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THE FUTURE ENVIRONMENT OF LAND OPERATIONS AND ITS IMPLICATIONS FOR CORE FUNCTIONS

Maj H.Y. Ha

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Maj H.Y. Ha

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INTRODUCTION

It is very difficult to anticipate the future of land operations. However, it is also a very significant thing to do because we have to prepare for any future threat. If we face this future threat without any preparations, we will probably have a shortage of time in which to formulate appropriate measures. This lack of preparedness could be a lethal threat to our national security. Therefore, it is very important for us to anticipate the future of land operations by being prepared to adjust our focus on the changes that we might expect.

So, what is the best way for anticipating the future of land operations? That is, the anticipation of changes in the future environment of land operations. Because land forces are hugely affected by the environment in which they will be forced to operate, it is likely that this characteristic could be changed significantly in the future. In addition, any changes will affect current concept and the doctrine of land operations. The result could be huge changes to the application of concept and doctrine to future land operations. Therefore, by analyzing these significant changes, we will be able to deduce many of the required capabilities for preparing for the future land operations.

Based on the above arguments, this paper will anticipate the future environment of land operations and then, analyze the restrictions on land forces' core functions such as find, fix and strike.¹ Finally, through this analysis, we will be able to deduce the required capabilities necessary for preparing for future land operations.

¹ Department of National Defence, B-GL-300-001/FP-001, *Land Operations*, (Ottawa: Chief of the Land Staff, 2008), 4-21.

THE FUTURE ENVIRONMENT OF LAND OPERATIONS

What are the major factors which will change the future environment of land operations? How may we define the characteristics of the future environment of land operations? Based on research from some states, my argument is that uncertainty and chaos will be increased compared to the current situation for land operations.² There are three parts to my initial argument.

First is the change of the geographical and demographical environment.³ Future land operations will be conducted in an environment, where there is significantly increased population density and intensified urbanization.⁴ Increased population density may well create a very complex situation with a mix of diverse cultural, religious and ethnic concerns. In addition, an increased population density may also cause internal stress as a result of the competition for limited resources for survival such as water and food.⁵ Such a situation could very well change the definition of traditional military operations from the relatively simple to a very complex and multidimensional concept. For example, the role of the non-military sector will increase and cooperation amongst the military, Other Government Departments (OGDs), Other Government Agencies (OGAs), Non-Governmental Organizations (NGOs), International Organizations (IOs) and Inter-Governmental Organizations (IGOs) will have to be more frequent. On the other hand, intensified urbanization will make the environment of land operations more complex in trying to

² Department of National Defence, B-GL-310-001/AG-001, *Land Operations 2021 Adapted Dispersed Operations- The Force Employment Concept for Canada's Army of Tomorrow*, (Kingston: Directorate of Land Concepts and Design, 2007), 4.

³ Department of National Defence, A-FD-005-001/AF-003, *The Future Security Environment 2013~2040*, (Ottawa: Chief of Force Development, 2014), 109~112.

⁴ D.L. Lynk, J.C.M. Coulombe, and R.R. Kollman, "Sensor Equipment and the Urban Battlespace," *The Canadian Army Journal* 13 No.1 2010, 13-15.

⁵ Australian Defence Force, *Future Land Warfare Report 2014*, (Canberra: Directorate of Future Land Warfare, 2014), 8~10.

deal with increased population density. Highly dense urban development and a very complex urban infra-structure will make any future land operations more decentralized, and may also present strong physical obstacles for commanders who may have increased difficulty in maintaining their Situational Awareness (SA).⁶ In addition, urban density may have a significant impact on the effective use of firepower and for operating many ISR assets, plus, unintended collateral damages will be increased. Finally, these issues are very complex and may well have a restricting effect on the conduct of future land operations.

Second is the diverse environment of land operations where there are many kinds of actors. The environment of future land operations may have many actors such as armed states, armed non-state actors, unarmed non-state actors, and terrorist and international crime groups, NGOs, OGDs and Private Military Contractors (PMCs).⁷ This means that the mix of regular and irregular warfare will be intensified. One very important issue is that there will be a huge difficulty in distinguishing enemy combatants from non-combatants when armed non-state actors are part of the complex environment.⁸ This factor may well be a restriction on the conduct of any future land operations.

Third is the change which will be caused by the increasing use of sophisticated technology.⁹ In the future, technology will no doubt play an ever increasing role on the battlefield and will be used to enhance future military capability. This change will affect the future environment of land operations and will have not only positive effects but also negative effects. When it comes to positive effects, the development of UAVs and robot technology will

⁶ Department of National Defence, A-FD-005-001/AF-003, *The Future Security Environment 2013~2040*, (Ottawa: Chief of Force Development, 2014), 112.

⁷ *Ibid.*, 101~104.

