Armor MOUT...*, 3.

⁸ Major Douglas F. Baker, *The Relevance of Armor In Counterinsurgency Operations*, (Thesis paper: US Army Command And General Staff College, 2012), 49.

⁹ Dennis A. Lowe, *Employing Armor...*

that were developed in WWII¹⁰ and refined them to a point where they have a dedicated chapter on the use of tanks in MOUT. One of reasons why tanks bring lethality on the battlefield is that they can offer accurate direct fire, unlike artillery and air strikes which have greater probability of error.¹¹ Even with precision guided munitions, they cannot offer the same level of accuracy which a tank will, which also includes a reduced collateral damage probability.

As a professional Army, and one under constant public scrutiny, the Canadian Armed Forces (CAF) must minimize collateral damage at all costs and any use of weapons must follow the Geneva Convention, and be of a proportionate level of violence to the task at hand.¹² With this in mind, one finds emphasis on the requirement for direct or precision munitions to neutralize the enemy. Tanks will provide the intimate support to the infantry and the precision fires that are required to minimize collateral damage. In Fallujah, the Marines brought training tank rounds; these rounds have their warhead filled with cement, yet they are able to mimic the ballistic trajectory of live warheads in order maintain their accuracy.¹³ The purpose of this was not only to minimize the damage, as all professional militaries are bound to, but to create so called “mouse holes” so that the infantry could gain entry into buildings without using normal entrances. As the advantage in urban operations typically falls to the defender, the Marines used creative ways to avoid canalizing terrain or kill zones and gave themselves what advantages they could.

¹⁰ Ibid.

¹¹ Carter Malkasian, *Signaling Resolve, Democratization, And The First Battle of Fallujah* (Journal of Strategic Studies, Vol. 29, No.3, June 2006), 437.

¹² International Committee of the Red Cross, “International Humanitarian Law: Rule 14 – Proportionality in Attack” last modified [or accessed] 28 May 2018, https://ihl-databases.icrc.org/customary-ihl/eng/docs/v2_rul_rule14

¹³ Professor Richard M. Ogorkiewicz, *Armor And Future Urban Warfare* (Armor Journal, March-April 2004), 22.

On the psychological plane, tanks are intimidating to the enemy as a large beast that not only can take a lot of punishment but can deal its fair share as well.¹⁴ The tank will draw the adversary's attention to it, and they will attempt to focus their efforts in an effort to defeat it. In contrast, the tank on the battlefield is a morale booster to friendly forces in a psychological and very practical real world way. The firepower that tanks bring to the fight is a key reason why they are suitable for MOUT. They carry more munitions and can apply the application of violence with precision, as good as, if not better than CAS. The tank in BUA will assist the infantry in gaining lodgement and also support them with accurate fire but also protection.

Protection

The tank in MOUT can and typically will draw fire from other soft targets, as the tank is typically seen as a higher priority as it provides a significant amount of fire power. As the tank draws fire, it will enable the infantry to move inside buildings or compounds to conduct their clearance drills. The tank was designed to have majority of its armour up front so that it can take the brunt of any assault which it leads. If the Marines did not have tanks for the assault on Fallujah, there would have been more casualties.¹⁵ An example of this outcome is the Army Rangers did not have this level of protection in Mogadishu which attributed to their high causality rates. Further, the Canadians in Afghanistan would have asked for tanks earlier, if they had known the Taliban was going to adopt a conventional warfighting stance and the protection of the tanks would have made a significant contribution in the fight.¹⁶

¹⁴ Tao-Hung Chang, *The Battle of Fallujah: Lessons Learned on Military Operations on Urbanized Terrain (MOUT) in the 21st Century* (Journal of Undergrad Research, Volume 6, Issue 1, Fall 2007), 33.

¹⁵ Major Douglas F. Baker, *The Relevance of Armor...*, 53.

¹⁶ Major Trevor Cadieu, *Canadian Armour...*, 7.

On the psychological plane, while it may not be the preferred way to gain confidence, seeing the tank on the battlefield taking a beating and surviving does boost confidence.¹⁷ The infantry's morale increases as they have a heavy (i.e. tank) asset to push forward and draw fire while allowing them to gain lodgement into a complex.¹⁸ Moreover, it provides the tank crew confidence in their equipment that it will protect them and allow them to force the adversary to unmask their location. There is an expectation that the squadron/company of tanks will be broken down to individual tanks crews to act as mobile pillboxes in order to provide direct support and protection to the infantry.

The Israelis saw the importance of tanks during the last several conflicts and have continually upgraded their tanks to operate in MOUT.¹⁹ This is an environment where the Israeli Defence Force (IDF) spends a good deal of its time and if they can operate in MOUT, then they can also operate in open tank country, the former being the more difficult of the two. The Merkava tank is even design to hold troops in the rear compartment acting as its own heavy armoured personnel carrier, which emphasizes the importance of the tank-infantry cooperation. Moreover, the infantry will protect the tank from tank hunting teams.²⁰ The mutual support, psychological effects are the reasons why the tanks are suited for MOUT.

