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OTHER ARMS AND SERVICES IN THE CONTEMPORARY OPERATING ENVIRONMENT: RESOLVING EMPLOYMENT LIMITATIONS TO IMPROVE TASK FORCE COMBAT POWER

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By LCol A.T. Benson

ABSTRACT

The Other Arms and Services Soldier, or those who are not combat arms, are employed throughout the Contemporary Battlespace in order to conduct their Primary Combat Function in support of the Task Force (TF) Commander's Mission. Contemporary experience has demonstrated that support troops who perform essential non-combat functions are targeted in the conduct of their duties and require the ability to defined themselves; they must fight to accomplish their mission. This contravenes the apparent conventional wisdom which causes all to focus the OAS soldier on trade skills to the detriment of their soldier skills. A TF Commander will accrue tremendous benefit and greatly improve his chances for mission success by changing the training of the OAS soldiers to incorporate tough and realistic soldier skills training. The Canadian Forces (CF) must ensure to the maximum extent that any soldier deploying to a theatre of operations is confident and proficient in the basics: shooting, moving, communicating and preserving the life of fallen comrades. The CF must next systematize this approach and develop a plan that integrates all appropriate doctrine and TTP. The aim is to develop a coherent approach that ensures all OAS soldiers are prepared to contribute to mission success.

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INTRODUCTION

GENERAL

All soldiers who deploy to a theatre of operations as members of a Task Force (TF)[1] have a Primary Combat Function (PCF)[2] which they carry out in support of the commander and the mission. The combat arms soldier's[3] PCF is first and foremost combat operations. The combat arms soldiers undergo focused combat training that prepares them for all phases of war, consequently they have more than enough skill and capability to handle the daily security concerns associated with routine but essential functions in which they would still be exposed to danger that could cause task/mission failure, or loss of life and mission materiel. A deployed TF will have non-combat arms soldiers who perform a PCF that is not combat but which are essential to support the battle and ultimately the entire TF. The implication is that these soldiers will be required

[1] Doctrine Defines Task Force as A temporary grouping of units, under one commander, formed for the purpose of carrying out a specific operation or mission. A TF will be established for all contingency operations, domestic or international. As the TF will be a mission specific grouping, it may or may not contain elements of two or more environments of the CF. Should the TF be multi-Environmental in composition, then the adjective "joint" shall be employed to describe all aspects of the operation in Canada. Department of National Defence, B-GJ-005-300/FP-000 "Canadian Forces Operations," (Ottawa: 2005), 7-1, GL-10.

[2] Primary Combat Function (PCF) is a working definition used in this paper to denote the principle job that a CF member is require to do as part of their MOS or trade related occupational specification. It should be considered only approximately half of the skill sets that any CF member should have. The remainder is determined by the CF general specification. In the case of the land environment it is the NCMGS (Land Force Requirements) A-PD-055-002/PP-002. In this paper it roughly equates to what the author refers to as soldier skills, these are the fundamental skills that everyone should have to conduct their PCF in the COE.

[3] Combat Arms in the Canadian Context include: infantry, armour corps, artillery, and combat engineer in Canada. Department of National Defence, B-GL-300-001/FP-001 "Land Forces - Land Operations," (NDHQ: Draft 2007), 5.

to work with the combat arms anywhere in the Contemporary Operating Environment (COE)[4] or modern battlespace.

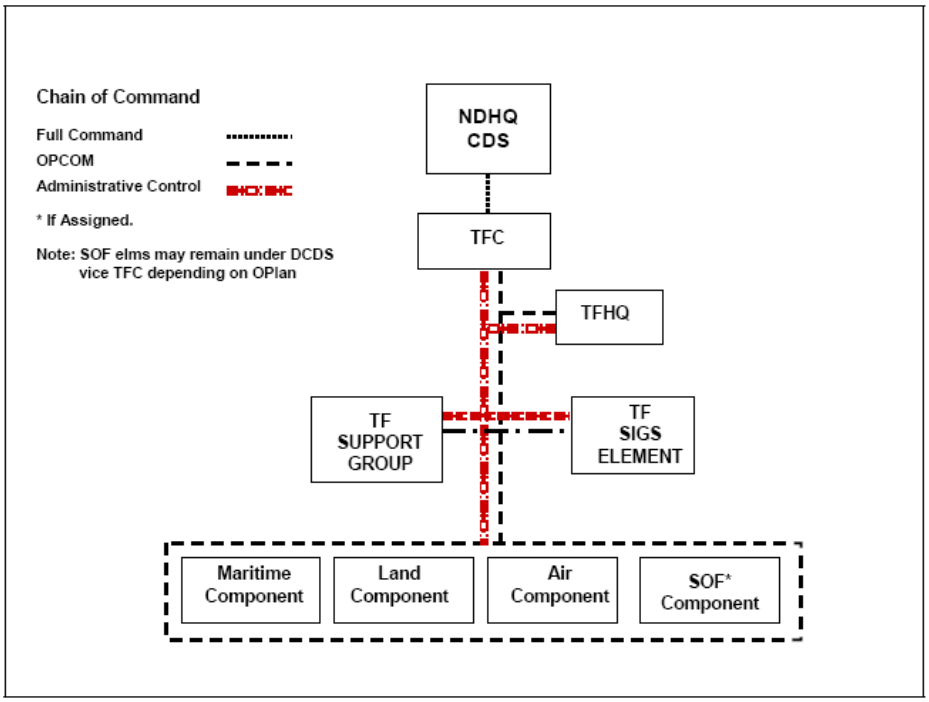

Figure 1 - A Generic Task Force
Source: Canada. Department of National Defence, B-GJ-005-300/FP-000 "Canadian Forces Operations." (Ottawa: 2005), 7-1.

[4] The operating environment is a consequence of the overall operational and tactical situation in which the TF is expected to conduct operations. It exists on both the physical and psychological planes. It is a complex mix of the geographical, environmental, and human factors that collectively and significantly complicate the conduct of operations. 2-1) ATP March 2005

For research purposes the Other Arms and Services (OAS)[5] Soldiers' roles are broadly categorized as combat support[6] and combat service support (CSS).[7] The OAS PCF can include such diverse activities as vehicle and weapon systems repair, medical support, cook, ammunition supply and transportation. The majority of OAS soldiers are force generated from existing Land Component formations and as such will likely have current experience in Land Operations (Land Ops).[8] A portion of OAS soldiers will however have no such benefit and will be force generated from all three services and bases and institutions from across Canada. These 'augmentees'[9] are CF members[10] who typically join a TF at anytime from weeks to four months prior to deploying on the

[5] For the purpose of research the author has developed a working definition of the OAS soldier. It does not appear in current CF doctrine but for the purpose of exploratory research it is necessary to develop a framework. The term OAS does appear in Army training documents concern levels of marksmanship training. The purpose of that trg definition is to differentiate the infantry soldier from all other arms and services.

[6] Combat support is defined as (cbt sp) elements that provide fire support, operational assistance, and enablers to combat elements through designated command and control and fire support relationships. Cbt sp elements include fire support, air defence, reconnaissance, combat engineer, some electronic warfare elements, and some aviation assets. They maybe referred to as simply support elements in Canada. Department of National Defence, B-GL-300-001/FP-001 "Land Forces - Land Operations," NDHQ: Draft 2007, 13.

[7] Combat service support is defined as Combat Service Support Elements. Combat service support (CSS) elements primarily provide administration and logistics support to Cbt or Cbt Sp elements. CSS elements include log, HSS, LEM, and PSS. Force support engineers that normally provide water, electrical power, infrastructure, and main supply route (MSR) maintenance are classified as CSS elements in Canada. Department of National Defence, B-GL-300-001/FP-001 "Land Forces - Land Operations," NDHQ: Draft 2007, 13.

[8] The mastery of IBTS for Land Ops is vital to the CF. History has shown that **members** of the CF may be called upon, at any time to participate in Land Ops either at home or abroad. IBTS P. 1-2

[9] 'Augmentee' is a term used to denote individual personnel added to an existing unit or formation to build its strength for an operation. These soldiers will not have the benefit of current collective experience and usually require focused attention to ensure they have all of the necessary skills, and in the second instance to ensure they integrate with the group.

[10] *The author clarifies this definition to demonstrate the necessity of having a joint standards, force generation for land operations encompasses all services and arms from the entire CF.* **Member** is defined in CF doctrine for Land Ops as all officers and non-commissioned officers serving as sailors in Maritime Command, all officers and noncommissioned officers serving as airmen or airwomen in Air Command and all officers and non-commissioned officers serving in the Army and other commands shall be collectively referred to as members in this paper.

mission. These individuals have a relatively short period in which to become integrated into the TF. These CF members will have received vastly different standards of past training, much of which will be qualitatively inferior to the expected standard. This presents only a small part of the problem. OAS soldiers who are regularly employed within the Land Ops environment typically meet this baseline; however, this paper contends that in addition to differences amongst the environments, there are fundamental gaps in the quality of the currently accepted training standard resulting from flawed assumptions concerning task expectation and anticipated employment conditions. These flawed perceptions have had a direct effect on the quality of soldier skills training demanded of deploying OAS members and hence has led to employment limitations.

Historical and contemporary examples demonstrate that OAS soldiers will be employed anywhere within the COE and will be exposed to threat. This makes it clear that the OAS soldier requires an additional skill set beyond those related to trade or PCF; these are defined in this paper as soldier skills which are the primary focus of this paper. Soldier skills are those that permit any soldier to integrate into the TF which is described as an all arms team, to 'fight' their part of the battle in a complex environment,[11] and they give soldiers the freedom of manoeuvre they need to carry out their battlefield function. Failure in completing the PCF can lead to mission risk, a lack of employability, and a drain on combat power.

Contemporary lessons learned indicate the existence of a 'Soldier Skills Delta'[12] between the current soldier skill capabilities of the OAS soldier and level required for

[11] Complex Environment: A battlespace with a mix of geographical, environmental and human factors that collectively and significantly complicate operations.

[12] Soldier Skills Delta is a working definition. For the purposes of research the author posits that it exists as a result of the soldier skills the average soldier receives through a combination of baseline training

optimum performance in the COE. It is of particular concern that the nature of this delta and the required solution has not been fully explored. The fundamental premise that every soldier employed in the COE requires a degree of soldier skills to be effective seems obvious. The difficulty then becomes developing an understanding of the difference between what is perceived as the requirement, whether the current requirement is satisfactory, and what is truly required. The 'Soldier Skills Delta' has a qualitative as well as quantitative component that has its foundation in misunderstanding of the full spectrum of requirement and a lack of a realistic appraisal of the level of training required. These are defined in this paper as task expectation, threat expectation, and training expectation. The aim of this paper is not to suggest that every soldier must be trained for employment as a combat arms soldier. It is to give the OAS soldier the skills that will ensure freedom of movement[13] in the accomplishment of their PCF in support of the TF Commanders mission. This study embarks upon exploratory research in order to develop an understanding of the scope of employment limitations of OAS soldiers in the COE. Once accurately defined we will explore the potential impact that training non-combat arms soldiers to a different standard would have on the capability and flexibility of a task force.

The deployed Task Force will experience improved combat power and agility by ensuring that all Other Arms and Services soldiers receive training that capitalizes on the

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for trade and pre-deployment training not giving him/her enough skill required to conduct their PCF anywhere in the COE with a degree of self sufficiency. This is as a result of flawed task expectations and a failure to appreciate realistic training requirements.

[13] Freedom of movement: this is a working definition that in this context it concerns ensuring that any OAS soldier is given sufficient equipment and training to ensure they are personally confident and professionally competent enough to explore the full capacity as a soldier-technician anywhere within the COE. It denotes a fundamental appreciation of true strengths and limitations, not an amateur's fear of the unknown.

benefit of focused soldier skills training up to and including live fire in relatively simple range firing exercises. The OAS soldier will perform their PCF with greater effectiveness, confident that they are better prepared to handle the threat endemic in the COE. They will be able to contribute to task force flexibility by performing security tasks that might otherwise be beyond their capability.[14] A slight modification in training methodology is required, which would require limited increase in training time and the dedication of additional resources. The benefits of these modifications far exceed the additional cost.

INTELLECTUAL PROCESS AND COMMON UNDERSTANDING

The challenge of resolving employment limitations is to ensure that everyone starts from a common understanding of the situation. One needs first to develop an intellectual process that balances professional subjective judgment with analytical process. The aim must be a common understanding of threat, task and training. There is considerable study available on the combat arms in battle but there appears to be limited study of the OAS soldier in the battlespace. Without a solid foundation in place any attempt to discuss resolution of the limitation or simple efforts to define training plans will be fraught with peril. While subjective professional assessments are important, they cannot be the only method or criteria or selection. The professional must be supported by a solid foundation of intellectual development that has provided the tools that permit a systematic and thoroughly professional approach to the business of preparing for war. A management framework must exist and it must permit flexibility to aid in planning and

[14] Note: based upon research with subjects and Anne Irwin's doc I now believe that the OAS soldier's relationship with fellow soldiers tends to lead to a collaborative approach that has mutual benefit – not only does the OAS soldier improve combat power with what he brings to the table but the collaborative nature of the relationships with the supportive has a synergistic effect greater than the sum of its parts.

ensures that key aspects such as resources are available in a timely fashion. One must first follow an intellectual process that defines the problem, assesses competing factors, and permits the systematic development of a professional training plan. This paper will evaluate threat, task conditions, and place the OAS soldier in the battlespace through evaluation of Canadian doctrine, training, the battlespace framework and the manner in which the sustain function should work in the battlespace. This will then permit the identification of essential tasks, which then leads to measures of performance or Battle Task Standards, from which the leader can define training requirements.

Threat Expectation

The COE, or modern battlespace, is characterized by the constants of uncertainty, violence, and friction.[15] In the COE all members of a TF must perform their PCF under the constant threat of violent attack from an adversary that has the advantage of time, terrain, and usually surprise. The adversary integrates well with the local population and often uses them to his or her advantage. The Other Arms and Services soldier perform a non-combat PCF that form the many constituent components of a deployed Task Force that directly support the achievement of the mission by the combat elements. They ensure that the combat elements remain fully capable of performing their PCF at all times. The OAS soldier must devote enough time and effort to training the soldier skills that will give them freedom, security and confidence they need to do so in the threat environment they will face.

Task Expectation[16] and Institutional Necessity

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[15] Canada. Department of National Defence, B-GL-300-003/FP-001 "Command in Land Operations," 2007, 3-6.

[16] See Annex A - Definitions for greater definition of the subject of task, threat and training expectation. In the context of this paper expectation is a group or individual perception of the task

Evidence gathered during research[17] suggests that there is a need to clarify task and hence threat expectation, to further refine and define task standards, and then to further develop training in order to better prepare our soldiers. The CF as an institution must first ensure that all see and internalize the requirement to balance technical proficiency with strong soldier skills. It must be understood that the OAS soldier as a CF member is expected to be able to work anywhere in the COE either for PCF or trade related reasons or as a CF member. [18]

The CF as an institution must next develop in a systematic and cohesive manner the task standards or expected Measures of Performance (MoP) and the required skill or proficiency. These MoP exist in the form of Battle Task Standards (BTS) but there is a requirement for greater definition of some tasks and skill level and the entire package must be integrated into a common CF standard.[19] These MoP will mean little until appropriate training standards and methods are applied.

Theory and Application of Training

All training must be realistic and progressive with the aim of preparing the OAS soldier to complete their PCF effectively anywhere in the modern battlespace. The OAS

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conditions or job performance that is different from the actual requirement. This difference is a distortion caused by the cultural pressures of trade and inaccurate understanding developed from incorrectly learned or applied lessons.

[17] Research includes historical and contemporary lessons learned, as well as primary sources such as interviews.

[18] Ref to CF Gen Spec that requires ability to conduct tasks related to battlefield security.

[19] Battle Task standards have been developed for any CF member. The expected standard and process to learn weapons handling is defined in the Canadian Force Operational Shoot Program. These represent CF standards that must be applied. Collective skills are defined only in the Common Army Battle Task Standards. These are a good start point but they must be developed in greater detail and they must be applied as a Common Standard for Land Ops in Canada. Department of National Defence, B-GL-383-002/PS-002 "Land Force Volume 2 Battle Task Standard," (Ottawa: 2007).

soldier has the concurrent demand to be capable at a PCF or trade and as a soldier. The member's trade skill permits freedom to attempt and resolve technical challenges. Soldier skills permit the member the ability to overcome the challenge of operating in the dangerous and challenging environment that is the COE or modern battlespace, in effect it is freedom of movement. In order to then integrate with the soldiers of a TF the OAS soldier will require a degree of uniformity in personal soldier skills. He or she would need to able to operate along side the infantry soldier, for example, but not to do the same tasks. Uniformity of capability, not replication, is desirable for effective TF integration.

Effective progressive training provides the soldier opportunity to repeatedly use soldier skills in increasingly complex situations. This enables the soldier to make their skills reflexive. Realistic training permits the soldier the opportunity to become sensitized to battle conditions. The soldier must be able to apply all skills in a group setting to over come tactical problems; these are his or her battle drills or Tactics, Techniques, and Procedures (TTP). All soldiers must be able to apply TTP and weapons handling skills in order to ensure they can survive. We will see how the Canadian Army training doctrine and Training Safety Standards incorporate the philosophy of progressive and realistic training into a training framework that will give any deploying CF member the skills they need to survive, if it is applied correctly. The training must follow through to the logical conclusion of complex live fire exercises founded upon progressive and repetitive practice of TTP if one is to be considered trained for operations or war.

