

THE CONTEMPORARY OPERATIONAL ENVIRONMENT AND ITS EFFECT ON
THE NORWEGIAN ARMY'S TRAINING

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

THE CONTEMPORARY OPERATIONAL ENVIRONMENT AND ITS EFFECT ON THE NORWEGIAN ARMY'S TRAINING, by Ingvar Seland, 119 pages.

The Norwegian Army is partly a conscript army and partly a volunteer force. The Army has one year to conduct basic training and combat preparations of the conscript force, which forms the basis for international operations and recruitment to the volunteer force.

The Norwegian Army has gone through significant transformation the last five years, which has been, and still is, all-embracing and affects the entire Army. In addition to the challenges presented by the transformation itself, the Norwegian Army faces challenges concerning which missions it should prepare for, ranging from the current missions in Afghanistan, to the bordering areas with Russia.

However, the Norwegian Army has not adjusted its training to reflect fully the increasing number of tasks and training requirements. There is a gap between how the force trains and how the training and combat preparation should look like to reflect the Army's future missions and tasks. One way to conduct training that is more efficient and thus contribute to mitigate some of the challenges concerning training is to increase the availability of simulator-supported training. Hence, the Army should establish a branch of the Norwegian Army Combat Maneuver Training Centre, located to North Norway.

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ACRONYMS

AAR	After Action Review
AO	Area of Operations
AOR	Area of Responsibility
BCT	Brigade Combat Team
C2	Command and Control
C3I	Command, Control, Communications and Information
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
CA	Civil Affairs
CALL	Center for Army Lessons Learned
CFE	The Treaty on Conventional Armed Forces in Europe
CHOD	Chief of Defense
COE	Contemporary Operational Environment
COIN	Counterinsurgency
CS	Combat Support
CSS	Combat Service Support
CST	Command and Staff Trainer
CTC	Combat Training Centre
EXCON	Exercise Control
EU	The European Union
EUFOR	The EU Force
HA	Humanitarian Assistance

IED	Improvised Explosive Device
IO	Information Operations
ISAF	International Security Assistance Force
ISTAR	Intelligence, Surveillance, Target Acquisition, and Reconnaissance
LPE	Light Portable EXCON
MoD	Ministry of Defense
NATO	North Atlantic Treaty Organization
NACMTC	Norwegian Army Combat Maneuver Training Centre
NCO	Non-Commissioned Officer
NDLO	The Norwegian Defense Logistics Organization
NGO	Non-Governmental Organization
NOK	Norske Kroner – Norwegian Crowns (currency)
PfP	Partnership for Peace
PKO	Peace Keeping Operations
PRT	Provisional Reconstruction Team
OE	Operational Environment
OPFOR	Opposing Force
RRF	Rapid Reaction Force
SAAB	Svenska Aeroplan Aktiebolaget (Swedish Aeroplane Ltd)
SOFA	Status of Forces Agreement
TRADOK	Hærens Transformasjons- og Doktrinekommando (The Norwegian Army Transformation and Doctrine Command)
VBIED	Vehicle Born Improvised Explosive Device

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CHAPTER 1

INTRODUCTION

Background

Indeed, armies do not prepare for the last war, they frequently prepare for the wrong one – if for no other reason than that governments will usually fund only against the anticipated primary threat as opposed to risk, and the adversary will usually play to his opponents' weakness rather than strength. (Smith 2005, x)

On which basis does a nation train its army? Are the training and combat preparations based on a threat, protection or promotion of one's own interests, or do requirements from external organizations like the North Atlantic Treaty Organization (NATO) direct most of the training? Will transformation goals or current operations form the basis for the training? Alternatively, how do domestic issues influence the training? The answer is probably a mix of all the considerations above, which also form important parts of the Contemporary Operational Environment (COE). Thus, the basis for an army's training and combat preparations will change continuously as the COE is changing continuously. However, if the army does not cope with these changes and adapt its training and combat preparations, it may become irrelevant. Hence, the purpose of this study is to discuss some of the challenges the Norwegian Army currently faces, and to show how the Norwegian Army can improve its training to better prepare for future operations in the COE.

The COE is probably the one factor that lays the foundation for training and combat preparations, upon which all other factors build. Some of the characteristics of the COE are that the COE, in contrast to the Operational Environment (OE), comprises the current and near future world as a whole; it is generic and holistic; it does not address

enemies but potential adversaries; and that the COE is constantly changing. The OE then, is the environment where a country's forces currently are conducting operations, and addresses the enemy, partners and coalitions directly (Department of the Army 2003, iv-viii). Thus, when the COE addresses the characteristics of the world, its societies, and possible threats and adversaries, the OE is geographically specific like, for instance, Afghanistan. Terminating operations, shifting focus from one area of operations to another, and establishing new operations imply new OEs with new sets of characteristics and requirements.