¹⁷ Corporal Shawn C Rhodes, *Tanks Take 'Grunt' Out of Grunt Work* (Marines, July-September 2004), 44.

¹⁸ Kendall D. Gott, *Breaking The Mold – Tanks In The Cities* (Fort Leavenworth: Combat Studies Institute Press, 2006), 105.

¹⁹ David E. Johnson, *Military Capabilities for Hybrid War – Insights From The Israel Defense Forces In Lebanon And Gaza* (RAND, 2010), 4.

²⁰ Major Douglas F. Baker, *The Relevance of Armor...*, 62.

Flexibility

The use of tanks in MOUT can vary from direct action, support, to a Quick Reaction Force (QRF) Mission which provides the commander a multitude of options, as the tank is suited to all of these tasks. The Canadians in Afghanistan commonly used tanks as outer cordons as their weapon systems could safely keep insurgents at bay without threatening what they were protecting.²¹ This would keep the infantry conducting Key Leaders Engagements safe from harassing mortar fire, rocket attacks and other direct actions. The Marines incorporated tanks into the MOUT doctrine and refined TTP from Fallujah²² an example of the TTP is the use of tanks as markers in BUA to identify where the lead units were and to assist in the common operating picture. Another example is the use of tanks in overwatch positions for convoy escort; this is commonly known as the tunnel method²³ Tanks would provide direct fire support along the route of the convoy usually in high risks areas so that they can react quickly to any issues. With the tanks mobility, firepower and the psychological effects it has on the enemy, this added more tools that tanks brought to the fight.

The Marines use of tanks-infantry cooperation had improved throughout the conduct of Fallujah so much so that the infantry were identifying targets for tanks to engage with laser designators, tracers, and chalk rounds.²⁴ The difficult part of the splicing of tanks, which is chopping up formed group into individual units, will diminished the shock action effect as each tank was reduced to a mobile pillbox. Moreover, it became more difficult to sustain individual

²¹ Major Trevor Cadieu, *Canadian Armour...*, 20.

²² US Marines, *Marine Corps Tank Employment* (Washington, DC: Department of the Navy, 2005), Chapter 9.

²³ Major Douglas F. Baker, *The Relevance of Armor...*, 69.

²⁴ Canada. Department of National Defence, *B-GL-322-007/FP-001, Unique Operations – Urban* (Ottawa: Department of National Defence, 2006), 206.

tanks vice grouping them together.²⁵ The recovery of tanks illustrates the strain on the tank sub-unit sustainment as it is spread out within the operating area. Further, at the troop/platoon level it is further water down as they are no longer in control as a supporting arm and this reflects the negative effects with using tanks in MOUT. While the breaking up of tank troops for mobile pillbox may not be the best use for them, they can quickly come together and are flexible enough to adapt to the all situations which makes them very suitable for MOUT.

In MOUT the adversary has the advantage, as they are able to shape the battlefield in order to funnel friendly forces into deadly or unfavourable ground. Tanks have the speed and mobility to move great distances fast,²⁶ which comes in handy when required to reinforcement a position. Further, the CAF has adopted Adaptive Dispersive Operations (ADO) which is the force employment concept of the Army of tomorrow.²⁷ This publication identifies the requirement for the possibility of full spectrum operations in the same operation area, which means that combined arms teams cannot be mission specific. They must be able to conform to all aspects within ADO and tanks help with this notion. While a tank is not the greatest image for Peace Support Operations (PSO) it is a great deterrent to those who want to cause unrest.²⁸ The use of tanks in an urban environment provides the commander many options, thus attributing to their ability of flexibility on the battlefield.

²⁵ Major Douglas F. Baker, *The Relevance of Armor...*, 59.

²⁶ *Ibid.*, 56.

²⁷ Canada. Department of National Defence, *Land operations 2021 Adaptive Dispersed Operations The Force Employment Concept For Canada's Army of Tomorrow* (Kingston: Department of National Defence, 2007), 4.

²⁸ Sean M. Maloney, *Are We Really Just: Peacekeepers? The Perception Versus The Reality Of Canadian Military Involvement In The Iraq War* (Institute for Research on Public Policy), 5.

Mobility

The conflicts in Mogadishu (1993) and Chechnya (1995) are used as hard lessons learned in MOOT as they lacked the battlefield mobility. The lack of mobility forced soft vehicles into kill zones or prevented the friendly forces from entering certain areas of the town which reduced their effectiveness and ability to engage the enemy.²⁹ Heavy armor such as tanks do have the battlefield mobility and can breach majority of hasty obstacles in BUA. The infantry lack the ability to breach the obstacles unless they have combat engineers attached to them. As tanks punch through the obstacles, it will allow the infantry to flow through behind while protection.