METHODOLOGY

Research follows three main lines: literature review, interviews and a review of four Operational Research (OR) experiments. Data from the literature review provides

the foundation of research in chapter 1 and 2. The results from the OR give shape to the research by defining tasks and training required in order to survive likely ambush scenarios. Primary data from interviews is used to reinforce literature review and are summarized in chapter 2. The paper culminates in the final chapter by applying theories and deductions to a Model Task Force that must train for employment in the COE to determine likely benefits to a TF commander, including a cost benefit analysis of training time prior to deployment versus available task days while deployed; the relative insignificance of ammo costs, and demonstrable increases to combat power.

Literature is used first to demonstrate historical linkages and commonality of experience for the OAS soldier. Historical references are drawn from World War I and II, Vietnam, and contemporary Canadian and US experiences in Iraq and Afghanistan. This surprising commonality helps to define the task conditions and threat which leads to the conclusion that the OAS soldier will face threat, although in a more sporadic fashion, similar to the combat arms. It is also very common for nations to lose sight of this fact between wars. When linked to what would appear to be the commonality of task experience throughout history provides powerful linkages and rational for training.

Interviews

Seven subjects were interviewed during the conduct of research, the purpose of which was to conduct exploratory research into the specific questions of training for combat, clarification of task conditions and expectations, and of the often intangible benefits of training to combat power. During the conduct of each interview the interview team[20] made considerable progress in developing mutual understanding of these subjects.

[20] Interview team is a working definition to denote both interviewer and subject. This outlook properly framed the expectation that the interview intent was to work together to build collective

In many instances the team drew upon their collective knowledge in the analysis of the concepts and discovered some surprising intellectual and practical constants that tie together throughout history.

The interview team employed the Active Interview technique of Holstein and Gubrium in developing 'stocks of knowledge[21]' that were mutually developed and emerged out of discourse as the team explored past experience through the lens of the intellectual exercise of investigation. Subjects provided cultural observations that led to insight into the shifting perceptions of the nature of employment and training of non-combat arms soldiers on the battlespace. Despite the limitations of the sample size and singular professional perspectives very little in the experiences of these officers diverged from each other or the research contained herein. In most cases it reinforced theory, provided practical examples that expanded upon some points. In one case, it provided a very good check on the universal plunge towards making everyone a solder in demonstrating that one must consider the offset created by the need to specialize and associated risk and consequences before developing policy. The interview results are summarized in chapter 2 and many of the clarifying data or direct quotes are used throughout the paper.

Operational Research

knowledge rather than extract information. The concept is drawn from Constructing Meaning within the interview, Chap. 6 in the Active Interview. Holstein, James A. and Gubrium, Jaber F, *The Active Interview*, Volume 37, Qualitative Research Methods, (Thousand Oaks [Calif.]: Sage Publications, 1995), 52.

[21] Holstein, James A. and Gubrium, Jaber F, *The Active Interview*, Volume 37, Qualitative Research Methods, (Thousand Oaks [Calif.]: Sage Publications, 1995), 32.

Operational Research provides an additional layer of scientific analysis into probable outcomes of specific combat actions. In the conduct of research the author reviewed four research questions concerning convoy operations, specifically the validation and assessment of TTP and other factors such as arming, armouring, and escorting and convoy lethality and survivability. The aim of the research was to find another angle that tested the theory of alternate training for other arms and services and determine a manner in which one could clarify specific task and training requirements. The author was able to draw conclusions directly form the research, and was able to develop observations by linking the obvious unstated assumptions concerning training and preparation for successful conduct in the scenarios in questions.

Operational Research has limitations; data is typically drawn from historical and physics research and both data and tests have underlying and often assumptions that can limit their use. Furthermore, the development of OR tests requires the iterative interaction between the OR scientist and the test sponsor. This may permit subjective influence of test outcomes. If one is aware of these limitations and frames the use of available data appropriately the results are quite beneficial. The author uses OR as an analytical tool in a narrow sense, as another dimension of analysis and not as the only source of data. The specified scenarios and research construct are feasible and in general terms the results are congruent with the remainder of the research in this paper.

CHAPTER 1 – SITUATION IDENTIFICATION

INTRODUCTION

It is important to develop a full understanding of the current situation. This discussion very much represents the tying together of many different ideas and concepts that already exist and tying them to the question of the employment of all members of a deployed task force. There are fundamental misunderstandings concerning the employment of non-combat arms soldiers on the battlefield, for example there are many who believe that in a high tech world the degree of specialization required by trades precludes them from combat as the jobs they perform must be done in a secure environment. The misconception leads many down the path of planning to avoid failure rather planning to succeed. Task Forces and the contribution of OAS soldiers are consistently misunderstood, under-rated and as a result the fore as a whole becomes less agile and persistent. What we are not discussing is placing soldiers in undue risk; however, the definition of undue risk is misapplied frequently. The OAS soldier represents parts of the doctrinally force that must be integrated at every level; by default then many trades should be expected to perform their task in the same locations as the combat arms. The bottom line is that we must first define the situation in terms of what the real task expectation is, the threat they may face and what they should be expected to do in the face of this, and how we currently train for deployment. The purpose of this chapter is to determine the following: what are the likely threats that OAS soldiers have faced in the past?; where might OAS soldiers have been employed?: have threats and employment changed in the OAS?; what are the contemporary lessons learned?; where might the OAS soldier be employed today?; how do these differ from past expectations?; and what steps have been used in the past and in the contemporary environment to deal with the threat?

HISTORICAL CASES

Literature concerned with contemporary lessons learned indicate that amongst modern militaries a level of unpreparedness and surprise as to the threat faced by the OAS soldier, but most importantly shock as to the lack of preparedness of the OAS soldier to handle even the most basic skills and the lack of a warrior ethos. The question of threat has also been framed purely in the context of COIN and stability operations in the COE. The belief that the current shift in modern warfare has suddenly placed everyone in harms way neglects centuries of history and experience and ignores the fact that even highly mechanized military forces such as the Soviet Army saw the benefit of destroying the denizens of the rear area. There are examples throughout history that demonstrate in any type of warfare, be it asymmetrical non-contiguous non-linear or conventional linear contiguous. The truth is that almost everyone must be a soldier first and at times anyone will have to fight to accomplish the mission.

It is not within the scope of this paper to explain cause but one can infer that the lessons were lost or never learned based on historical and contemporary observations. It is not intended to impugn the professionalism or experience of those who came before; this is merely symptomatic of the larger context of institutional and cultural distortion of threat and task expectations. This is not entirely bad, it should present an opportunity to improve effectiveness of existing training as one is forced to reduce but still maintain a level of readiness. The unfortunate fact is that one can easily lose sight of the importance of training the individual CF member so that he/she is prepared for the tough complex

battlespace and so that units have essential cohesion.[22] This loss of focus leads to an erosion of effectiveness as we are required to pursue a lower baseline of skill and readiness to pursue scarce resources. The trade off is to plan for a timely period of intense training to prepare select units for deployment. Contemporary experiences demonstrate significant risks in this approach as it is highly problematic to accurately predict future task and threat environment. Contemporary experience appears to have proven the problem of prediction but the truth is that there is sufficient historical evidence to demonstrate that the OAS soldier has always faced risk. One has only to look into the detailed case studies of history and contemporary cases to see demonstrated quite clearly the types of skills and training that are necessary. The historical examples contained herein encompass World War I & II, Vietnam, and contemporary examples drawn from the 2003 Iraq War and the Canadian experience in Bosnia and Afghanistan.

Throughout history the providers of service or those OAS soldiers who support the combat arms have been called upon to face similar threat throughout the battle space in order to perform their PCF. Notice of this threat seems to be heightened during counter-insurgency (COIN) operations or in the non-contiguous non-linear battlespace; it is the nature of the tactics in these cases where there is a disparity in combat capability between adversaries that the weaker side will disperse, blend in with the local population, and use them to draw in the stronger force and negate their superiority.[23] In these cases

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[22] Cohesion is defined as "the bonding together of members of an organization/unit in such a way as to sustain their will and commitment to each other, their unit, and the mission" in Henderson, W.D, *Cohesion, The human element in combat,* (Washington: National Defense University, 1985), 4.

[23] Layer, Major Brian R, "Some Principles of Convoy Operations in Operations Other Than War," (Fort Leavenworth, Kansas: School of Advanced Military Studies, United States Army Command and General Staff College. 1993), 18.

when the adversary chooses to attack they will strike at those elements that they deem to be softer using unconventional means. One must remain cognizant that the asymmetrical battlespace is not the only one in which one will face threat.

The linear contiguous (LC) battlespace as demonstrated in figure 2 is characterized as dangerous for those fighting troops in close proximity to the FEBA.

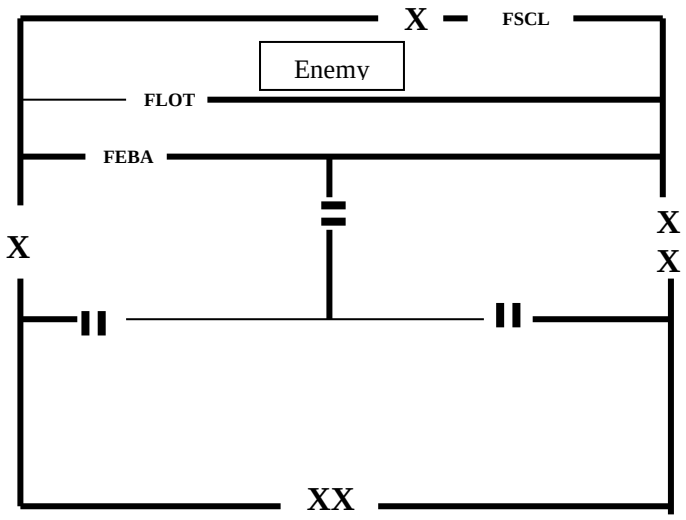

Figure 2: Contiguous – Linear Battlespace: Cold War & Gulf War
Source: Major Dave Lambert, "Fundamentals of Land Power: The Generation and Application of (Land) Fighting Power." (Lecture: Canadian Forces College, Toronto, ON, 31 January 2008), with permission.

These fighting troops are arranged along the FEBA, in theory presenting an unbroken wall to the enemy and consisting largely of the combat arms. It is assumed that the OAS soldiers who provide support services occupy areas on the battlespace that are insulted from danger by the fighting arms. This is a theme that one can easily infer from contemporary training expectations and was reinforced during all interviews; a misapprehension dispelled as a result of the onset of war.

The truth of the matter regarding the conventional battlefield framework and the concept of operations for other combat functions is that they are fully integrated with all arms at every level of the echelon system.[24] For example, the replenishment and maintenance systems emphasize service delivery forward. Supply and transport troops, therefore, were trained to conduct operations within 5-10 kilometres of the FEBA and maintenance Mobile Repair Teams deploy within 1 kilometre of the FEBA.

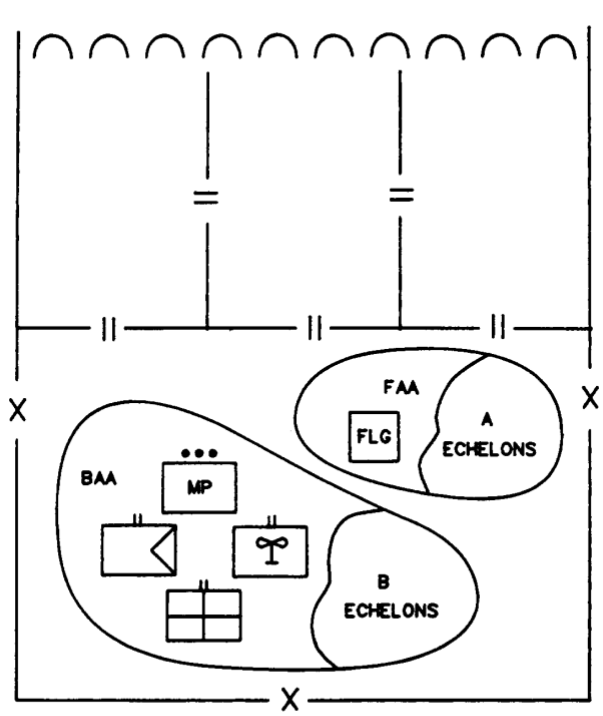

Figure 3 – Sustain op function in the LC battlespace.
Source: B-GL-312-001/FP-001"The Bde Gp Svc Bn in Battle

The enemy recognized the relative vulnerability of these targets and their importance to the sustainment of persistent combat power and they would exploit it.[25] This theoretical doctrine was

[24] Canada. Department of National Defence, B-GL-312-001/FP-001"The Brigade Group Service Battalion in Battle" (NDHQ: 1989), p.3-15.

[25] CF Generic enemy force doctrine, based upon Soviet Doctrine, dictated that they viewed the deployment of forces to the rear area as a key decisive operation. The aim was to destroy combat power from within and the easiest method of achieving this was to destroy critical C2 and logistics systems in Canada. Department of National Defence, B-SJ-100-002/PT-006 "Generic Enemy Force – Part 1 – Operational Art" (Kingston: DAD 1997), 94.

never tested in battle but it was based upon planned operations and it was based upon the experience in both World Wars.

The perception most likely exists that support troops during World War II were generally in the rear with the gear and worked in relative safety. There are numerous well documented cases; however, that demonstrate the need to be prepared for the fight. The German Wehrmacht after it invaded Russia in 1941 eventually had very extended lines of communications that required protection. Polish and Russian partisans filled the rear area with threat, they operated with relative impunity as the Germans were unable to protect the entire area and the partisans had mobility and knowledge of the terrain. They continuously destroyed rail lines, attacked convoys, logistics bases, and disrupted sustainment operations.[26] They constrained the support troops' freedom of movement by forcing them to operate in daylight hours only. They created friction by forcing the Germans to repair the rail lines every day which further reduces rail capacity during the precious daily light hours available to them. In the end these actions forced the Germans to deploy entire combat divisions to secure the rear area.[27]

The American experience in Northwest Europe following D-Day was different; they had substantially more secure lines of communication which led them to take more risk. Based upon a pure casualty comparison one can draw the conclusion that life in the

[26] The Polish underground consisted of at least 40,000 troops. They tied up Wehrmacht Divisions and Luftwaffe Squadrons. They destroyed 8000 locomotives, 19,000 rail cars, 4,300 transport vehicles, 8 major depots, and killed over 6,000 Germans in The Army Press, *Heroes of the Resistance*, Editors of Army Times, (New York: Dodd, Mead and Company, 1967), 55.

[27] In May 1943 18 Pz Div was pulled out of the line and sent to a rear area to be dedicated to purging guerilla forces in Bartov, Omer, *The Eastern Front, 1941-45: German troops and the barbarization of warfare*, (Houndsmill, Basingstoke: Palgrave, 2001), 124.

rear area was safe, in comparison to the life of the infantry soldier it was in fact relatively safe. In contrast to the German experience in Russia, the Allies maintained relative battlefield dominance throughout and as an army of liberation they had no risk of partisan activity. The Battle of the Bulge, Hitler's last gasp effort to break the alliance in the West, provides some excellent case studies as to how threat can befall the rear area.

Hitler surprised the allies by attacking in force through the Ardennes with well concealed masses of armoured formations that drove deep into the rear area. The combined effort of Patton and Montgomery contained and destroyed the penetration while many rear area service troops had to fight for their lives, some merely to survive and partake in the fight, many more to support the combat forces. The experience of the 7th Armoured Division and its Combat Command B at the Battle of St. Vith, Belgium 17-23 December 1944, demonstrates how all of the soldiers who perform any battlefield function are critical to the assurance of success. Combat Command B, 7th Armoured Division, was awarded a citation and Battle Honour for St. Vith for the grimly determined defence during the battle; their extraordinary effort blunted and disrupted and eventually completely destroyed the German timetable of assault. This battle was often used as a case study as an example of how the conventional battlespace can quickly change. It was characterized by:

> ". . . surprise[d], cut off units, bad weather, short supply to some units, cut communications, loss of contact to the left, right, and rear, and other confusions of modern battle."[28]

The achievement of Combat Command B was particularly noteworthy. The entire Division had become separated from its supply trains. Internal to the CCB transportation and supply units had to move through enemy infested terrain in search of supply points. A composite maintenance platoon established a makeshift mobile workshop that was critical to keeping the CCB moving. It was frequently hit with artillery and often had to stop to fight patrols. Kitchen staff was given Tommy guns, and two cooks allocated to each vehicle to perform convoy protection. Repaired armoured vehicles crewed by mechanics provided force protection as convoys fought to provide the essential support that the division needed to survive and win. The battle was non-linear and that the CSS soldiers of the trains never lost sight of their mission to support the division even when fighting for their lives. He notes that sustainment convoys saved the division from disaster.[29] The support demonstrated the importance of cohesion, having the right blend of soldier-technical skills and the fact that the fighting skill of all soldiers can become essential at any time.

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[28] US Army Armor School, *The Battle of St.Vith, Belgium 17-23 December 1944 – A Historical Example of Armor in the Defense,* 3rd ed. (Washington D.C.: Department of the Army, 1956), 26.

[29] Todd, Robert C, Major. "An Exploration of Cohesion in the Land of Combat Service Support" (Fort Leavenworth, Kansas: School of Advanced Military Studies, United States Army Command and General Staff College. 1991), 1-2.

The American experience in Vietnam has been linked quite closely to contemporary battlespace such as OIF and Afghanistan. In reviewing analyses from these operations the initial lack of preparedness and scramble for solutions remain constant themes. US Forces entered Vietnam with no clear convoy doctrine.[30] It should be noted that doctrinal currency for Canada as it entered Afghanistan was in a similar state.[31] In many respects Vietnam was a non-linear (NL)[32] / non-contiguous (NC)[33] battlespace, the sustainment plan demanded convoys operate along relatively unsecured LOC from camp to camp to keep the fighting troops sustained.