In addition to the COE and the actual OEs, there are also domestic factors that influence how the Norwegian Army carries out training and combat preparations, such as the location of the Army's forces throughout the country, the balance between conscript units and volunteer units in the Army, and the economy. However, probably the two most important domestic factors are the current training paradigms within the Army and the effects of the ongoing military transformation. The Norwegian Armed Forces, and thus the Norwegian Army, have gone through significant transformation the last five years. The preface to the Norwegian Defense Budget 2006-2007 stated the goal of the transformation: "The transformation aimed initially ... to adjust the Armed Forces' structure and way of operation to a realistic budget level. Thereafter, the objective was to reinforce the Armed Forces' operational capabilities by adjusting the scope of the Armed Forces' capacities within the framework of new security policy challenges" (Royal Proposition no 1 2006-2007, Para 1.2).¹ The transformation, or modernization, of the Norwegian Armed Forces will continue for many years, as recently stated by the Minister

¹ All translations of Norwegian documents, doctrines, field manuals, etc, are by Major Ingvar Seland unless otherwise stated.

of Defense, Anne Grete Strøm-Erichsen. Strøm-Erichsen also restated that the Norwegian defense policy comprises two basic elements: Norway's areas of interest in the North and Norway's international commitment (Strøm-Erichsen 2007).

In a speech at the Norwegian National Defense College, the Undersecretary of Defense, Espen Barth-Eide, reinforced the message from the Strøm-Erichsen when he stated that the importance of Norway's northern areas has increased with regard to the recent international development, and he pointed specifically at Russia and her increased economy (Barth-Eide 2007). However, Norway's current main commitment is NATO's International Security Assistance Force (ISAF) in Afghanistan. Hence, the two actual OEs for this thesis are the bordering areas with Russia and Afghanistan.

The Norwegian Chief of Defense (CHOD), General Sverre Diesen, has stated that the scope of the military transformation affects the force structure itself, the imbalance between operational and non-operational units and organizations, and the economic disequilibrium between the Norwegian Government's resolutions on force structure and funding the force (Diesen 2006). The effect of the transformation as a whole is difficult to foresee. One of the challenges is that the transformation is all-embracing and affects most key personnel and units. Indeed, there are indications that the Army's focus has shifted from producing trained units and soldiers to transformation itself.

The second part of the Norwegian Army's challenge is the composition of the force. The Norwegian Army is partly a conscript army and partly a volunteer force, where the basic building block for the Army's forces is the conscript force. All conscripts must go through a mandatory one-year training period that comprises the basic training. Implementation of new technology, new weapons, and new areas with regard to training,

e.g. cultural competence and language training, must be addressed in this very limited period available for training. After the completion of the one-year training, parts of the conscript force will normally deploy to international operations. Only after completion of the mandatory one-year training and perhaps an operational tour abroad, are the previously conscripted personnel eligible to apply for a position in the volunteer force. Thus, all basic training and preparations for deployment abroad must be completed within the one year that is available for the training of the conscript army.

The challenge is that the Norwegian Army has not adjusted its training to reflect all the tasks it has been assigned. There is a gap between how the force is trained and prepared and what the training and combat preparation should look like to reflect the Army's future missions and tasks (Stølan 2007a). Further, the most important tool for supporting the training, the Norwegian Army Combat Maneuver Training Centre (NACMTC) is not utilized as it should be in order to achieve as much effect as possible from the training (Seland 2007). To add to the challenge, the one-year training of the conscript army encompasses a constantly increasing number of topics and skills. The increasing breadth of the training will lead to two effects: the soldiers will become less skilled in some, if not all, of the areas that the training comprises, and the additional time needed for training is taken from the available time the officers and men are supposed to share with their families. A constant choice between family time and training time will add significantly to a growing feeling of tension among the Army's personnel concerning meeting family needs and Army requirements. Bottom line, the Army's main problem is that there is too much to do in too little time available.

Given that the COE is constantly changing, equipment and technology are constantly changing, training requirements increase, the Norwegian Army's basic training must take place within a year, and the fact that the Norwegian Army cannot afford to impose further strain on its officers, soldiers, and their families, training must change. The training must be as efficient as possible, and the training must be directed properly towards the OEs in which the army is expected to conduct operations, and the training must also reflect the requirements that spring from the COE. In order to achieve this goal, the Norwegian Army should reorganize the NACMTC in order to better prepare units and soldiers to conduct future operations in the Contemporary Operating Environment. Thus, the thesis is: The Norwegian Army should reorganize the NACMTC, to include the establishment of a Combat Training Centre (CTC) in northern Norway, in order to better prepare units and soldiers to conduct future operations in the COE.