⁸ Australian Defence Force, *Future Land Warfare Report 2014*, (Canberra: Directorate of Future Land Warfare, 2014), 10.

⁹ Mike Jackson, "The Future of Land Warfare," *The RUSI Journal* 148, no.4, (2003), 55.

enable land forces to introduce unmanned battle systems. Also, the management of logistics as a major consideration of land operations will be enhanced.¹⁰ And the development of space technology will enable land forces to visualize a complex battlefield and to increase the accuracy of Precision-Guided Munitions (PGMs). On the other hand, when it comes to negative effects, the development of technology will also increase an adversaries' counter-capability. And the sharing of information which will be caused by the development of technology will make SNS a more common thing and this will be a huge burden on democratic states when their adversaries will use it for psychological operations (PSYOP).¹¹

In conclusion, the future environment of land operations will have characteristics such as complex situations, diverse actors and the application of technology, which will be both positive and negative for the future. Above all, uncertainty and chaos will increase to very high levels and will become increasingly critical to the successful outcome of land operations. Now, based on the foregoing, I will examine the impact of future change on the core functions of land operations.

IMPLICATIONS FOR CORE FUNCTIONS

Activities that seek to attack an adversary's cohesion, or to affect the will of the adversary and other targets, are executed through three core functions such as find, fix and strike.¹² Although the future environment of land operations will change, the role of land forces will not be changed. After all, land forces will remain as a major actor who finds, fixes and

¹⁰ Australian Defence Force, *Future Land Warfare Report 2014*, (Canberra: Directorate of Future Land Warfare, 2014), 12.

¹¹ Department of National Defence, A-FD-005-001/AF-003, *The Future Security Environment 2013~2040*, (Ottawa: Chief of Force Development, 2014), 100.

¹² Department of National Defence, B-GL-300-001/FP-001, *Land Operations*, (Ottawa: Chief of the Land Staff, 2008), 4-21.

strikes at the enemy in order to successfully complete any operations. Therefore, analyzing restrictions to the future land forces is one of the best ways to prepare the future land operations.

FIND FUNCTION

When it comes to the Find function, finding the adversary or a potential target is a basic function that endures throughout an operation and is continually applied and assessed.¹³ Find function is not a mere search for the enemy's location. Rather, it is gaining knowledge about the enemy. This knowledge includes the enemy's intentions, strengths and weaknesses in a political, economic, social and cultural context.¹⁴ This is a basic function and a precondition for conducting land operations. There are two major affections. First, recognizing the enemy on the battlefield will be very difficult and sometimes will be impossible. Imagine that irregular forces are amongst the civilian population in very complex environment. Unlike traditional close combat warfare where the enemy is in uniform and relatively easily identifiable and uses natural or artificial means of concealment, in the future conflicts an enemy may be able to hide his or her identity within a complex cultural, religious and ethnic environment. So identifying the enemy will be very difficult. Furthermore, a high density population and intensified urbanization will add more obstacles to identifying the enemy's political intention and military capability. In addition, the increasing use of inter-personal communications such as cell phones will enhance the immediate and rapid sharing of critical information by the enemy and enable them to respond more systematically.¹⁵ After all, this situation will make it increasingly difficulty in identifying the enemy's intention and military capability. Second, there will be the difficulty in sharing situational awareness (SA) between commanders and their subordinates. Although

¹³ *Ibid*, 4-21.

¹⁴ *Ibid*, 4-22.

¹⁵ Australian Defence Force, *Future Land Warfare Report 2014*, (Canberra: Directorate of Future Land Warfare, 2014), 11.

communication technology may help to improve the system of command and control, decentralized urban operations will restrict overall SA and the enemy's counter-measures also will intensify this difficulty. This situation will not only hamper a commander's timely decision-making but also his relevant response. Thus, commanders will have to depend more on subordinate's decisions and reactions in a very decentralized and complex situation.

Based on the above arguments, the future environment of land operations will create huge difficulties in identifying an enemy's political intentions, military capabilities, strengths and weaknesses and the sharing of SA between commanders and their subordinates. Equally important is the fact that these issues, because of their increased uncertainty, will have a negative impact not only physical combat power but also psychological power.