[30] Layer, Major Brian R, "Some Principles of Convoy Operations in Operations Other Than War," (Fort Leavenworth, Kansas: School of Advanced Military Studies, United States Army Command and General Staff College. 1993), 21.

[31] Canada. Department of National Defence, B-GL-005-000/FP-001 "Land Force Convoy Operations - Tactics, Techniques and Procedures (TTP)," (Ottawa: 2007), 1.

[32] "Nonlinear (NL). The definition of the word nonlinear begins with the root word of linear, which the Webster's New World Dictionary defines as "in a line; having only one dimension." Webster's also defines the use of the prefix "non" before a word as meaning not. From this we can determine that nonlinear means not in a straight line or multi-dimensional", in Ellison IV, Major Isaac William. "Current Inadequacy of Small Arms Training for all Military Occupational Specialties in the Conventional Army." (master's thesis, US Army Command and General Staff College, Kansas, 2005), 7.

[33] Noncontiguous (NC). The word noncontiguous stems from the root word contiguous which the Webster's New World Dictionary defines as "in contact; touching." Webster's also defines the use of the prefix "non" before a word as meaning not. From this we can determine that noncontiguous means not in contact or not touching. In military documentation, noncontiguous is described as when a commander has "one or more of his subordinate forces' areas of operations do not share a common boundary" in Ellison IV, Major Isaac William. "Current Inadequacy of Small Arms Training for all Military Occupational Specialties in the Conventional Army." (master's thesis, US Army Command and General Staff College, Kansas, 2005), 7.

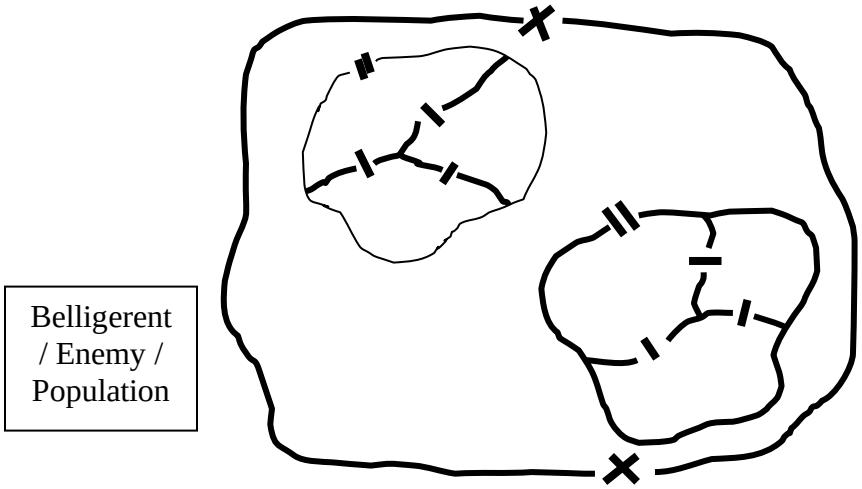

Figure 4: Non-Contiguous – Non-linear Battlespace (Vietnam, Iraq, Afghanistan)
Source: Major Dave Lambert, "Fundamentals of Land Power: The Generation and Application of (Land) Fighting Power." (Lecture: Canadian Forces College, Toronto, ON, 31 January 2008), with permission.

The enemy targeted these convoys quite regularly to the point that combat arms soldiers had to be allocated to provide force protection. They found that the integration of combat arms into the convoys rather than the area security system they were using was the most effective. This worked until it was realized that they did not have enough troops for the fighting tasks and had to take risk in convoy security. The sustainment troops converted some of their logistics tasked vehicles into Gun Trucks that were manned by logistics troops.

Figure5: Vietnam Era Gun Truck (From: Army Transportation Association).[34]
Source: Hakola, Captain Matthew B. "An Exploratory Analysis of Convoy Protection Using Agent Based Simulation." Master's Thesis, (Monterey, California: Naval Postgraduate School, 2004), 6, 12

They assumed a very aggressive posture which alone was often enough to dissuade attacks. They were also well rehearsed in their drills which ensured that in the event of incident they would be able to handle the situation and extract their convoys in short order[35]. They trained hard on their drills to ensure they maintained cohesion and ensured that the convoys were tight units. This posture combined with a demonstrated

[34] The gun truck is used in current US terminology to denote a convoy security vehicle. In Vietnam the gun truck was an ad-hoc or home made response to the threat, the reconfiguration of a task vehicle brings perils, it is better to have anticipated threat and responded with appropriate doctrine. Hakola, Captain Matthew B. "An Exploratory Analysis of Convoy Protection Using Agent Based Simulation." Master's Thesis, (Monterey, California: Naval Postgraduate School, 2004), 6, 12.

[35] Layer, Major Brian R, "Some Principles of Convoy Operations in Operations Other Than War," (Fort Leavenworth, Kansas: School of Advanced Military Studies, United States Army Command and General Staff College. 1993), 20-24.

willingness and effectiveness at the use of force in their defence was key to survival and mission accomplishment. This assured that the forces' combat power was fully maintained without having to bleed away fighting elements.

There are many contemporary allied[36] and Canadian examples from peace support operations and contemporary war further reinforce the need to train to handle violent threat. During the UNPROFOR mission in the nineties many nations deployed Military Observers, small independent teams that operated throughout the country. This was a dangerous environment[37] in a nation that was still largely at war with a tenuous UN mandate that afforded little protection. These teams were separated from their support bases by the belligerents who were supposed to respect their neutrality but still managed to create a very dangerous situation. Support was sketchy at best and often it was down to a few individuals who had the confidence and skill to leave secure camps and go forth to support. In at least one case a UNMO noted that support was often dependent upon who took the call. There were confident soldiers who demonstrated fearlessness in coming out to conduct repairs that kept their small fleet of vehicles moving. These troops were very much in the minority, and it was down to the personal relationship between the officer and this soldier who insisted responding personally to requests for support. This OAS soldier was effective because he was confident in has basic soldier skills, and knew how to navigate, communicate, and could get the job done. It was confidence in this

[36] American experience confirms that "all soldiers, [combat arms and OAS alike,] . . . are required not only to defend, but to go on the offensive to defeat the enemy on the modern battlefield." In Ellison IV, Major Isaac William, "Current Inadequacy of Small Arms Training for all Military Occupational Specialties in the Conventional Army." (master's thesis, US Army Command and General Staff College, Kansas, 2005), 2.

[37] In this context belligerents continued to fight amongst themselves, creating the very real possibility that UN personnel could become collateral casualties.

individual and mutual trust that contributed to the UNMO's confidence in going forward, thereby creating greater effect or combat power.[38]

Canadian experience in Afghanistan demonstrates the challenges and threats that CSS soldier must overcome in conducting their support tasks. The Canadian Task Force was deployed throughout southern Afghanistan in a tough fight. The National Support Element deployed troops out through the fight to provide support every day. During the conduct of one of the tougher battles the Battle Group had taken casualties and suffered damaged vehicles. The National Support Element (NSE) dispatched a recovery convoy to collect three armoured vehicle casualties. The convoy deployed to a secure lieger near the ongoing battle to wait for a pause in the battle so that they could recover the vehicles. They created their security perimetre. Not long after a man driving a white vehicle approached them, initially he responded positively to gestures for him to stop and not come closer, but then he began to behave erratically and then suddenly accelerated towards the recovery convoy. The sentry vehicle, an armoured BISON, was positioned to cover the approach. The crew commander was behind the C-6 machine gun. A CSS soldier, he acted quickly and walked the machine gun fire onto the vehicle in an attempt to disable it thereby causing early detonation of the VBIED.[39] This represented a text book execution of escalation of force and reflexive action for the protection of the convoy.[40] It is a clear demonstration that sustainment activities bring threat and one must be prepared to fight.

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[38] Interview Subject #2, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 25 March 2008

[39] VBIED: Vehicle Borne Improvised Explosive Device, a car bomb.

[40] Interview Subject #5, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 31 March 2008

FUNDAMENTALS

The Soldier

We have seen that the contemporary battlespace presents threat to any soldier regardless of PCF. The OAS soldier must be prepared to act quickly, correctly and reflexively to ensure they survive and achieve the mission. We have seen in three theatres of war that western armies have consistently been surprised by the threat presented to OAS soldiers, they have lacked in materiel and training preparation, and each had scrambled to adjust to protect an essential combat function. This threat and these operating conditions should not be a surprise. The Battle of St. Vith aptly demonstrated that even the relatively stable conventional FEBA presents at times as a perilous NL fight. The problem seems to be one of misunderstanding concerning the fundamentals of the soldier, the COE or threat, and how all soldiers must learn to navigate the battlespace to do their job. One must better understand the many dimensions in which training benefits the soldier and the TF. One must also understand the role of culture and how an adult OAS soldier learns in order to clearly define threat and task conditions. The subject of CSS troops, their combat skill, and hence their contribution to combat power has not received the same detailed level of study as the combat arms. The subject of OAS soldier training, cohesion and combat effectiveness are often overlooked in favour of technical skills when in fact the two must be carefully balanced.

The soldier is the most important part of any military but one we frequently neglect. The load the soldier carries, the conditions in which he/she will operate, the threat they face, and their effect on the soldier should be of grave interest. We must understand this soldier's motivation, how they are sustained, the effect of fear and

fatigue, how they learn and internalize discipline, and how we can unlimber the cognitive power of this multi-skilled individual. The complex battlespace is such that problem solving of the unusual and urgent battle problem will become more important, not merely the challenge of the tactical problem at hand and the normal all encompassing danger that the soldier faces daily, but the highly charged problems of grappling with an enemy that one cannot see and for whom the soldier's mistakes become strategic leverage. Short notice decision making in a violent high threat environment demands tough, realistic training that inculcate reflexive soldier skills in battle conditions.

There has been much study of all these aspects as they relate to the infantry soldier, one might argue that this has no bearing on the OAS soldier whose primary duty is to survive and accomplish their PCF mission. One can easily adapt these observations and theories and apply them in order to understand the OAS soldier and prepare him or her for the threat and task they face.

The soldier in the Battlespace

The cohesion of a force, its discipline and spirit de corps have always been critical to success in battle. Throughout history we have seen armies form their soldiers into close formations or phalanxes in order to generate combat power. This tactic was necessary due to the limited range and lethality of weapons. Battling armies sought to disrupt each other's formations in order to break up cohesion and win. The individual soldier had the relative comfort of being a member of a tight group of men with his fellow soldiers close at hand and his officers out in front where he could most likely see them; this helped carried him into battle, and when some might falter there was always the line of NCOs with pikes and halberds in the back who pushed the soldiers forward.

This timeless 'support network' gradually disappeared as weapon development forced a change in battlefield tactics. As weapons developed greater range and lethality formations to begin to disperse and soldiers take cover, separating the individual from all that had previously sustained him.[41] The necessity of dispersion and cover and the noise of the battlefield have an isolating effect that strikes at the very heart of the cohesion and combat power. It is now the cohesion of the small group and the individual internalization of the discipline, mutual trust and institutional values and goals that sustain the soldier.[42]

Any soldier going into battle must grapple with the fear of the unknown, fear of combat, and a fear of the enemy.[43] All of these fears are magnified the first time as all of this is completely new. The soldier has not yet experienced the tempo of deployment, the pressure of training and unknowns that include everything from an alien culture, local deadly wildlife, and even the unfamiliarity of his own equipment which he has not used in battle. Above all he must contend with the seeming omniscient enemy who can strike at anytime. The soldier marches towards battle, initially close to his fellow troops. As they continue dispersion becomes important, the troops spread out and the individual may lose sight of his superiors, he must trust that they know their business. As battle gets closer he may hear it which heightens senses and fear and leads to greater dispersion.

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[41] Dupuy, Colonel T.N, *The Evolution of Weapons and Warfare*, (New York: The Bobbs-Merrill Company, Inc., 1980), 10-16.

[42] Henderson, W.D, *Cohesion, The human element in combat.* (Washington: National Defense University, 1985), 4-5.

[43] Hauser, William L, "The Will to Fight," Chap. 6 in Sam C. Sarkesian, editor. *Combat Effectiveness: Cohesion, Stress and the Volunteer Military*, Volume 9, Sage Research Progress Series on War, Revolution and Peacekeeping (London: Sage Publications, 1980), 190-194.

Now the soldier begins to lose the strength that comes from proximity as his friends disperse and begin to look for cover in order to reduce the effects of the enemy's weapons. Once soldiers come under effective enemy fire the drill is to return fire, seek cover, locate the enemy and keep a volume of fire going down range. The soldier has become isolated due to dispersion, has lost sight of most if not all of his section mates, and will be further isolated from hearing them due to the noise of battle.[44] Compounding this is the likelihood that the soldier has probably not seen the enemy and in modern battle he may not see the enemy very often. This greatly enhances fear and creates a damaging condition of bewilderment. Fear and fatigue threaten cohesion, discipline and inhibits the initiative that saves the soldier and the unit and wins battles.

The soldier can suffer greatly from the physiological effects of fear[45] and fatigue if they are not managed properly.[46] If not correctly handled they destroy or seriously inhibit the critical aspects of real initiative of the soldier: ability to move – communicate[47] – shoot. These foundations of initiative[48] when considered in isolation

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[44] Marshall, S.L.A. *Men Against Fire: The Problem of Battle Command in Future War*. (Gloucester, Mass: Peter Smith, 1978), 46-48.

[45] Fear can be managed to varying degrees of success; the most effective methods are realistic training and team building in Rachman, S.J, *Fear and Courage 2nd Edition*, (New York: W.H. Freedman, 1990), 46.

[46] Sleep deprivation is highly debilitating, management strategies are listed in Murphy, Major P.J. & Mobourquette, Captain C.J. "Fatigue, sleep loss and operational performance." *Operational effectiveness guide 98-1*. (Ottawa: Personnel Research Team, NDHQ. 1998), 18-21.

[47] SLA Marshall on the importance of communication: ". . . the fighting mobility of men and of arms . . . develops out of fullness and correctness of information . . . [it is necessary to ensure every man learns and is confident to articulate his condition] . . . [this then becomes] the true primary tool of the fighting individual [and TF]." in Marshall, S.L.A, "The Human Equation in Combat 16 October 1952" Chap. 2 in Roger J. Spiller, editor, *S.L.A. Marshall at Fort Leavenworth 1952 to 1964: Five Lectures at the US Army Command and General Staff College*, (Fort Leavenworth Kansas: Combined Arms Centre, 1980), 17.

[48] Marshall contends that the move, shoot and communicate are the keys to winning and the most difficult thing to do in Marshall, S.L.A. *Men Against Fire: The Problem of Battle Command in Future War*. (Gloucester, Mass: Peter Smith, 1978), 132-135.

may seem relatively simple and one might be tempted to wonder as to why seemingly simple tasks are at issue. The fear that a soldier feels has the physiological effect of draining strength, distracting the mind, it has a persistent and cumulative effect that can be completely debilitating. Once the soldier comes under threat the fear is heightened to a tremendous level which can freeze the mind and drain his ability to act. The soldier at this most difficult time has lost muscular control and his ability to access his cognitive faculties'.[49] This condition has most likely been exacerbated by growing fatigue. The soldier for many reasons related to task, environment and fear probably has not been sleeping well and it is likely that the tasks leading up to battle are heavy, demanding, and done under demanding environmental conditions and threat. The build up of fatigue robs one of strength and saps the courage making it much more difficult to overcome the debilitating effects of fear.[50] Fear and fatigue sap the soldier; these factors can be partially mitigated if we understand them and the importance of training.

The OAS Soldier in the Battlespace

We need to link this experience to that of the contemporary OAS soldier; we will do so using the experience of the convoy[51] and sustainment operations. The delivery of all support activities via land in any operation are done via convoy operations, which are

[49] Marshall, S.L.A, "The Human Equation in Combat 16 October 1952" Chap. 2 in Roger J. Spiller, editor, *S.L.A. Marshall at Fort Leavenworth 1952 to 1964: Five Lectures at the US Army Command and General Staff College,* (Fort Leavenworth Kansas: Combined Arms Centre, 1980), 17.

[50] Murphy, Major P.J, & Mobourquette, Captain C.J, "Fatigue, sleep loss and operational performance," *Operational effectiveness guide 98-1*. (Ottawa: Personnel Research Team, NDHQ, 1998), 6

[51] Convoy: A group of vehicles organized for the purpose of control and orderly movement with or without escort protection. A convoy may comprise many vehicles, and for control they are broken down into packets, each consisting of four to eight vehicles, in Canada. Department of National Defence, B-GL-005-000/FP-001 "Convoy Operations: Tactics, Techniques and Procedures (TTP)", 2007, 1.

now considered deliberate combat operations.[52] Typically a convoy is formed as per figure 6, a security element which often can consist of combat arms soldiers although any OAS soldier may one day be called upon to assume the role. The task vehicles typically are heavy logistics, maintenance and medical vehicles that are heavily armoured and provide good protection for the soldiers. Each vehicle typically has an assigned driver and co-driver. The driver tends to be part of a formed platoon and usually is consistently travels with the same members of his platoon. A new co-driver is normally assigned to each vehicle for every convoy.