Research Questions

The research question is formed as an applied research question (Turabian 2007, 9), i.e. in order to solve a particular practical problem research must be conducted to understand what factors affect the problem. The primary research question is: How can the Norwegian Army improve its training to be better prepared to conduct future operations in the Contemporary Operating Environment? In order to answer the question of how the army can improve its training, it is necessary to address the factors that influence the Norwegian Army's training and combat preparations. The first secondary research question is therefore: What factors influence the training of the Norwegian Army. The factors that will be discussed are the COE; current and possible future OEs; the effects of the military transformation and training paradigms; and the constant factors

such as location of forces, the balance between conscript and volunteer forces, and economy. The tertiary research question that follows is: which requirements spring from the discussed factors with regard to training and preparations?

Given the requirements that spring from the factors that influence training and combat preparations, the second and last secondary research question is: How should the NACMTC be organized in order to meet the requirements with regarding training and preparing for future operations? The discussion of NACMTC will cover factors as location, capacity, rotation concept, and training requirements.

Definitions

The Contemporary Operational Environment

The U.S. Army *FM 7-100 OPFOR: Opposing Force Doctrinal Framework and Strategy* defines the Contemporary Operational Environment. “In the real world, the COE is the entire set of conditions, circumstances, and influences that U.S. Armed Forces can expect to face when conducting military operations to further the national interests of the United States, its friends, and allies.” (Department of the Army 2003a, viii). Thus, the COE is generic, holistic, worldwide, and covers only potential adversaries.

The Operational Environment

The Operational Environment, in contrast to the COE, is geographic or theatre specific and implies a specific enemy versus the generic “threat.” Joint Publication (JP) 1-02 states that the OE is “A composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander” (Department of Defense 2007, 392).

Field Manuals, Joint Publications, and Official Documents

A reference in the thesis to a Field Manual (FM) is a reference to an U.S. Army Field Manual, while a reference to a Joint Publication (JP) is a reference to an U.S. Armed Forces Joint Publication. In order to distinguish Norwegian and U.S. manuals and publications from each other, the thesis will refer to Norwegian manuals and publications with their original, Norwegian, names and/or publisher. The thesis will refer to official documents, which normally do not have an author, by its name or the publisher, if necessary with an explanation in English to what the document deals with.

Full Spectrum Operations

The thesis will use U.S. Army's term full spectrum operations (Department of the Army 2008, 3-1) to cover the challenges units and soldiers meet in the COE, even if other institutions use other terms. Of the other terms, those used most often are the "three-block-war" as defined by the former Commandant of the Marine Corps, General Charles C. Krulak, encompassing humanitarian assistance (HA), peacekeeping operations (PKO) and warfighting (Krulak 1998, 1). Later, generals Frank G. Hoffman and James N. Mattis added an extra dimension to the "three-block-war" concept, as they saw how Information Operations (IO) was incorporated in every military operation, and thus calling the new concept "four-block-war" (Hoffman; Mattis 2005, 18-19). The Norwegian Armed Forces uses the term "spectrum of conflict (Forsvarsstaben 2007a, 13-23)," spanning from peace through crisis to armed conflict. The spectrum of conflict also encompasses operations abroad through the terms military contribution in peacetime, stabilization operations, combat against irregular forces and combat against regular forces. Nevertheless, all concepts encompass the same idea of a floating environment where a force will have to

conduct different types of operations simultaneously. The only thing that varies from operation to operation, or from day to day, is the mix and balance between the three types of operations. Thus, the thesis will use the term full spectrum operations.

Assumptions

The thesis builds on the assumptions that Norway will continue to base her army partly on conscription and partly on professional forces, and that the Norwegian parliament will not change the mandatory serving time for a conscript soldier, which is one year. Further, the thesis builds on the assumption that Norway will continue to contribute forces to various multinational operations, led by either NATO or the United Nations (UN). Finally, the thesis builds on the assumption that the Army's budget will remain relatively constant, thus, the thesis will not discuss solutions that imply significant budget changes or heavy economic spending.

Limitations

The thesis has two limitations. First, the study will only reflect information that is available through unclassified sources. As such, there is a risk that the level of details can be insufficient to deduce comprehensive conclusions; however, applying classified sources will change neither the problem nor the possible solutions. Second, the study will not recommend solutions where additional training time will be at the expense of the personnel's spare time; as such solutions do not solve the main challenge, which is that the Army has too much to do in too little time available. It is not possible to increase the time available for training without making the entire Army a volunteer force. The only way to mitigate the current challenges is to change the way the Army is training.