The CAF experienced this first hand in Afghanistan with the first deployment of tanks. The LAV3 fleet was forced to use roads which Taliban could easily lace with IED in attempt to destroy the vehicles. With the use of Armoured Engineers or fighting tanks with implements such as bulldozer blades, a tank squadron was able to breach new routes and mitigate the IED threat.³⁰ During the Lebanon crisis in 2006, the Merkava tank success was attributed to its mobility.³¹ Whereas, the wheeled vehicles used by the Army Rangers in Mogadishu did not have the mobility to get them through the obstacles and prevented them from reacting in a timely manner. The tank demonstrates its pedigree in that aspect alone.

The negative effect of tanks in MOOT is that it can be optically seen as an oppressing symbol.³² However, this is what ADO was describing that all equipment must be able to be used in full spectrum operations. Moreover, a significant part of Counterinsurgency Operations is

²⁹ Dennis A. Lowe, *Employing Armor...*

³⁰ Major Trevor Cadieu, *Canadian Armour...*, 18-20.

³¹ Michael B. Kim, *The Uncertain Role Of The Tank In Modern War: Lessons From The Israeli Experience In Hybrid Warfare* (The Land Warfare Papers, No. 109 June 2016), 15.

³² Carter Malkasian, *Signaling Resolve ...*, 424.

patrolling.³³ Tanks can establish cordons or escort the infantry to their location, however, it cannot patrol or walk amongst the people that one is trying to persuade. This is the downside of tanks in MOUT. Tanks have the mobility to get almost anywhere in an urban setting while providing cover for their infantry counterparts, these are the reasons why tanks are suitable for MOUT.

Inability to hold ground

One of the characteristic weakness of the Armoured Corps is that tanks cannot hold ground. The crew is too small to dismount and fight if tank is overtaken and they require infantry to support them. This is a two-way street, where the tank gets the infantry to difficult locations and takes a brunt of the assault and the infantry help cover the tanks vulnerabilities. There are numerous examples from Fallujah and Lebanon where the infantry directly supported friendly tanks effectively as the tank crew operated hatches down in order to push forward and draw fire. Since a tank crew field of view is limited by the nature of their armoured vehicle, they must rely on the infantry to cover their blinds spots and weapons gaps.³⁴ This is a mutual relationship with tanks and infantry, the combined operations enables both sides to achieve the end state and without one arm, it would be difficult.

As part of the after action review post Lebanon crisis (2006), the Israelis were looking develop remote weapon systems (RWS) that could be added on to the turret of the tank.³⁵ This upgrade is a mitigation to the tank to provide them more firepower and provide additional tools

³³ Major Douglas F. Baker, *The Relevance of Armor...*, 51.

³⁴ Dennis A. Lowe, *Employing Armor...*

³⁵ Arie Egozi, *Israeli-made Combat Proven Armored Fighting Platform* (Asia Pacific Defence Reporter, April 2017), 28.

to allow them to temporarily hold ground. The RWS would provide the crew with additional firepower to cover the limitations of the turret weapons while providing protection to the crew. The protection of the tank is an important one, as the destruction of a tank can be seen as a local victory to the adversary and a blow to the soldiers' morale to see one of their tanks destroyed.³⁶ Thus it is important to ensure that tanks are shielded from tank hunting teams and protected from close in assaults as tanks are not invincible. By knowing the limitations of tanks in BUA, the infantry can mitigate them and this one weakness can be overcome. Thus, the use of tanks is achievable in MOUT despite its inability to hold ground without infantry support.

Conclusion

In conclusion, the use of tanks in MOUT is an important one as they can sway the outcome of the battle. Tanks operating urban terrain bring fire power, protection, mobility and flexibility to fight. Not only do they operate on the physical but also on the psychological plane as well. Through the accurate application of direct fire while minimizing collateral damage, and offering protection to the infantry by shielding them or drawing fire so that they have freedom of movement. The tanks mobility will allow them to breach obstacles or travel within the area of operation virtually unrestricted. The mentality of armoured personnel and plethora of tasks enable the tank to remain flexible in situations, as they can be tasked to execute tasks within the spectrum of operations. While the tank cannot hold ground as it relies on the infantry to provide support, thus, this can be mitigated through the combined arms support with infantry.

³⁶ Lieutenant Colonel David Eshel, *Lebanon 2006: Did Merkava Challenge its Match?* (Armor Journal, January-February 2007), 12.

As demonstrated, the measurement of the armoured characteristics against MOUT clearly identifies the suitability for tanks to operate in this environment. Moreover, ADO clearly identifies that the CAF must be able to operate in all environments and has the requirement for heavy armoured assets such as tanks. If the Army Rangers had tanks for their operation in Mogadishu, one can argue that it would have changed the outcome of the battle. While this mission was considered a success as the target was captured, the Americans suffered a significant number of casualties and reinforced the risk versus reward dilemma. The philosopher George Santayana summed it up best, “*those who cannot remember the past are condemned to repeat it.*”³⁷

³⁷ Internet Encyclopedia of Philosophy, A Peer-Reviewed Academic Resource, “George Santayana (1863-1952)” last modified [or accessed] 28 May 2018, <https://www.iep.utm.edu/santayan/>

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