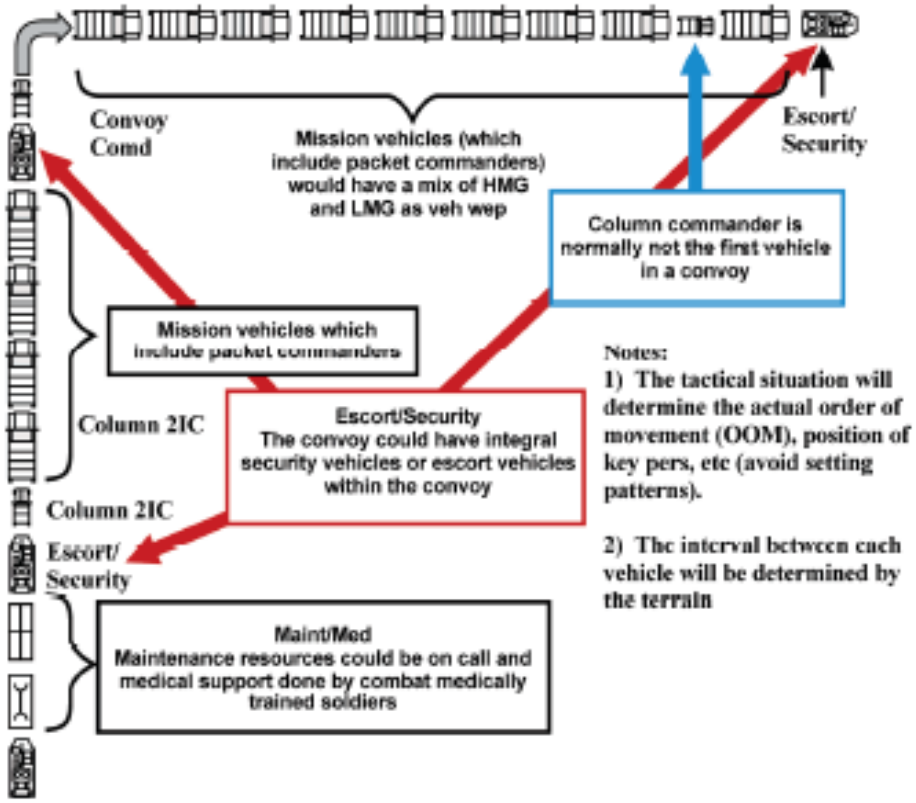

Figure 6: - Typical Convoy using Standard Convoy Escort Method
Source: Canada. Department of National Defence, B-GL-005-000/FP-001 "Convoy Operations: Tactics, Techniques and Procedures (TTP)", 2007, 9

[52] Canada. Department of National Defence, B-GL-005-000/FP-001 "Convoy Operations: Tactics, Techniques and Procedures (TTP)", 2007, 2.

The soldier inside the heavily armoured task vehicle is isolated from the remainder of the convoy. The armoured vehicles tend to be well secure, there is no noise other than the engine and the cab presents an environment that can feel quite claustrophobic. The vehicles are typically separated from each other by 25 metres, they most likely will be too far from their officer to see them, their section commander may occupy a vehicle within their line of sight but that is unlikely. When traversing highly complex terrain they can even lose sight of the vehicle in front of them, and due to armour they cannot see much of the surroundings of their vehicle therefore rely on the vehicle to their rear to warn them of any close in dangers. The heavy vehicles move very slowly, cannot accelerate rapidly and soldiers must live with the knowledge that the enemy can strike at any time. The heat is oppressive. The soldier's only link to the remainder of the convoy is through radios that may or may not be effective in all terrain. If required to dismount he/she will probably have a personal radio for communications but limited range and the noise of battle present challenges. The soldier lives with the knowledge that he/she could strike an IED at anytime and that only proximity will determine if one lives or dies,[53] compounding this is the fear that one might die never having seen the enemy.[54] If one survives an IED strike there is a sharpening of senses and a heightened fear, a lot of battle noise and at first a lot of confusion. Until someone begins to communicate the driver and co-driver will suffer from isolation very similar in

[53] Conrad, John, Lieutenant-Colonel, "We Three Hundred: Logistics Success in the New Security Environment," Chap. 13 in *Harm's Way – The Buck Stops Here: Senior Commanders on Operations,* Ed. Colonel Bernd Horn. Kingston: Canadian Defence Academy Press, 2007, 262.

[54] The helplessness of not being able to return fire when fired upon is one of the greatest fear provoking factors, Rachman, S.J, *Fear and Courage 2nd Edition*, (New York: W.H. Freedman, 1990), 39.

nature to that felt by the infantry soldier. The OAS soldier might be working with a section or group they know but a driver and co-driver usually have a different fire team partner every time they leave the camp. Prior to a convoy section and platoon commanders a very short period of time to get to know their team, potentially disastrous at critical moments in battle. The individual, lacking a support network, may be much less effective due to isolation.[55]

This is not an impossible situation and any soldier will perform if the leadership takes the appropriate steps in preparation. As dispersion takes hold it is the internalization of core values and discipline that carry the day. The challenge is firmly within our grasp to solve through tough, realistic and very achievable training.[56] One need not devote all available time to training soldier skills, nor does one need to attempt to turn every soldier into infantry. An understanding of the effect of training, and how people learn judiciously applied to our training plan will guide our actions. Every act of preparation and training must be focused on preparing the soldier to conduct his/her task in battle. Any step in training which is not geared to train for war is a false step and creates a false doctrine.[57]

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[55] The experience of the OAS soldier is developed over from the composite experiences of three interview teams and through generalization with the experience of the infantry soldier which has been studied in detail. The connection is made because all soldiers have characteristics in common and threat and isolation are part of that. in Interview Subjects #3, 5 & 6, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 1-7 April 2008

[56] Army Logistician – Professional Bulletin of United States Army Logistics, "Preparing for Convoy Operations in a Combat Zone," http://www.almc.army.mil/alog/issues/NovDec04/convoy.html; Internet accessed 5 February 2008, 1-5.

[57] Fuller, J.F.C, Captain, *Training Soldiers for War, 28.* (London: Hugh Rees, LTD, 1914), 35.

In the modern context of the OAS soldier it is the twin pillars of tactical and technical competence that demonstrates effectiveness and one must always be prepared to fight to achieve mission success. One must understand training and the individual if one is to succeed in generating this capability. Individual learning processes have been the subject of growing research over the past decades but nearly a century ago leaders committed to paper their understanding of the human, learning, and the importance of training. These observations now appear to be timeless truths and were drawn from the nascent body of knowledge on the human mind and from countless professional experiences. The research was quite new at the time and some would say that professional experience is far too subjective, however, these truths fit well with contemporary experience and our understanding of how people learn. One will find in the works of Fuller and Marshall a solid foundation and framework that can be further developed through contemporary study of training and learning.

HOW TO PREPARE

Training Soldiers – The Why and How of Learning

The timeless treatise of J.F.C. Fuller to contemporary theories of learning and training present a foundation of mutually supporting research that aid in resolving our dilemma. Fuller et al. feed our understanding of the martial spirit, confidence, discipline, duty and comradeship. The study of adult learning provides value to training development and explanation for the lack of combat training for the OAS soldier. This is not a contemporary or localized phenomenon. Evidence suggests that this happens during any period of peace or low threat operations such as peace support. The fact that many believed as militaries become more and more high tech that specialists would not

be involved in combat. Our understanding of learning and knowledge of the task and threat conditions of the COE can ensure that we develop and maintain relevant training. Marshall traces this separation to a change in doctrine between World Wars; most likely as a result of increased technological advancement and specialization.

> "In World War I the US Army conducted similar training for every soldier regardless of trade. In WWII the US military distinguished between forces at the front and in the rear and failed to indoctrinate these soldiers with the fighting spirit and skills they would need if they had to fight. This created trouble when in fact many of them were called upon to fight."[58]

The fact of the matter is the institution must position itself to educate the timeless reality of battle so that the soldier will recognize and internalize what is right.[59]

Much study has been done on the types of training or education or teaching to which people respond. The separate study of why adults learn grew throughout the 20th century when Lindeman (1926) investigated the phenomenon of deficiencies in adult education. This sparked a rapid growth in the subject and our understanding continues to evolve. In summary, education theory is split into Pedagogy or "the art and science of teaching" and Andragogy or "the art and science of helping adults learn."[60] Pedagogy assumes that students view education as a process they have to go through to acquire knowledge. Responsibility for all aspects of education rests with the teacher and the

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[58] Marshall, S.L.A, *The Soldier's Load and The Mobility of a Nation,* (Quantico Virginia: The Marine Corps Association, 1950), 95.

[59] Interview Subjects # 6, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 7 April 2008

[60] Knowles, Malcolm S. "Adult Learning." Chap. 9 in Robert L Craig editor, *Training and Development handbook: a guide to human resource development.* American Society for Training and Development New York: McGraw-Hill, 1987, 168-169.

primary methodology is transmission. Andragogy holds that adults learn best when they are actively involved and tend to be highly self directed learners. They have evolved from the dependent relationship in the pedagogical style to adult in which they have a need to be in control. Pedagogical and Andragogical styles we have discovered are not mutually exclusive which is important given the necessity of prescribed and repetitive nature of military training. The subject is diverse and growing but there are key aspects that relate to the OAS soldier who is usually a highly skilled adult and whose primary concern in the military setting is probably trade related.

"The adult must see a need to learn or train to do something."[61] Knowles observed that adults will spend much time and energy analyzing the necessity of learning a subject or skill and determined that it is important to be able to make a case for the value in their life. Value can only be proven through testimony from those with credibility; individuals who can provide real or simulated experience as to the benefit of knowing versus the cost of not knowing.[62] In the context of the OAS soldier this seems particularly difficult. The pervasive belief that the rear area is safe seems to take hold in peace only to be swept aside with the onset of conflict. One must now factor in the trade of the soldier. Any group has a culture and a trade is no exception. A very specialized or demanding trade has a stronger culture. When the adult sees the value of trade culture but not that of the institution the member's focus becomes misaligned with that of the

[61] Knowles, Malcolm S. "Adult Learning." Chap. 9 in Robert L Craig editor, *Training and Development handbook: a guide to human resource development.* American Society for Training and Development New York: McGraw-Hill, 1987, 168.

[62] Knowles, Malcolm S. "Adult Learning." Chap. 9 in Robert L Craig editor, *Training and Development handbook: a guide to human resource development.* American Society for Training and Development New York: McGraw-Hill, 1987, 170-172.

military. This distorts one's expectation as to what the task should entail and it blinds on to threat.

Trade and Culture

The OAS soldier's PCF is typically part of a combat function that supports combat. Soldiers usually have a trade or specialist trade knowledge that support combat operations but are not combat. A trade usually requires a degree of specialized knowledge that must be trained and practiced throughout a member's career. The soldier must devote sufficient time to the mastery of the trade and, quite naturally, over time the soldier will internalize the culture of trade. A trade typically fosters a culture, which may at times be incongruent with the military culture. The tradesperson typically takes pride in the quality of the work and often is motivated by opportunity to learn new aspects to better perform the trade. As one knows there will be times when the soldier technician has to be motivated by impetuses that are outside the scope of a trade. The soldier technician must learn how to inculcate the soldier skills, these are what keep him/her alive, prevent him/her from becoming a burden, and ensure that he can bring his skills to the battlefield at the necessary time and place. It will also mean that he will have to sacrifice time that could be used for trade related skills. It is a struggle to ensure a sufficient level of motivation is kept towards all aspect of the life of the soldier technician. Ideally this individual must internalize the discipline of both the warrior and the tradesman. The Army assists by ensuring the soldier technician is given enough direction to guide him/her in his priorities and by demonstrating the need for these skills.

The OAS soldier, like any adult, is better prepared to learn when they have realized that a particular skill or ability is necessary for them to be able to perform their

skill more effectively and more satisfyingly. The adult in anyone relates poorly if told they must do something for which there is no apparent value. One might suggest that as soldiers discipline and duty require the adult to ignore such impulses, however as noted by Fuller "a duty that is cheerfully done will be done well."[63] The current operating environment provides a catalyst for improvement and understanding. Given that the OAS soldier must clearly go forward to, transit through a high threat environment and still be able to carry out their PCF it should be clear to all that one must develop soldier skills. The challenge then becomes how much and what type? While all seem to agree on the principle of training for survival it is difficult to achieve consensus on exact details of skills and training standards. This is largely because people don't see a direct need for it, and because in general people don't completely understand the full value of training.

Resilience and the will to fight

Why do soldiers fight, or stay to do their job rather than flee? There are four interdependent factors that either persuade or compel the soldier to stay: submission, fear, loyalty, and pride.[64] Each is highly complex in its own right but we will view each through its relationship with training. Submission to the service of a legitimate authority is part of the process of what will become the habit of duty. The soldier gets into the habit of putting service before self by training and through repetition. If the conditioning and training is effective then the soldier will continue to submit even if contrary to

[63]Fuller, J.F.C, Captain, *Training Soldiers for War*, (London: Hugh Rees, LTD, 1914), 34.

[64] Hauser, William L, "The Will to Fight," Chap. 6 in Sam C. Sarkesian, editor. *Combat Effectiveness: Cohesion, Stress and the Volunteer Military*, Volume 9, Sage Research Progress Series on War, Revolution and Peacekeeping (London: Sage Publications, 1980), 188.

fundamental instincts of self-preservation. The soldier also submits with the same lack of consciousness to routine tasks he has learned in training.

"Training is habituation [and there is] no substitution for repetition."[65] We must make into practice and habit in peace time those duties that the soldier must do reflexively in battle. Training is individual and the habituation of skill takes place in the mind; this habituation and submission to routine leads to effectiveness and it is sustaining. For the OAS soldier this means continuing on when the four hour convoy becomes a 36 hour operation due to break down, IED and mortar attack. It means courage and persistence in the face of overwhelming challenge and fear.

Fear keeps soldiers in battle when the soldier perceives that it is safer to remain with his comrades than to flee. He does so because he has built trust through shared experience and having endured hardships together. This takes time and intense training, there are no shortcuts and training gives the soldier the ability to recognize and handle fear. "The battlefield, however modern the technology, is psychologically an environment of very old fashioned struggles and terrors."[66]

Loyalty and pride are sustaining phenomenon that are developed through long association with trusted colleagues and good training. Loyalty keeps the soldier with his friends, not only because it is perceived to be safer, but for fear of letting everyone down. Pride develops when the OAS soldier knows that he/she can perform their PCF under the most demanding of conditions and others depend on him/her to provide that capability in

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[65] Hauser, William L, "The Will to Fight," Chap. 6 in Sam C. Sarkesian, editor. *Combat Effectiveness: Cohesion, Stress and the Volunteer Military*, Volume 9, Sage Research Progress Series on War, Revolution and Peacekeeping (London: Sage Publications, 1980), 188.

[66] Hauser, William L, "The Will to Fight," Chap. 6 in Sam C. Sarkesian, editor. *Combat Effectiveness: Cohesion, Stress and the Volunteer Military*, Volume 9, Sage Research Progress Series on War, Revolution and Peacekeeping (London: Sage Publications, 1980), 190-192.

the accomplishment of the larger mission. Hauser notes ". . . [that] a military unit must be greater than the sum of its parts, this synergistic product is cohesiveness."[67] It is the ability to hold together, to sustain mission effectiveness despite combat stress and it is of vital importance to the commander and the Canadian Army.[68]

Internalizing Understanding and Initiative – The Role of the Leader

Peers and superiors with combat and operational experience consistently note during interviews that a very important role of the leader is to develop leaders. Troops and leaders learn and develop best when they are given the freedom and opportunity to be placed in challenging circumstances where the planning, selection, and pursuit of a course of action are theirs to choose. They need the chance to succeed and to fail. In correcting them leave them with their pride, tear them down in private and then build them up and allow them to prove to themselves their troops and their leaders that they are worthy of their prestige.[69] Once the business of habituation is mastered then we must look at building cognition while bearing in mind that both are lifelong processes and that cognition must always be focused upon the accomplishment of the mission. The underlying facts of military life must always guide us as we explore why people learn, these theories and observations can then be adapted to inform and improve military education and training.

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[67] Hauser, William L, "The Will to Fight," Chap. 6 in Sam C. Sarkesian, editor. *Combat Effectiveness: Cohesion, Stress and the Volunteer Military*, Volume 9, Sage Research Progress Series on War, Revolution and Peacekeeping (London: Sage Publications, 1980), 203-204.

[68] Hauser, William L, "The Will to Fight," Chap. 6 in Sam C. Sarkesian, editor. *Combat Effectiveness: Cohesion, Stress and the Volunteer Military*, Volume 9, Sage Research Progress Series on War, Revolution and Peacekeeping (London: Sage Publications, 1980), 203

[69] Interview Subject #6, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 7 April 2008

Fuller: Training

It is clear that he OAS soldier has a role to play that is supposed to directly sustain and therefore is a constituent part of combat power. We have seen that the OAS soldier must be prepared to fight to accomplish their mission and that the leadership must clarify roles and expectations. The OAS soldier must devote time to train both tactical and technical skills in order to achieve the required balance that will permit them to be effective anywhere on the modern battlespace. J.F.C. Fuller produced a treatise entitled "Training Soldiers for War" in 1914 that was very progressive for the time and remains germane. The purpose of training is to inculcate habit and this is done through repetition, the development of muscular memory which moves the skill from the mental realm of the cognitive to the reflexive. A new skill or TTP requires thought when initially learned. It is only through much repetitive training under realistic conditions that action tends to become automatic.[70] Fuller also notes that the mind forms sense impressions through exposure to experience and over time and repetition these form in the mind as memory which also becomes reflexive. This drives the need for leaders to acclimatize the soldier to the profound and overwhelming sights and sounds of battle and then train them to apply their skills under the most demanding of circumstances. Realism in training is vital and the habits that soldiers demonstrate in peace become the drills they automatically do

[70] The subject of the effect of stress on individual performance is important to militaries, emergency service providers and some industry. This subject led to the development of Stress Exposure Training (SET) where it was noted that after one had acquired or been taught a skill, one needed to then become knowledgeable of the stress environment and then learn to apply the skills in the stress environment in order to develop confidence. Driskell, James E., & Johnston, Joan H, "Stress Exposure Training," In A. Cannon-Bowers, & E. Salas eds., *Making decisions under stress: Implications for individual and team training*, Washington, DC: American Psychological Association, 193.

when under fire.[71] The cognitive becomes arrested; the simplest of tasks difficult and units rely on the predictable reaction of its soldiers for success. This strong historic link demonstrates the timeless importance of training.