FIX FUNCTION

Fix function can be done by denying the adversary or target his goals, distracting the adversary from his goals, or by denying him information needed to attain his goals.¹⁶ There are two major affections. First, when it comes to fixing on the physical plane, it will be very hard to fix an enemy by traditional firepower and maneuver. The future environment of land operations may well restrict using firepower and maneuver because of the complex environment with its difficulty in determining enemy combatants and in recognizing the enemy's intentions and military capabilities. In addition, intensified urbanization with its large buildings and intricate social infrastructure will reduce the effect of firepower on the future battlefield. After all, fixing the enemy by firepower and maneuver will be very difficult to conduct. On the contrary, the enemy will use this complex situation to take the initiative. The enemy will try to deprive us of

¹⁶ Department of National Defence, B-GL-300-001/FP-001, *Land Operations*, (Ottawa: Chief of the Land Staff, 2008), 4-22.

freedom of action by doing unexpected and surprise attacks. Any attack will cause not only physical damages but also psychological damages.¹⁷

Second, when it comes to fixing on the psychological plane, it will be very difficult to deny the enemy's propaganda by conducting Influence Operations (IO). Because there will be very complex actors in the future environment, it will be very hard to identify elements in a population and their leaders that are not being influenced by enemy propaganda. That is to say, it will be impossible to assess our efforts to prevent the enemy's ability to influence. And it will be very difficult to prevent or counter the effects of the enemy's propaganda because of the development of personal communication technology such as Social Network Services. Simultaneous circulation of informations will be much intensified, and it will be impossible to control this information which in all likelihood will have negative effects on military operations. On the contrary, the enemy will use this technology to create advantageous situations or to massively influence public opinion. For example, by the use its social media propaganda the enemy will be able to create wide antipathy toward friendly forces by showing possible collateral damage, child casualties and cultural or religious misconduct through SNS, it will be very dangerous for friendly forces who are conducting land operations in the hostile environment.¹⁸

Based on the above arguments, the future environment of land operations will have difficulty in fixing the enemy not only on the physical plane but also on the psychological plane. And this means that friendly forces will conduct land operations in the very hostile operating environment.

STRIKE FUNCTION

¹⁷ Australian Defence Force, *Future Land Warfare Report 2014*, (Canberra: Directorate of Future Land Warfare, 2014), 10.

¹⁸ *Ibid*, 11.

Strike function is achieved by attack and other offensive activities on the physical or psychological planes, or ideally, a combination of both.¹⁹ There are two major affections. First, when it comes to striking on the physical plane, it will be very hard to conduct because of the increased possibility of collateral damage, the restriction on the effect of PGMs and daunting psychological effect on friendly forces. This means that we will not have superiority over the enemy on the future battlefield although we will have more soldiers and be equipped and supported by better weapon systems. After all, we may not have superiority over the enemy at the decisive time and place. On the contrary, we will be required to conduct operations in a disadvantageous environment regardless of our superiority. Second, when it comes to striking on the psychological plane, it will be difficult to control our PSYOPs because of the large number of non-military and military actors and the complex operating environment. Many actors from OGDs, OGAs, and NGOs will widen their scope of involvement and this will cause complexity and increase uncertainty on the future battlefield. For commanders, this may well cause difficulty in the making of timely decisions.

Based on the above arguments, strike function as the decisive operations will also be affected by the future environment of land operations like the other core functions such as find and fix, and will be a huge obstacle for friendly forces in the conduct of successful operations.

CONCLUSION

This paper has examined the characteristics of the future environment and anticipates its effect on the future conduct of land operations focused on core functions such as find, fix and strike. To conduct future land operations successfully, relevant capabilities are required to

¹⁹ Department of National Defence, B-GL-300-001/FP-001, *Land Operations*, (Ottawa: Chief of the Land Staff, 2008), 4-23.

compensate for these restrictions. The development of technology will affect this capability in both direct and indirect ways.

Through my analysis in the future environment for land operations, these will be the most important factors in order to compensate for restrictions. First is the capability to clearly identify the enemy and to be able to guarantee correct SA. Second is the capability to deprive the enemy of freedom of action on both physical and psychological planes. Third is the capability to maximize the accuracy of weapon strikes and to minimize collateral damage. Fourth is the capability to control a complex environment so as not to delay necessary decision-making at the decisive time and place.

In conclusion, based on anticipating the environment and its affections on future land operations, land forces will have to develop and employ the required capabilities to compensate for these restrictions. These capabilities will in turn be realized or modified depending on real changes in the future environment and the development of technology.

BIBLIOGRAPHY

Australia. Defence Force, *Future Land Warfare Report 2014*. Canberra: Directorate of Future Land Warfare, 2014.

Canada. Department of National Defence, B-GL-300-001/FP-001, *Land Operations*. Ottawa: Chief of the Land Staff, 2008.

Canada. Department of National Defence, B-GL-310-001/AG-001, *Land Operations 2021 Adapted Dispersed Operations- The Force Employment Concept for Canada's Army of Tomorrow*. Kingston: Directorate of Land Concepts and Design, 2007.

Canada. Department of National Defence, A-FD-005-001/AF-003, *The Future Security Environment 2013~2040*. Ottawa: Chief of Force Development, 2014.

Jackson, Mike. "The Future of Land Warfare," *The RUSI Journal* 148, no.4, 2003.

Lynk, D.L, Coulombe, J.C.M and Kollman, R.R. "Sensor Equipment and the Urban Battlespace," *The Canadian Army Journal* 13 No.1 2010.