Current Canadian Training Publications have a very strong mission focus and many of the espoused principles incorporate the foundational work of wartime leaders such as Fuller while using modern education and training theory to improve effectiveness. This work starts with acceptance and understanding that any soldier can be threatened with violence and that this threat can occur throughout the spectrum of armed conflict; [72] however, the institution has to first overcome the inertia of 40 years of resource contraction. The "just in case"[73] nature of military training is at odds with the resource constrained environment that followed the Cold War. The Peace dividend forced all to seek models of civilian management; at times such as these the nature of threat was hard to imagine and therefore there was impetus to change 'business practice' but there was no real focus on changing how we trained for our combat role. The training doctrine of 2002 inculcates a strong warrior ethos and contemporary international experience since 2003 has clearly proven that it must be applied to all who enter the battlespace; but in application there is still much work to be done.

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[71] "Specialized training and instruction . . . which included exposure to realistic battle conditions . . ." is noted as "[one of the most important methods] the US Army used to give the soldier the skills required to control his fear". "Clinical research confirms [that it is better to] encourage fearful people to practice coping with situations which they perceive as fearful [rather than] teaching them to cope with representations . . ." Rachman, S.J, *Fear and Courage 2nd Edition,* (New York: W.H. Freedman, 1990), 47.

[72] Department of National Defence, B-GL-300-008/FP-001 "Land Forces - Training Canada's Army," (NDHQ: 2001), 13-15.

[73] Fletcher, J.D, & Chatelier, Paul R, *Training in the Military*, Chap. 10 in J.D. Fletcher & Sigmund Tobias editors, *Training and Retraining: a handbook for business, industry and government, and the military,* (American Psychological Association, Division of Educational Psychology, New York: Macmillan reference USA, 2000.), 268.

Implementation

Training Canada's Army and Training Safety lay the foundation and rational for and the detailed procedures required in conducting realistic training. They start by indicating that successful training for operations culminates in field firing and tactical exercises as the means by which units and individuals prepare to conduct their combat roles. It notes that "while classroom instruction, TEWTs and other training methods are valuable ultimately it must be followed by live fire of weapons at every level and increased complexity in the field in simulated tactical settings with a high degree of realism that is essential for successful training."[74]

Training doctrine states that live fire is the final and key step at every level of progression. It builds individual skills in an increasingly complex environment which ties with the principles of repetition under the noise and confusion of battle. At each of the seven levels progression soldiers deploying on operations will be required to complete three stages: preliminary, practice, confirmation. The theory is that the soldier should have practiced the basic skill a minimum of eighteen times in increasingly challenging scenarios before deploying. It must be remembered that all training is progressive and rely on the mastery of successive stages and levels with the concurrent maintenance of basic skills. The mastery of shooting skills is the foundation of all advanced training and unit cohesion is the CoG of Army Training. The COE requires of our soldiers the use of their cognitive skills under highly demanding circumstances. They

[74] Canada. Department of National Defence, B-GL-381-001/TS-000 "Operational Training - Training Safety" (Ottawa: 2004), 1-1.

can only do so if they are able to control fear, and have mastered the soldier skills and TTP to the point that they are fully integrated into the psychomotor or reflexive/habit.

The demands of training safety[75] are delineated in a very prescriptive manner; underlying the detailed regulations are the training philosophy noted above and the belief that training safety comes from reflexively correct weapons handling skills trained in a realistic environment. Battle inoculation is training designed to permit leaders to simulate battle and the effect of flank and overhead small arms and heavy machine gun fire, and the danger close employment of AFV and indirect fire. This training not only sensitizes the soldier to battle it permits him the chance to learn what it is like to work and think under these conditions and also to recognize and learn the effects of weapons. The Field Firing Range (FFR) is highly complex and requires extensive preparation from staff and student. The magnitude of the planning required to safely achieve realistic training is highly indicative as to the complexity and challenge that commanders will face when coordinating fire and movement of two or more tactical elements. The soldier will then pass a series of gateway training confirming each level of complexity. This will include pair's fire and movement dry rehearsal and live fire, a process which is repeated at group (4 soldiers), section and platoon and higher and as each new weapons system is introduced into the mix. The regulations require that leaders at all levels and safety staff walk the ground they will train live over before training. In reality all should walk it particularly important for soldiers who have never done this type of live fire training or if

[75] Every interview subject viewed training safety as effective, progressive and realistic. Training safety means employing the same methods one would use in combat, training should be tough enough that actual combat seems easy. One subject linked good effective training to soldier welfare in Interview Subject #7, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 8 April 2008

a new team is going to train over particularly complex terrain. In all cases, in training as in war, proper battle procedure must be followed. In particular rehearsals must be conducted by teams, ideally over the training ground or similar terrain. These prescriptive training regulations in training safety espouse the timeless and fundamentals of training for war and provide definitive guidance to army leaders on how to train effective teams. Effective training for war is training safety, train as you fight. It is clear now how one can implement the training for the identified tasks and conditions and that proper professional training of soldiers requires time and effort. We must now turn our attention to defining tasks. While we will see that it is challenging it is neither impossible nor will it require a sacrifice in technical acumen.[76]

CHAPTER 1 CONCLUSION

The COE has and always will be a place of threat, fear, conflict and friction. All who must navigate the battlespace are at risk. The OAS soldier has always worked in close proximity to the front or along unsecured lines of communication but this fact has been lost during times of peace as armies contract false lessons are observed and as competing cultures exert pressure on the individual. The adult soldier and the military institution must work together to ensure they have a common understanding of threat and task. The OAS soldier must be prepared to fight the enemy to achieve mission success. We have it well within our grasp to resolve these issues. Canadian training doctrine is

[76] Interview subjected noted that the soldier doesn't just join to do a trade, the soldier gains satisfaction from doing the trade where other soldiers are, under dangerous and demanding circumstances. This can be linked to Anne Irwin's point about the field and how it defines the soldier – it is the shared experience of hardship in the field that defined the soldier and made them a member of the team. It was the willingness of others to sacrifice during their trade that gave them acceptance, in Irwin, Anne Lucille, "The Social Organization of Soldiering: A Canadian Infantry Company in the Field," (Ph.D thesis for Doctor of Philosophy, Faculty of Social Science and Law, University of Manchester, 2002), 148.

founded on fundamental principles that have deep historic roots and all that we must do is inculcate them throughout the CF.

CHAPTER 2 – INVESTIGATION

INTRODUCTION

The purpose of this chapter is to provide greater definition on the subject of the soldier skills and tasks that the OAS soldier will have to conduct in the battlespace and the conditions under which he or she can expect to do them. This will be done by demonstrating doctrinally where the OAS soldier fits within the battlefield framework. This will be used as a framework to then demonstrate in practice where and how the OAS soldier will be employed. The next step will be to better define the related concepts of combat power and combat effectiveness. This will provide critical background knowledge that will aid the reader in recognizing how integrated preparation and employment produce greater combat effect. This will be done through investigation of operational research and through interviews with profession military officers. Ultimate this information will be used to define training and then used in the conduct of analysis in chapter 3.

DOCTRINE FORMULATION

Doctrine

The purpose of doctrine simply stated is to provide a common standard as to how the military will organize, prepare, equip, and train to accomplish its tasks. A system of doctrine needs to be comprehensive, adaptable to the situation, and it must be sufficiently

agile to permit the rapid adaptation to changing circumstances. It must be practical as well as intellectual and it must trace an unbroken line from culture and strategic intent to practice, see figure 7. Analysis of doctrine creates understanding, it is the foundation that informs all aspects of how the CF organizes, trains, equips and ultimately how it is then employed. For the purpose of this study we will first provide a quick overview of doctrine from the fundamentals of fighting power and its application through the development of the main individual tasks that comprise the mission, and ultimately to the development of training.

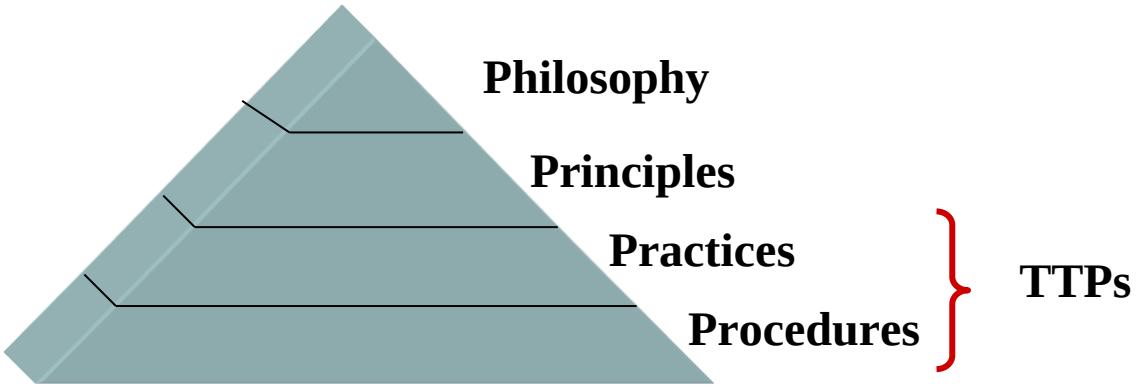

Figure: 7. **Doctrine**: the fundamental principles that guide military actions in support of objectives. Source: Major Dave Lambert, "Fundamentals of Land Power: The Generation and Application of (Land) Fighting Power." (Lecture: Canadian Forces College, Toronto, ON, 31 January 2008), with permission.

The Doctrine of Fighting Power and the Battlespace

Canadian Forces Doctrine looks upon fighting power as an operational capability;[77] it is the executive ability of the TF Commander to achieve the effect that he or she wishes to achieve. It can be applied in violent or merely coercive fashion in the physical or psychological plane. The components of fighting power are shown at figure

[77] Major Dave Lambert, "Fundamentals of Land Power: The Generation and Application of (Land) Fighting Power." (lecture: Canadian Forces College, Toronto, ON, 31 January 2008), with permission.

8; they comprise a moral, intellectual and physicals component each of which must operate in an integrated fashion in order to achieve effect.

For the purpose of our study we will focus on the physical component, the manifestation of which is combat power. It must be noted that the physical component is informed by each of the other components. When we discuss terms such as combat effectiveness we will note that it is generated by factors such as training, doctrine and cohesion which span the CF definition of fighting power.

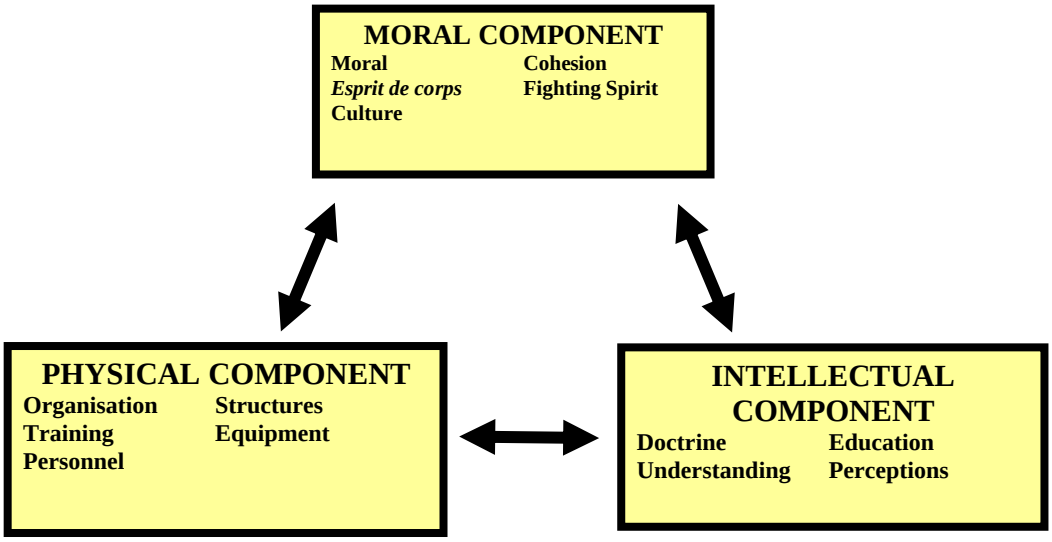

Figure 8: The Components of Fighting Power
Source: Major Dave Lambert, "Fundamentals of Land Power: The Generation and Application of (Land) Fighting Power." (Lecture: Canadian Forces College, Toronto, ON, 31 January 2008), with permission.

The CF applies fighting power in the battlespace in order to achieve effect. Figure 9 demonstrates that this is accomplished by arranging what are defined as the operational and core functions in order to achieve effect in the physical or psychological plane. The five operational functions represent the pillars that together provide the

commander the ability to apply the core functions of find, fix, strike and exploit. One can infer that each of the operational functions must be able to operate in a uniform and integrated fashion in order to succeed; anyone that is out of step or less capable will weaken the entire force.

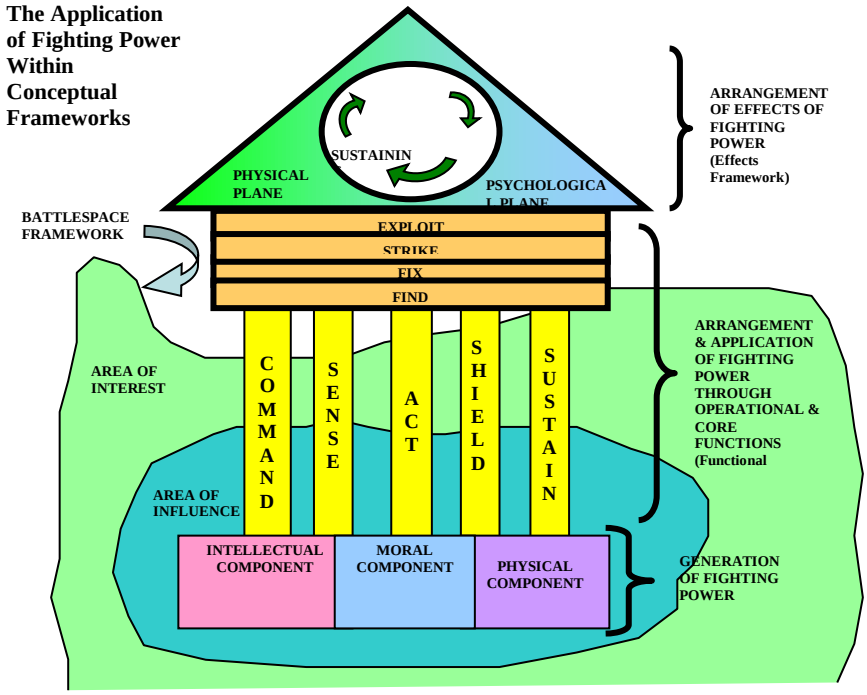

Figure: 9. The Application of Fighting Power within Conceptual Frameworks
Source: Major Dave Lambert, "Fundamentals of Land Power: The Generation and Application of (Land) Fighting Power." (Lecture: Canadian Forces College, Toronto, ON, 31 January 2008), with permission.

For the purposes of this study we will focus on the sustain function, as it is most likely to draw soldiers from all arms and all three services. The preponderance of soldiers who create this operational function are not combat arms, they are drawn from almost every CF MOS and all three services. Given the multitude of cultures there is no doubt that there will be many different perceptions about task, threat and training requirements. It behooves us to better define and prepare for this, to explain why it is necessary and to demonstrate how everyone in theatre can expect to perform their task

anywhere and in most cases must be a soldier first. There will no doubt be cases where one must make trade offs, on occasion this will be acceptance of lesser trade skills for stronger soldier skills, and at times it will be the reverse. We must be capable of quickly making a proper assessment based upon a full understanding of risk presented by threat and risk and consequence of either trade or soldier skills. Aircrews present one of the more difficult tradeoffs. The aircrew directly supporting ground operations, that is air crew that move soldier about the battle field, face tremendous risk but there is potentially higher consequences of their failure that demonstrate why we cannot sacrifice too much PCF training for soldier training.[78]

Fighting and Combat Power

Combat Power is of vital importance to a country, its military and the leaders of the military. It is a key component of Canadian Doctrine of Fighting Power; and while narrowly defined as the ability of a force to strike it does in fact have a broader application in that it is the primary tool that the force uses to achieve the commander's intent – it is quite versatile and does not always involve the application of violence. It can be used to enforce security simply by its existence; the force in being can provide sufficient deterrence in the case of protection or can be sufficient to ensure a desired type of behaviour from the enemy or belligerents. The bottom line is that it is the capability required for all military forces and it is critical to the success of military operations.

This critical concept does not easily lend itself to quantification, in many cases while the number of troops and amount of major equipment figure largely in the calculus

[78] Interview Subject #1, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 21 February 2008.

there are many intangibles which have an effect on the combat effectiveness[79] of a unit or a force. Historical case studies that have led to the evaluation in mathematical terms of combat effectiveness have been done so through the important lens of history, in these cases it is outcome that produces the mathematical results, and it is research of the contextual factors that help to develop our understanding. Many of the contextual factors are intangible and subjective. While it has its limitations, the study of combat power and effectiveness in historical case studies elucidates and prioritizes the many contextual factors. It is in this study that we realize that the commander has very little influence once battle is joined. The Commander's greatest influence come from the long term commander climate he creates prior to battle, and the quality of his training.

The combat power that a military unit or formation can apply to achieve a particular effect was studied in great detail by Dupuy. He used studies of historical battles to produce the value he calls as the Combat Effectiveness Value (CEV) in his study of historical battles.[80] Dupuy discovered through detailed historical research that the effectiveness of the German Wehrmacht was a product of the organization of the force, the stability created by the process in which they organized units, and the realistic and systematic manner in which they trained for war, far more professionally than any other military. The effect of their approach allowed them to create relative combat power

[79] There are many definitions or interpretations of Combat Effectiveness. Sarkesian posits "the only sure measure of combat effectiveness is the performance of the unit in actual combat" in Sarkesian, Sam C, "Introduction," Introduction in Sam C. Sarkesian, editor. *Combat Effectiveness: Cohesion, Stress and the Volunteer Military,* Volume 9, Sage Research Progress Series on War, Revolution and Peacekeeping (London: Sage Publications, 1980), 11.

[80] Dupuy, Colonel T.N, *Understanding War: History and Theory of Combat,* (New York: Paragon House Publishers, 1987), 105-108.

that was 2-3 times more effective than that produced by the allies, despite the consistent allied air superiority.[81]

It is posited by Dupuy that once battle is joined there is very little that any one person can do to influence or change the outcome. The battle environment is highly demanding, highly changing and one in which leaders and soldiers at every level must apply cognitive skills in ever changing circumstances. This condition pervades the entire battlespace and in the end it is the force that is able to organize and act in a cohesive fashion that will most likely win the battle. All of this implies that the Commander must have prepared to force well in advance as during battle he will clearly be unable to influence very many people directly. This would seem to imply that it is the preparation of the force that is perhaps the most important factor in winning of battles; or stated another way it is the human that is still the most important aspect of battle. In many historical studies it is the quantification of combat effectiveness through the use of non-intangibles that the human represents which has dominated our thinking. We will see that this is of particular note in the OR studies regarding the equipment and weapons mixes required of CSS convoys in the COE. We will also see another significant limitation is that all forces outside of the combat arms have been assumed away. That is to say their contribution to combat power is assumed to be of limited importance in the application of combat power and success or failure in battle. We have seen through historical case study that all members of a force have to be prepared to contribute

[81] Dupuy, Colonel T.N, *Understanding War: History and Theory of Combat,* (New York: Paragon House Publishers, 1987), 109-114.

everywhere on the battlefield and that sometimes they will have to be able to fight to complete their task.

Dupuy has noted that the two most important factors in the generation of combat power are Command and Training. He cites the experience of the US Army's 88th Division in the Second World War. He conducted the same kind of analysis of US fighting divisions Dupuy found that the 88th Division was the most effective fighting formation; it had a legacy of impressive success that went unbroken from training through to the end of the war.[82] The division completed its training for war in only 16 months, all remaining divisions required between 19 and 29 months.[83] They were highly effective in every studied battle producing a CEV of 1.43[84], or "43% higher than all other US Divisions"[85] and it was which was the highest of all measured Allies Divisions and it soon came to be seen by the German's as shock troops. The key defining factors that set it apart from others seems to be command and training. The Division Commander, MGen Sloan, was a very senior officer and was technically too old for Division Command. He was kept on because the Army leadership of the day remembered him as one of the most effective trainers and leaders; many of the then contemporary leadership had been trained by him while they attended CGSE. He developed a command climate that was conducive to disciplined, stable, systematic and realistic training that proved highly effective. One could conclude that if it is the intangibles that can have the greatest

[82] Dupuy, Colonel T.N, *Understanding War: History and Theory of Combat,* (New York: Paragon House Publishers, 1987), 115-120.

[83] Dupuy, Colonel T.N, *Understanding War: History and Theory of Combat,* (New York: Paragon House Publishers, 1987), 117.

[84] Dupuy, Colonel T.N, *Understanding War: History and Theory of Combat,* (New York: Paragon House Publishers, 1987), 121.

[85] Ibid, 121.

impact on the CEV then it is critical to ensure that the commander is given the opportunity to train his team as a stable organization and in a realistic manner.

A major limitation in most measures of past combat power is that it accounts directly only for the combat arms. All other combat functions appear to be assumed, which could mean that they have limited influence on combat power and therefore are not critical factors. Based upon the research in this paper it would appear that the subject of the influence of all of the combat functions has not as yet been sufficiently studied. While one can assume the other functions away the following observations must be taken into consideration: it is not truly known what effect that training of all combat functions will have; given the integration of all combat function in Canadian Doctrine, it should be assumed that weakness in one would have a deleterious effect on all; the positive benefit of training more soldiers to a higher level of combat skills would translate into the greater quality of any soldier; and in the COE, any CF member may be required to perform their PCF in a high threat environment. The subject of possible benefits and the requisite trade off in PCF skill requires further development.

Combat Effectiveness

Examining and measuring combat effectiveness is difficult. It is heavily influenced by many diverse factors such as politics, culture and perspective. Sarkesian developed a line of reason in order to cut through the difficulties in relating objective and subjective criteria:

> "In the simplest terms to determine combat effectiveness one must ask whether a unit is prepared to impose its will on the enemy. This leads to a subset

> of questions which include: are the troops willing to engage in combat? Is the leadership confident? How resilient is the unit? Are the men willing to come to grips with the enemy and dominate him?"[86]

By simply reframing these questions one can encompass the accomplishment of all PCF. This line of reason would then be better expressed as follows: Are the troops willing to grapple with and dominate the enemy in order to complete their task? Are they able to keep their mission firmly in sight even when fighting for their lives? How persistent are they in the accomplishment of their mission? Combat effectiveness translates into persistent and agile combat power and it is the means through which the commander achieves success. One can develop methods to improve it with greater understanding of its constituent parts.

Determinants of Combat Effectiveness: Integration and Balance

Beaumont and Snyder note that combat effectiveness will depend heavily upon how well the overall system is integrated and that effectiveness is complicated by the need to achieve a balance among the major combat functions. [87] These determinants are become more important in light of the recent CF decision to re-establish the A1 echelon in Afghanistan.[88] This will increase the preponderance of OAS troops who will deploy

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[86] Sarkesian, Sam C, "Introduction," Introduction in Sam C. Sarkesian, editor. *Combat Effectiveness: Cohesion, Stress and the Volunteer Military*, Volume 9, Sage Research Progress Series on War, Revolution and Peacekeeping (London: Sage Publications, 1980), 11.

[87] Beaumont, Roger A, & Snyder, William P, "The Dimensions and Determinants of Combat Effectiveness," Chap. 1 in Sam C. Sarkesian, editor, *Combat Effectiveness: Cohesion, Stress and the Volunteer Military*, Volume 9, Sage Research Progress Series on War, Revolution and Peacekeeping, (London: Sage Publications, 1980), 36.

[88] Department of National Defence, Chief of the Land Staff. *CANLANDGEN 003 – Army Learning Process Update*131200Z MAR 08, (Ottawa: NDHQ 2008), paragraph 3g.

and remain deployed with the fighting echelon. The question of balance from the TF perspective has to do with resolving limitations in resources and employability. The integration of combat functions should improve the projection of combat power. That means elements deployed to wherever they need to operate from should be able to deploy and receive the expect support. Therefore, a company working in a deployed location will need integral transportation, supply, and maintenance support. The soldier's tactical and technical ability must be such that they can accomplish their PCF while remaining integrated with the force they support. Training is vital and an effective program is founded upon a thorough appreciation of the tasks to be performed.

Task Standards and Training

Battle Task Standards (BTS) are the minimum levels of competence and the fundamental building blocks of every task a soldier must do. For Land Ops, in which any member of the CF may be called upon to participate, the CF has adopted the individual Battle Task Standards. Members trained to these standards are expected to have the requisite individual skills to permit survival and success in any CF deployed operation. Individual skills need to be looked upon as only one part of the skill set that a deployed member will need to be able to work in the battlespace as a member of the team. The Battle Task Standards for teams falls into the realm of collective training; the Army has begun to develop its BTS and has clearly identified tasks common to all members of the Army. They aid in definition of the collective tasks that all members of a deployed task force must be prepared to undertake, but they require revision to determine commonality

to all environments and to further define their constituent parts. These BTS still suffer from some limitations:

a. *Acceptance*. There is still considerable scope for divergence in professional judgment as to what constitutes essential and non-essential tasks. The Individual BTS (IBTS) does not define specific levels of required capability prior to deployment and thus far research does not indicate the presence as a universally accepted minimum. The common [collective] BTS are not yet CF standards for Land Ops and therefore subject to scrutiny and disagreement. A common BTS is required.

b. *Skills Development*. There are gaps in the BTS both qualitatively and quantitatively. Many of the BTS are new as common tasks. They require further refinement, for example, the crucial task of conducting Fire and Movement for BTS conducted in contact with the enemy are not yet explicitly laid out in any BTS. A review with modifications or amplifications is necessary.

c. *Training*. The identification of tasks then drives the training development process. The skill must be analyzed in the broad scope of the entire training system to determine time and location of training and retraining, methodology, and level. There is scope to re-evaluate the current IBTS and the entire BTS will require training development, ideally this should be done concurrently with the process of CF doctrine development to ensure timely delivery of required training

OPERATIONAL RESEARCH

Four OR exercises were reviewed in the research of this paper each providing insight into convoy operations in the COE. The first study used Agent Based Modeling in an attempt to determine those critical factors that contribute to mission success. The use of ABM to model combat situations is relatively new; the researchers have chosen this route for this study to both analyze convoy operations and to develop their thesis regarding the use of this new technique. Each study was also undertaken to explore methods of improving convoy security based upon the contemporary experience. Statistically in Iraq 1-5% of all logistics convoys were being attacked on a daily basis.[89] The author noted that similar experiences had occurred during most of the wars throughout history, in particular those where a powerful enemy was successfully confronted by a lesser strength enemy. The study referred to lessons from Iraq that indicated preparations for convoys were completely deficient from the staff to commanders and participants[90].

Convoy doctrine is relatively new and very much in need of detailed study and development. Operational Research can compliment professional judgment and experience by systematically evaluating the actions of enemy and friendly personnel using the synthetic environment. One must on personnel and less on equipment. For example, while typical OR focuses on the importance of a weapon system to

[89] Hakola, Captain Matthew B. "An Exploratory Analysis of Convoy Protection Using Agent Based Simulation." Master's Thesis, (Monterey, California: Naval Postgraduate School, 2004), 10.

[90] Hakola, Captain Matthew B. "An Exploratory Analysis of Convoy Protection Using Agent Based Simulation." Master's Thesis, (Monterey, California: Naval Postgraduate School, 2004), 6.

survivability, the researcher can use results to infer conclusions with respect to task and training identification.

Hakola used ABM modeling in an attempt to develop understanding about the actions of the troops in action, an important type of modeling that steps away from the traditional focus on equipment and weapons mixes. It still has limitations given that it is relatively new. It can capture complex interactions between individual elements on the battlefield; it is not set up to act in a proscribed manner and it can be used to quickly set up and run many tests in short order; this makes it ideal for analyzing human interactions.

In the first test the blue team consisted of three security vehicles, 1 UAV, and 12 logistics vehicles. The enemy had 1 x IED, 2 x RPG, and 5 x Infantry, they tend to fight offensive and avoid strongholds. They attack at close range and use speed, shock, and intelligence to get in and out quickly using a combination of IEDs, SA, and RPGs. The Bn uses the following practices: Gun trucks with aggressive posture provide a psychological benefit, gun trucks aggressively suppress in attacks, and every member of the convoy is responsible for security. The model uses an unblocked ambush.

The following conclusions are drawn from this study:

a. "It is the actions of the logistics elements, its ability to act as a team and extract in an orderly manner from the ambush, that play the largest role in the success or failure;

b. The aggressiveness of the security element reduces casualties, however, to a lesser extent than the actions of the logistics convoy; and

c. The inclusion of the UAV seemed to be the single most important combat enabler."[91]

We can begin to build our conclusion by inferring the following from this study:

a. Training convoy drills;

b. OAS soldiers must integrate with all arms;

c. Capable of breaking contact with the enemy; and

d. Casualties are a fact of life; every soldier must be capable of providing combat first aid, controlling a CCP,[92] and in medical evacuation operations (by air and ground).

Canadian Forces Operational Research

The Canadian Forces began to develop future force concepts as part of the Army transformation in the 1990s. Part of the concept development included the acknowledgement that there were deficiencies in convoy doctrine; this was exacerbated by the onset of the war in Iraq and Afghanistan. The armoured school created Convoy Escort Doctrine in 2005 and DAD 9 published convoy TTP in July 2006. Until then the only doctrine available for convoy operations had been B-GL-005-401/FP-030, road movement. The doctrine was not robust; the situation was reminiscent of the early US Vietnam experience. The Army believes that "its ability to operate in [the COE] is

[91] Hakola, Captain Matthew B. "An Exploratory Analysis of Convoy Protection Using Agent Based Simulation." Master's Thesis, (Monterey, California: Naval Postgraduate School, 2004), 80.

[92] Casualty Collection Point. Interview subjects noted that all CF members should be prepared to manage basic triage and a CCP either with or without a medic present.

created through a combination of training, equipment, vehicles and weapons [in all of which they are currently deficient]."[93]

The aim of experiment 0502 was to investigate the effects of various options for arming, armouring logistics convoy vehicles as well as escorting by a troop of LAV III. The scenario convoy comprised 10 logistics (9 heavy, 1 light), and 4 LAV III when the escort was present. The scenario comprised the route of highway 1 between Kabul and Kandahar, the ambush was to occur on the highway, it was to be a blocked ambush in which the convoy was trapped and would have to fight. The enemy strength was 10; they employed IED, RPG and small arms. The members of the convoy were explicitly assumed to be qualified on their vehicles and their weapons.[94] We can infer that the convoy logistics section consisted of twenty personnel, and would probably have been divided into a minimum of two sections[95] and a platoon HQ for C2.[96] The experiment concluded with the following observations:

a. "Increasing armour protection on logistics vehicles is a positive step;

b. Arming logistics vehicles is good, an ideal to have a mix of C-9, C-6 and .50 cal;

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[93] Gill, Major Andy, & Kalantzis, Eugenia, *Report AEC-R 0502 Limited Objective Experiment 0502 Convoy Force Protection*, Report Prepared for DLD 9 & Army Experimentation, (Kingston: Army Experimentation Centre, 2007), 1.

[94] Gill, Major Andy, & Kalantzis, Eugenia, *Report AEC-R 0502 Limited Objective Experiment 0502 Convoy Force Protection*, Report Prepared for DLD 9 & Army Experimentation, (Kingston: Army Experimentation Centre, 2007), 2-4.

[95] Further evidence on organizing for cohesion indicates that "the smallest elements should have no more than 10 soldiers", and ideally a commander should have "between 3 to 5 elements under his command" in Henderson, W.D, *Cohesion, The human element in combat*, (Washington: National Defense University, 1985), 21.

[96] Ideally span of control for any leader is between 3-5 elements, Canada. Department of National Defence, B-GL-300-003/FP-001 "Command in Land Operations", 2007, 3-6.

c. Armoured and heavy logistics convoys can operate unescorted but have a lower casualty rate if escorted."[97]

We can infer the following:

a. CSS Troops must be trained and equipped with C-9, C-6, .50 cal;

b. CSS troops and Jr Leaders must know how to command and act in an ambush including conduct battle drills; [98]

c. Applicable BTS include: Counter Ambush. Break contact, regroup, and HLS;[99] and

d. The convoy took casualties in every scenario; observations concerning medical training are extant.

This study provides further evidence that there is a need for an improvement in OAS soldier's skills. Experiment 0601 examined convoy survivability in greater detail by experimenting with more variables in armouring, arming, and escort combinations

[97] Gill, Major Andy, & Kalantzis, Eugenia, *Report AEC-R 0502 Limited Objective Experiment 0502 Convoy Force Protection*, Report Prepared for DLD 9 & Army Experimentation, (Kingston: Army Experimentation Centre, 2007), 4-7.

[98] As noted previously ". . . battle drills were developed to provide an instinctive reaction to enemy encounters. [Drills] are designed to teach the soldiers learned reaction to combat stimuli . . . [t]he sequential execution of the drills is a logical progression of action that enables a section to overcome minor opposition using fire and movement" . . . . The drills are intended to ". . . be applied sensibly on the battlefield . . . not to be followed blindly . . ." in Canada. Department of National Defence, B-GL-309-003/FT-001 "Infantry Volume 3 The Infantry Section and Platoon in Battle" (Ottawa: 1996), 5-2-1. These drills provide the ideal adaptable tool for a convoy commander to handle tactical problems posed by the enemy. These drills should be integrated into Canada. Department of National Defence, B-GL-005-000/FP-001 "Land Force Convoy Operations - Tactics, Techniques and Procedures (TTP)," (Ottawa: 2007)

[99] Canada, Department of National Defence, B-GL-383-002/PS-002 "Land Force Volume 2 Battle Task Standard," (Ottawa: 2007), 5, 6, 8.

including larger and small convoys. The enemy scenario was similar but with a slightly larger enemy (15 troops) and it was conducted in the urban environment of Kandahar.[100]

The most significant gain in survivability came from having a larger convoy that was heavily armed and had an escort. It was three times more survivable and lethal than the next option which was merely to provide an escort. [101] Further observations can be drawn from the experiment. One can safely assume that the four escorts would be organized into a troop or platoon and they would be in overall command of the battle. The 13 convoy vehicles would have 26 troops drawn from OAS; they would have to be organized into three sections and a HQ for C2 purposes. The logistics platoon commander would have to know how to fight and conduct basic tactics such as defence and fire and movement of troops and battle drills as a platoon. The inferred conclusions from 0502 remain extant.

Experiment 0701 explored the efficacy and applicability of the new Canadian Convoy TTP in an ambush scenario. The training scenario remained common and a small convoy was used. The intent of the test here was focused upon mission accomplishment which in this case was to avoid a stand up fight and get the vehicles out of the ambush sight if possible and carry on with the mission. The experiment reinforced that the ideal scenario is for the convoy to get out of the ambush sight under cover of

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[100] Gill, Major Andy, & Cazzolato, Francois, Chapman, Ian, *Report AEC-R 0601 Limited Objective Experiment 0601 Convoy Force Protection*, Report Prepared for DLD 9 & Army Experimentation, (Kingston: Army Experimentation Centre, 2007),3-4.

[101] Gill, Major Andy, & Cazzolato, Francois, Chapman, Ian, *Report AEC-R 0601 Limited Objective Experiment 0601 Convoy Force Protection*, Report Prepared for DLD 9 & Army Experimentation, (Kingston: Army Experimentation Centre, 2007),6-10.

suppressive fire in a rapid but disciplined fashion.[102] We can conclude that the convoy must know its drills, in this scenario the escort played the role of suppressive fire while BISON and recovery extracted vehicle and injured personnel.

These scenarios represent both likely and worst case scenarios. Given the manner in which we force generate convoys from ad-hoc National Support Elements it is conceivable that anyone in a theatre of operations could be required for convoy operations. Individual skills are crucial to team and member survival and mission accomplishment.

INTERVIEWS

The purpose of the interviews was to conduct exploratory research using the Active Interview technique to develop a 'stock of knowledge'[103] through a collaborative approach. The subjects provided an important learning opportunity for the investigator by linking theory and practice with personal experience. The act of 'collectively observing' past events and activities with the benefit of hindsight and current professional frame of reference provided vast knowledge and insight that was used to develop this paper far beyond what could have been expected from the review of historical and lessons learned documentation. Despite the limitations of such a small sample size the convergence and agreement between theoretical and practical based on practice and results leads one to conclude that the argument is worthy of deeper study.

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[102] Gill, Major Andy, & Chapman, Ian, *Report AEC-R 0701 Limited Objective Experiment 0701 Convoy Force Protection,* Report Prepared for DLD 9 & Army Experimentation, (Kingston: Army Experimentation Centre, 2007), 2-7.

[103] Holstein, James A. and Gubrium, Jaber F, *The Active Interview,* Volume 37, Qualitative Research Methods, (Thousand Oaks [Calif.]: Sage Publications, 1995), 32

The sample subject audience consisted of seven military officers whose time in service ranged from 18-30 years of experience. The audience consisted of two pilots, three combat arms officers, and two logistics officers. Each of the officers had experience at command that spanned from aircraft and platoon through flight and company to squadron and battalion. Three of the officers have both participated directly in and commanded troops during combat, one at company and two at unit. The variety of experience also encompasses numerous peace support operations in the Balkans and Africa. Six of the officers served in Afghanistan between 2005 and 2006, two in Iraq. Six of the officers have either trained as individuals or trained units for peace support operations. Both Air Force officers have a great deal of time as air crew and extensive operations, one in particular commanding aircrew that were supporting ground operations in war. Both officers provided valuable insight into a part of the profession at arms that we forget is operational every time an aircraft leaves the ground. This provides a good offset argument for discussion on balance of trade and soldier training. Aircrew serve in a technical specialty that might be considered to be at the higher end of the spectrum where technical proficiency far outweighs proficiency in soldier skills in importance. This is due not only to the demanding requirements of qualification currency it is particularly important given the catastrophic consequences of failure. We will see that these measures, albeit necessary, create a potential lack of integration that is vital to combat power.

Summation

The choice of the active interview and the depth and variety of experience of the interview subjects led to very wide ranging discussions. For the purpose of this paper the

key points are summed up under several headings: expected effect on combat power, culture shift and task expectation, the effect and importance of realistic training, and balance between tactical (soldier) and technical (PCF) training.

Combat Power

The expected effect on combat power is difficult to measure effectively as it is influenced by a vast array of factors and it can also depend greatly on personal perspective. In this narrative we will narrow our discussion to the importance of training, organization and mutual trust. The first example of improved combat power came from the artillery and the employment of the FOO parties. The FOO party deploys with the unit and subunit that it is supporting and must always be deployed with the supported sub-unit to ensure coordination of all indirect fire support. The FOO party must become part of the team, learn and adopt their tactics and mannerisms and are usually employed in the same conditions as the fighting troops of the supported sub-unit. In our subject's case, the FOO party developed mutual trust with the commander of the sub-unit and the members of the sub-unit by effectively integrating and proving their worth both as gunners and as members that had absorbed the culture of this unit. The FOO party must demonstrate similar agility and tactical acumen when deployed with other types of units. The subject experienced the same sense of integration years later when training an artillery battery for operations. By ensuring that every member of his sub-unit was trained to section live fire by members of the supported infantry battalion, the officer commanding developed strong bonds with the supported unit. When mutual trust and understanding are developed the command team and the members of the unit or sub-unit will trust that they can push the extra mile and will push the boundaries of the possible.

The mutual respect facilitated team learning and improved team integration, as noted by Sarkesian a critical component of combat effectiveness.[104]

The forthcoming reintegration of the A1 echelon with sub-units in Afghanistan is likely to present an opportunity to improve combat power. The A1 echelon support soldiers can expect to operate from FOBs and to deploy throughout the sub-units AO in support of operations. While it would be ideal for them to deploy with security elements this will not insulate them form the effects of IEDs or ambush. They would in effect face similar threat to that of the fighting members of the sub-unit. The effect of having these essential support troops dedicated to and working with the sub-unit is intangible but powerful. As a commander with dedicated support and advice from a known and trusted source the OC would be able to push the boundaries of the possible and increase combat power, which would be defined by what one would feel confident in attempting. The troops within the sub-unit would also know they could push the extra distance and achieve more. The subject viewed this as a tremendous increase in combat power[105]. By extension, at every level of command this type of integration between supported and supporting would increase combat power even further. These represent very clear examples of the integration of the operational functions.

Culture Shift – Task Expectation

[104] Interview Subject #2, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 17 March 2008

[105] Interview Subject #7, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 8 April 2008

The existence of what might be considered a culture shift or change in task expectation was reinforced during the interviews. The subject in each case noted a difference between the cold war and transition to peace support operations and the sudden shock of war in Afghanistan and Iraq and transition to counter-insurgency and the long war. The attitude of the cold war and peace support operations can be summarized as one where it was believed that the PCF would isolate the OAS soldier from combat and some of the more dangerous aspects of the COE. This quickly changed upon the realization that anyone in the modern battlespace would have to risk death and injury to do their job. This led to a shift in belief of the necessity of training and protection but without a common doctrine or commonly accepted training standards both TTP and training were applied unevenly. From the multitude of air squadrons that developed their own emergency procedures to the logistics units that trained to different standards for two success peace support operations in the span of two years. The sudden reinforcement of soldier skills might at first glance appear to be good but without a common plan it becomes disjointed. Further, the development of highly skilled soldiers requires time and it is difficult to achieve an acceptable common standard when one starts from a low standard. What is required is a warrior ethos that spans the full spectrum of OAS that permits strong but flexible common doctrine. It seems a historical constant that nations lose sight of the dangers to everyone on the COE only to have to adjust for this mistake once conflict commences.

Training

The effects and importance of training and live fire exercises was reinforced through most interviews. The employment of OAS soldiers throughout the battlespace

was common in six interviews and it dispelled the myth of insulation from combat and reinforced the need for training. Convoy operations provide a good example. The typical convoy at the moment will have a logistics element and a security element consisting of a combat arms section or platoon. The logistics element has to be trained extensively in drills, fighting in the defence, and in communicating and life saving first aid. They achieved levels of skill that were equal to the security element. If they had been forced to dismount, they were prepared to fight.[106]

Live fire training was acknowledged to be the all important critical last step in the preparation of troops for combat. In much the same way that training will never truly replicate combat, dry exercises and simulations cannot replicate the benefit of doing the same training under live fire and battle conditions. The author would posit that achieving comfort with performing one's PCF under these conditions is a vital part of preparing for war or peace support operations.

Each subject with experience at live fire training noted this importance and a similar process of development in both themselves and their soldiers. The officer who as a platoon commander who led his troops through six live fire exercises over thirteen months summarized it best.

> "The first live fire was such a rush that all I could focus on was me and my personal weapon. When the serial was over I was counseled in a direct fashion that my job was to orchestrate my sections and weapons and the combat enablers to produce combat power (or words to that effect). As an aside it was

[106] Interview Subject #6, Interview to Explore Resolving Limitations to Combat Power, interviewed by author, 7 April 2008

> pointed out that by comparison my personal weapon contributed considerably less to combat power than all of the weapons in the platoon and the artillery support that I should have called for. During each successive live fire serial I became increasingly aware of how I could employ each of my sections and weapons and eventually rediscovered how to think under near battle conditions."[107]

These observations mirror many comments concerning the process soldiers go through in training. This progression in professional development is where one becomes accustomed to the conditions of live fire and simulated battle, one's actions become reflexive through repetition thereby freeing the cognitive to grapple with the difficult task of appreciating the problem, and formulating and implementing a course of action.

The acknowledgement of the importance of repetition in training under realistic conditions was common amongst all subjects. The aircrew commanders noted that considerable time is required to ensure those aircrews have first learned and then remain current on all of the tasks that must be done for even the simplest task involving aircraft. This capacity becomes even more important for emergency drills. These must be drilled endlessly to ensure that in the brief period of time between the onset of an emergency and the end of the event that the hundreds of actions that must be taken by a crew are completed in sequence and in a timely fashion. The aircrew commander must be ready to complete not only his tasks but also to supervise and motivate the members of his crew who might freeze despite countless hours of training.[108] The soldier on the ground will

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[107] Interview Subject #7, Interview to Explore Resolving Limitations to Combat Power, interviewed by author, 8 April 2008.

[108] Interview Subject #1, Interview to Explore Resolving Limitations to Combat Power, interviewed by author, 21 February 2008.

face emergency and must be prepared to act. As one former commander noted that in the event of an IED attack or an ambush the soldier administering first aid either to himself or another should be capable of doing so automatically. There is no time to read the instructions on the package of the tourniquet when the rounds are coming and someone is in danger of bleeding to death.[109]

Tactical versus Technical

The difficulty associated with balancing these conflicting demands will probably never disappear. It is largely a contextual issue and demands that the institution and commanders take a nuanced approach that permits adaptation to the many important contextual pressures that every commander will face. The air squadron commander who must ensure technical proficiency in air crew that are now exposed to greater risk in directly supporting ground operations through moving troops and combat supplies must mitigate the challenge. This is done through a combination of training and other force protection measures that minimize risk. For high readiness specialized air crew they have to rely on survival training that they learned as part of basic pilot training and reinforced by a three day training package of long barrel weapons training and theatre specific threat and emergency procedures. Mitigation strategies include the development of a better intelligence picture before selecting temporary airstrips and in developing security plans and SOPs that permit better security and less time on site.[110] This approach represents one possible solution in a context whereby operators require very well trained PCF skills

[109] Interview Subject 5, Interview to Explore Resolving Limitations to Combat Power, interviewed by author, 24 March 2008

[110] Interview Subject 1, Interview to Explore Resolving Limitations to Combat Power, interviewed by author, 21 February 2008.

and with technical and maintenance issues that shape and limits employability. The OAS soldiers must work in a much more integrated fashion with the remainder of the task force.

The last 10% of the support chain is the simplest yet most dangerous; the entire sustain function can fail if those who deliver are neither equipped nor trained to survive the threat. It is at this point where both tactical and technical skills are of critical importance. In one case the officer believed that the training received in trade qualification courses and the conduct of daily support tasks is sufficient to maintain technical proficiency for battlefield support; that any finesse technical ability beyond those is very much a civilian task.[111] The question of how much training will always be a challenge. While training as a soldier first is critical and the need for autonomy important, one needs to balance many conflicting factors. An example it would be ideal to have logistics convoys that could operate without combat arms escorts, it would be unreasonable to expect logistics troops to learn how to operate a LAV III for self protection.[112] As another example in a particular theatre a commander had to make a call based on time constraints and specialist availability that some of his soldiers would have to remain on camp. For example, outside of the mechanics dedicated to recovery support the commander could not afford the time it would take for battle procedure, convoy deployment and post operation drills.[113]

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[111] Interview Subject 5, Interview to Explore Resolving Limitations to Combat Power, interviewed by author, 24 March 2008

[112] Interview Subject 4, Interview to Explore Resolving Limitations to Combat Power, interviewed by author, 17 March 2008.

[113] Interview Subject #6, Interview to Explore Resolving Limitations to Combat Power, interviewed by author, 7 April 2008.

The commander needs to approach these decisions with the warrior ethos, in the OAS context that should mean a willingness to grapple with the enemy if necessary in order to complete the mission. It should include an ability to maintain focus on the mission even if required to fight for survival while achieving it and the ability to deploy anywhere they are needed to conduct their task. At times the sustainment commander will have to impose limitations on soldier skills training but these should be the last resort. A task force achieves its full potential when the major components operate in a cohesive and integrated fashion and the OAS soldier must be ready to achieve this standard of employment.

CHAPTER 2 CONCLUSION

Canadian doctrine informs all CF members that the deployed TF applies fighting power to produce effect. This is achieved by generating the components of fighting power in a cohesive manner by synchronizing and integrating operational functions in order to apply the core functions for effect. Weakness or failure in any function creates mission risk. Combat power is the product of the physical plane of fighting power and is the physical manifestation of ability to achieve effect and combat effectiveness is a qualitative measure. Combat effectiveness has many constituent parts but study and history have demonstrated that command climate and training have the greatest influence.

The purpose of training within the CF is to prepare all soldiers to work and fight as members of unit in the COE. While this intent seems clear one must translate the institutional intent from doctrine to TTP, then BTS and then to training plans and standards. This is a long process which requires clarity of mutual understanding and

detailed application of thought to ensure proper application. There is much room for misinterpretation or deliberate divergence from the institution particularly when a member or a group's task expectations are out of line with the institution and its perception of need. We have seen that false lessons and other factors have led to the mistaken belief that the OAS soldier face lesser to no threat in a time when modern military equipment require greater technical skills. This focus on trade can lead to a false sense of insulation due to task expectation. Adults must see a need, reason or benefit to learning or training otherwise they will avoid it or do poorly at it. We have seen how the militaries of the world have gone through a culture shift as the harsh realities of combat hit home. We have seen that for any soldier on the battlespace those realities have in fact been constant throughout the history of warfare. The personal experiences of contemporary veteran officers reinforce these observations and both elucidate the need to align task expectation with institutional requirements and deepen our understanding of soldier skills. Operational research reinforces these observations.

We can see that by linking doctrine and training philosophy to personal experience and reinforcing it with operational research that training modifications are required; in some cases small but in the main more focus on greater survival skills that allow the soldier to effectively more, shoot, and communicate in order to accomplish their task. There needs also be included a greater emphasis on the individual medical skills of every soldier, from buddy aid to CCP management and casualty evacuation. The importance of training realism cannot be overstated, the reason why live fire must be incorporated as much as possible. It is critical that the leadership enable all soldiers to

perform those functions that Marshall called the true expressions of initiative and critical to success in battle.

CHAPTER 3 – ANALYSIS

INTRODUCTION

The application of theory requires that we amalgamate the various intellectual threads and develop a working training model. In order to demonstrate the potential benefits we will compare time in terms of training days prior to deployment against additional task days available upon deployment and other potential benefits in combat power. We will demonstrate increased survivability to soldiers, implying they can work in a more autonomous fashion. We will link the aforementioned skills to existing BTS and then to QSTP and form a basic training plan based on a scenario that assumes a full slate of collective training to follow. WE will then test for benefit based upon a TF scenario. WE will see that the insertion of convoy drills and live fire training into the continuum of training for deployment will increase survivability of logistics convoys and improve combat power.

THE CONSTRUCT

The deployed TF model is found at figure 1**.** It can comprise of air, land and sea components but for the purposes of this study we will focus on the land component. This consists primarily of an all arms team typically based on an Infantry Battalion or Armoured Regiment. They will have many sub-units within the unit and now will have their A1 echelons. This will increase the number of CSS and hence OAS soldiers in

unsecured locations such as FOBs. The TF will typically deploy its sub-units on a full time basis to forward locations. The OAS support troops will have to transit relatively unsecured LOC in order to conduct their PCF, a great many more will now deploy to these locations on a full time basis. The TF is given its next level of support by the National Support Element (NSE); any support projected forward will deploy as a convoy, a combat operation intended to ensure the time and effective deployment of support. The NSE tends to form as an ad-hoc unit forms to six months prior to deployment. It draws soldiers from all three services. While some of these soldiers may never leave the MSB most will have to deploy forward either to provide their job or to provide security as a co-driver in a vehicle on a convoy. During these convoys the soldier can expect to be involved in security on the halt, they may face IED attacks and ambush. The force generation of a convoy is done internally to the NSE. Typically convoy vehicles will always have the same driver but the co-driver for each vehicle will be different for every convoy operation. Throughout a deployment everyone in the unit should expect to deploy forward on a convoy.

THE TEST MODEL

The purpose of the test model is to aid in the development of a cost benefit analysis to further expand our understanding of the benefit and risk. Traditionally the training and employment of forces is very much a trade off that is based upon professional judgment and our understanding of risk that we are willing to assume. Simply stated it is rarely possible to give all soldiers all of the training that we would like

in order to prepare them for every possible contingency. Time and space permit only a select number of troops will receive training. The purpose of this model is to demonstrate our current force generation, and training strategy as well as the force employment in theatre. We will demonstrate how through linking the threat and employment environment to specific TTP, then to measure of performance we can determine a baseline minimal approach to training that will give soldiers a basic inculcation for battle. This will then be factored into an employment and threat model in which we will demonstrate that this increased level of proficiency in most cases will provide commanders with greater flexibility in the employment of combat power. This is a pure time and cost analysis, the more important intangible aspects are assessed elsewhere in the paper.

Measures of Effectiveness (MOE)

The MOE used will be time, combat power and relative ammo costs. It will be demonstrated that this modest investment in training improves the scope of employability of CSS troops. This in turn gives a TF Commander greater flexibility to reallocate scarce combat power.

Scenario

Under the current deployment construct a Task Force's principle Combat Service Support Unit, the National Support Element (NSE), is allocated under command a platoon of combat arms soldiers whose only task is to provide convoy escort for sustainment operations. The Task Force Commander will achieve greater flexibility to

allocate this combat power to other tasks if the OAS soldiers are trained to conduct a greater range of soldier skills.

Composition

A Convoy Escort Platoon of thirty troops is capable of deploying six convoy escort vehicles at once, with a minimum of two in a convoy. The TTP is to deploy 2 vehicles for every 5-10 logistics vehicles. Under normal circumstances they command the convoy. Typical composition is as follows:

Serial	Vehicle	Personnel
1	2 x Escort	10 infantry
2	2 x BISON(CSS)	6 CSS Troops
3	5 x logistics vehicles	10 CSS troops
4	Recovery	3 Maint pers

Table 1: Typical Convoy composition

A properly trained CSS convoy will be able to better coordinate its own defensive security and bring fire power to bear and get out of challenging situations with greater ease. Conceivably they could take on the command role and conduct escort fire power tasks therefore the security requirements could be reduced as necessary.

In order to provide further cost benefit analysis we will use the task of convoy operations conducted by the NSE. In this model we will assume a certain convoy composition that will remain relatively static throughout. The employed OAS soldiers will usually be selected for training based upon the likelihood that they will be selected for pure tpt tasks and hence will spend most of their time working away from secure camps. In order to factor in leave, duties, and the need to train additional convoy support

vehicles such as recovery crews additional personnel will have to undergo a minimum level of enhanced readiness training.

Training OAS Soldiers

The model example involves the training of 60 OAS soldiers in the course found at appendix 3; it was developed by using defined BTS/tasks to determine training requirements. The basic course designed to achieve the dual aim of giving soldiers confidence in their convoy drills and confidence in their weapons handling skills has been deliberately limited in scope based upon the risk analysis and assumptions (appendix 3). This training focuses on critical aspects of soldier initiative and confidence. The basic training package involves a relatively modest investment in time and ammunition. Course duration is 12 days and ammo costs are less than an artillery or an armour live fire exercise. We assume that the minimum ideal number of trainees is 60 personnel.[114]

Escort Duties

The escort deploys on a 6 month tour (180 days). An individual soldier will likely only be available for duty for 113 days (possibly 125). An escort section of ten represent 1130 task days.[115] It could be safely assumed during the pace of operations that the number of rest days would likely be cut in half then the number of task days rises to

[114] **Training Reqr**: 18 OAS soldiers/convoy * 2 convoy/day= 36 soldiers + [36*1.25 (Leave)] = 45 + 15 (6 for recovery / 6 for duties / 3 spare) =60. **Note**: this is risky, usually all members of the NSE will have to participate at some point in time. This type of risk is typical of that faced by a commander who must balance time available with training requirements. **Training Days:** 60 OAS soldiers * 12 training days = 720 task days

[115] **Effective days**: 180 – 19 (leave) – 24 days duty (4 days/month) – 24 days admin/rest (1 Sunday/month) = 113 task days. **1 x escort section** = 113*10= 1130 task days.

1250. In the model above a trained CSS convoy platoon could reduce escort vehicles by 1 vehicle for each convoy which would then free up a section per day.

Benefit

In a TF that is usually strapped for troops, if an NSE can be trained to a sufficient level in which security permits the reallocation of a section for the tour then the TF will benefit greatly. During the conduct of a deployment, the addition of 1130/1250 task days at a cost of only 720 is substantial. Even if training estimations are at variance with reality it is still beneficial. If we assume that training time actually requires double the current estimation the TF comd still has very nearly an equal number of operational task days compared to what he has invested in training. It is still an effective trade off. This is further reinforced if one considers the very likely possibility that a well trained NSE could permit the re-allocation of the entire escort for focused TF operations. This would represent an 11% increase in total TF power.[116]

CONCLUSION

A TF Commander will accrue tremendous benefit and greatly improve his chances for mission success by changing the training of the OAS soldiers to incorporate tough and realistic soldier skills training. A TF Commander requires effective combat power in order to successfully apply fighting power and achieved his desired effect.

[116] Interview subjects viewed this as a substantial increase in combat power and flexibility, consider that an infantry battalion has only nine platoons to begin with in Interview Subject #7, Interview to Explore Resolving Limitations to Combat Power, interviewed by author 8 April 2008

Mission accomplishment is dependent upon all of his operational functions to integrate in a balanced fashion. Historical research and contemporary experience demonstrate that, despite peace time expectations as to the safety of the rear area, the OAS soldier faces risk in any theatre of operations. All soldiers must be prepared to fight to achieve their mission.

The OAS soldier has the concurrent requirement for tactical and technical proficiency. The institution and the soldier must have mutual understanding of task requirements, and the operating environment to include threat. This will ensure that the military provides appropriate training and resources and the soldier is cheerfully motivated to achieve excellence. In the tactical aspect of skill it is excellence in the fundamentals: shoot – move – communicate, to which is added the preservation of life, that ensure the OAS soldier can bring his skills to the appropriate place and time and greatly improve combat power.

Canadian training doctrine is founded on timeless principals that have both evolved but remained relatively constant for over a century. Progressive, repetitive training under realistic battle conditions prepares the soldier and gives them the skill and confidence to do their job in battle. Extensive training builds mutual trust, it deepens bonds of loyalty, pride and cohesion. These are crucial to sustaining the unit and the soldier in battle, particularly given the isolating effect of the COE. The TF Commander will see better component integration and achieve considerable gains in combat power if he/she adjusts the training of OAS soldiers so that they can be effectively employed throughout the battlespace.

RECOMMENDATIONS

The CF must ensure to the maximum extent that any soldier deploying to a theatre of operations is confident and proficient in the basics. This is achieved by first conducting repetitive training in order to master the convoy TTP. Next the soldier must become a confident marksman. This is achieved through long hours of progressive weapons training from basic handling to multiple applications in complex FFRs from the individual level of training to section and platoon. The skills of fire and movement, communication and preservation of life must be incorporated into all training and practiced incessantly. The CF must next systematize this approach and develop a plan that integrates all appropriate doctrine and TTP. The foundation exists but, armed with the knowledge of task conditions and threat, one must pull together the many threads of doctrine. The aim is to develop a coherent approach that ensures all OAS soldiers are prepared to contribute to mission success.

APPENDIX 1 – DEFINITIONS

AIM

The purpose of this appendix is to summarize some key definitions or concepts that were not expanded upon in the main document. Included in this appendix is discussion on the influence of culture and false lessons.

Task Expectations – Influence of Competing Cultures. Task expectation has several components, differing perspectives, and it both informs and is informed by other subcultures, institutional expectations, and experience and/or false history or lessons. The task expectation is a working definition used in this paper to denote situations where what a particular individual or sub-group believes is its actual task and the conditions under which it would be expected to perform this task. The institutional requirement or expectation is explicitly expressed in the CF as the General specification for all soldiers, and the occupational specification for specific MOS'. The individual or sub-culture expectation of their task can become distorted or drawn away from the institutional requirement. In cases where the soldiers PCF is purely military with no civilian equivalent the problem of alignment is much less an issue. In situations where the PCF has a strong link or is highly comparable to a civilian trade guild or civilian employment then this can draw their expectations in a different direction. When combined with individual perception through repeated example it reinforces false lessons and can lead the member to believe that institutional requirements are out of alignment with perceived reality. This provides an added complication in the training and education of adults. In order to realign task expectations one requires a sharp sudden shock that clearly demonstrates the value of the institution's demands, followed by consistent pressure that

permits the gradual realignment of the culture that created the problem. Task expectations should be viewed as both a process and a product. The process is the conditions under which the various pressures and expectations act upon each other. The product is the explicit or unstated expectations of an individual or group as to what their job should be and under which conditions they should be expected to perform it. When the task expectation is out of align it will create confusion as to real mission, role, and a difference between the risk an institution such as the CF requires one to accept and what one believes is reasonable to accept.

Threat. This subject would seem to be very obvious; one would assume that it is anything either inherent in the physical environment or presented as hostile act or intent from a belligerent or enemy. One is usually briefed extensively on the enemy and environmental threats before one embarks upon an operation. It will consist of adversaries, their intent and expected capability to carry out their intent, the environment, and at times element of the local population. The perception of threat can be modified by the same pressures the distort task expectation. The PCF whose orientation is not purely military may succumb to the belief that threat as applied to the infantry would not apply in the same manner to them. They may believe that their task should not require them to be exposed to threat. One can infer this type of thought process based upon the doctrinal expectations prior to war, the subsequent scramble to develop new doctrine, and the inevitable culture readjustment to the necessity of fighting skills. In order to place these concepts into context we will discover the aspects of various cultures and sub-cultures that create this variance in perception. Clearly at influence is the institution, the regiments or branches within it, and the trade cultures.

APPENDIX 2 – OPERATIONAL RESEARCH

General

The purpose of this appendix is to expand upon OR scenarios and results.

Scenario 1 and ABM

The four experiments each provide different insights into convoy operations. The Hakola post grad thesis "An Exploratory Analysis of Convoy Protection Using Agent Based Simulation" was undertaken to explore aspects not only related to convoy operations but also to explore as part of his thesis the utility of ABM to this type of research.

Test 1 Scenario. The blue team consisted of three security vehicles, 1 UAV, and 12 logistics vehicles. The enemy had 1 x IED, 2 x RPG, and 5 x Infantry. The enemy uses guerilla tactics of indirect approach, prolongation, harassment and terrorism. They typically move and fight at night, although we have seen many examples that they will move ad fight at any time, they tend to fight offensive and avoid strongholds; they attack at close range and use speed, shock, and intelligence to get in and out quickly. They use unprecedented knowledge of the terrain and use of real time and detailed intelligence drawn from unconventional sources. According to the 181st Tn Bn they notice that the enemy will blend into the population, they will attack soft targets;[117] they use a combination of IEDs, SA, and RPGs. They will avoid decisive and sustained conflict, tend to attack the rear of the convoy, they practice hit and run, make extensive use of scouts, ambushes are command activate from the scouts, their TTP and their IEDs evolve.

[117] Hakola, Captain Matthew B. "An Exploratory Analysis of Convoy Protection Using Agent Based Simulation." Master's Thesis, (Monterey, California: Naval Postgraduate School, 2004), 10.

They will disrupt a convoy using vehicles, local population, or natural hindering points. The SA and RPG tend to be used on the lead and rear vehicles. The Bn uses the following practices: Gun trucks with aggressive posture provide a psychological benefit, gun trucks aggressively suppress in attacks, and every member of the convoy is responsible for security. The IA in most cases is to use smoke, suppressive fire, leave as soon as possible, essentially to break contact. We can see that the breaking of contact aggressively requires the coordinated use of fire and movement of heavy vehicles under contact. This is challenging enough. Further threat and the greatest threat to convoy operations is the ambush. In cases where they can they will escape from the ambush using the same basic principles. In the case of a blacked ambush those who are tapped in the kill zone must dismount and seek advantageous ground from which they can begin to put suppressive fire on the enemy. Those not so engaged, must take up positions around the KZ and engage the enemy. In even the simplest of exercises this is a very demanding and challenging task that requires soldiers that are highly trained in the basics. The model uses an unblocked ambush.

Limitations. The model assumes the quality of the troops and their training, the variables and personal factors are not directly related to the quality of their training. The model assumes the priority of convoy survivability as the most important factor. While this is clearly important, one needs to consider other factors for a more complete picture of success. For example, aggressive well prepared convoys present a psychological factor if they soon become seen to be hard targets. Therefore, the effect of getting out of the ambush in an aggressive and effective manner that causes damage to the enemy is important as well. To look only at casualties as the only MOE means that we are in

danger of drawing the wrong conclusions and developing a siege or fearful mentality with respect to preparing our convoys. Our soldiers need to believe and be confident that if they are forced to dismount they will win the fire fight, giving them freedom of movement to break contact from an enemy that has been hurt because they have dared to attack the convoy. An inordinate fear or focus on only casualties can be self defeating

Summation of Results

Test 0601

The complexity of the scenario created problems in analyzing data but the following conclusions were drawn:

a. "Larger convoys were more survivable and more lethal;

b. Any escort is better than none but it is the combination of escort and heavy arming of the logistics convoy that had the greatest impact of survivability and lethality;

c. Level 3 protection on armoured vehicles greatly increased survivability; and

d. A heavy weapons mix that included .50 cal, M-19 as well as C-6 was more lethal".

Experiment 0701 explored the efficacy and applicability of the new Canadian Convoy TTP in an ambush scenario. The training scenario remained common and a small convoy was used. The intent of the test here was focused upon mission accomplishment which in this case was to avoid a stand up fight and get the vehicles out of the ambush sight if possible and carry on with the mission. The experiment reinforced that the ideal scenario is for the convoy to get out of the ambush sight under cover of

suppressive fire in a rapid but disciplined fashion[118]. We can conclude that the convoy must know its drills, in this scenario the escort played the role of suppressive fire while BISON and recovery extracted vehicle and injured personnel. The TTP lacked fidelity, having vehicles escape en masse is unlikely to occur and it must be done in a deliberate but measured fashion. Further, the TTP caused great separation between the logistics convoy which itself could in suppressive fire, and leaves only a few behind to deal with casualties. This would not be conducive to good morale or convoy cohesion. The conclusion that it is better to get out of the ambush sight is correct, one must be careful to do so in a disciplined fashion that enhances cohesion, and permits maximum suppressive firepower against the enemy for as long as possible.

In summary we can draw the following observations from the studies with respect to skills training:

a. command and control of the logistics element will have to be self sufficient;
b. battle drills must be incorporated into convoy TTP;
c. convoys are more survivable and more lethal when larger, armoured, heavily armed, and escorted;
d. logistics platoon members need to be qualified on all crew served weapons;
e. All need to be effective at life saving skills to include combat first aid, CCP management, and medical evacuation by ground and air.

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[118] Gill, Major Andy, & Chapman, Ian, *Report AEC-R 0701 Limited Objective Experiment 0701 Convoy Force Protection,* Report Prepared for DLD 9 & Army Experimentation, (Kingston: Army Experimentation Centre, 2007), 2-7.

APPENDIX 3 – OAS TRAINING SCENARIO

ASSUMPTIONS

1. Soldiers going on deployed operation will have had limited convoy operations TTP training and no live FFR experience.

2. The course will be individual training, collective training will occur as part of the pre-deployment training.

3. Skills such as first aid, use of communications equipment, and crew served weapons training will be covered separately during annual or pre-deployment training.

4. Soldiers must learn how to operate without an escort first.

5. Soldiers are qualified to drive convoy vehicles

6. The commander will have some flexibility to train additional troops after deployment.

7. Live fire training will be incorporated into all pre-deployment training.

Risk.

1. Experience has borne out that 60 will not be enough. The transportation platoon is manned to give enough soldiers to provide a driver for each vehicle; co-drivers are drawn from across the NSE. It is typical and indeed desirable that during the conduct of a tour every soldier and leader will participate in at least one convoy operation.

2. The commander has assumed risk by training so few of his soldiers in convoy drills live fire. He will have to employ mitigation strategies in order to deal with inevitable surge. Ideally, the more skilled soldiers will be able to mentor those who are

brought in without the enhanced training. It is not unreasonable to expect risk management of this type.

THE COURSE

Day 1	Classroom - Lecture	Convoy Doctrine Equipment Battle procedure Weapons handling test
Day 2	Classroom, practice	Orders Vehicle preparation Fire Control Orders Target Indication
Day 3	Simulator	C7 PWT 1→ 3(Sim) FCO Practice TI Practice
Day 4	Classroom - practice	Navigation Communication CPX
Day 5	Lecture Demo Practice	Fire and Movement
Day 6	Demo Practice	Convoy TTP “Actions On”
Day 7	Practice	Convoy TTP “Actions On”
Day 8	Field Exercise	Convoy TTP “Actions On”
Day 9	Confirmatory Ex (Blank ammo)	Convoy TTP “Actions On”
Day 10	Range Tests (3 test plus night shoot)	Live fire
Day 11	Live Fire FFR	Confirmatory live fire
Day 12	Live Fire Retest	Retest skills

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