Scope and Delimitation

One of the challenges with regard to the relevancy of this thesis is to keep up with changes as they develop in Norway. Therefore, the basis of this thesis is the status of the Norwegian Army as of June 2007. However, the thesis will take into consideration changes, publications, and studies made public later than June 2007 if they provide significant information. The thesis will not take into consideration any changes, publications or studies made public after February 2008. Additionally, the thesis will focus on factors that affect the army directly, and will not discuss the development of Norwegian security policy or the development of the relationship between Norway and her allies or her neighboring countries. Eventually, the second half of the study will only focus at the Norwegian Army, not the Norwegian Air Force, Navy or Home Guard.

Summary and Conclusions

The Army's main challenge is that it has too much to do with too little time available. Nevertheless, as stated in the beginning of this chapter, if the Army cannot adjust its training and combat preparations in order to cope with the changing COE, which comprise the most significant foundations for training and combat preparations, the Army may become irrelevant. Additional factors that contribute to shaping the basis for the Army's training and combat preparations are actual OEs, the location of the forces, the balance between the conscript force and the volunteer force, economy, the current training paradigms, and the effects of the ongoing transformation.

Thus, for the Army to stay relevant in the future, the Army must train in a way that answers the requirements that spring from the COE and the OEs, concurrently as the Army seeks to mitigate the effects of the other factors that affect the training and combat

preparations in a negative way. Since the main challenge is to change the training to be more efficient and effective, the thesis is that the Norwegian Army should reorganize the NACMTC, to include the establishment of a Combat Training Centre (CTC) in northern Norway, in order to better prepare units and soldiers to conduct future operations in the COE. Hence, the significance of this study is clear, as the study suggest one way to make a difference concerning the current challenges the Norwegian Army faces.

The Road Ahead

The thesis comprises five chapters in addition to the introduction chapter. Chapter number two is a literature review and gives an overview over existing literature and other important sources that address the challenges the Norwegian Army faces. However, more important than looking at existing sources, the chapter uncovers some areas that are not covered thoroughly in existing or known sources, which again indicates where the research has had to concentrate on primary sources. The search for primary sources has primarily aimed at Norwegian sources such as interviews, discussions, and personal communication. Chapter number three covers the methodology on which the author has based the research and analysis, while chapter number four comprises the analysis of the COE and the actual OEs. Chapter number five comprises the analysis of the factors other than the COE and the OEs that affect the Norwegian Army's training and combat preparations, and eventually, shows how a reorganization of NACMTC can mitigate some of those challenges. Chapter number six gives the conclusions and recommendations.

CHAPTER 2

LITERATURE REVIEW

The purpose of the literature review is to provide an overview of existing literature and additional sources that can contribute to meeting the purpose of this thesis. The thesis itself consists of three steps, of which the first one is to describe how the COE and OEs affect the Norwegian Army's training and combat preparations and to determine the most important training requirements that spring from the COE and the OEs. The second step is to describe other factors than the COE and the OEs and how they affect the Norwegian Army's training and combat preparations, as these factors contribute significantly to the main challenge, which is that the Army's training must change as the Army currently has too much to do in too little time available. Eventually, the third step is to show how the Army can meet the training requirements that spring from the COE and the OEs, and at the same time mitigate some of the challenges that stem from the other factors that affect training and combat preparations. Thus, this chapter will focus on sources that contribute to describe the factors that affect the training and combat preparations of the Norwegian Army.

The research has encompassed a wide range of sources to obtain the necessary information in order to understand the current challenges for the Norwegian Army. It is not difficult to find information that either describes or reflects upon the COE and the OEs. However, the amount of information available is disadvantageous, which leads to challenges concerning how to distinguish sources with regard to what are personal opinions versus what comprise factual analysis. Thus, much of the information that forms

the basis for this thesis is published information, gathered through books, publications, newspaper articles, and articles in print and on-line.

When it comes to describing the factors that affect the Norwegian Army's training and combat preparation, the amount of sources become somewhat more limited. Sources of particular interest have been the Norwegian Defense's official Internet Site, the Norwegian Government's official Internet Site, and some recent publications and studies from the Norwegian Defense Staff and the Norwegian Army. However, these sources provide the Army's and the Ministry of Defense's (MoD) official view on what the Army's future challenges are, which implies a challenge as they seem to smooth over what the Army's main challenge is, which is that the Army has to change the way it conducts training and combat preparations. Therefore, the research also comprises various forms of personal communication with a number of Norwegian officers, as well as some foreign officers, in order to understand the problem better.² Deliberately, these officers are in most cases not high-ranking, and not in command positions, in order to avoid insignificant, but politically correct, answers.

The COE versus the OE

The terms COE and OE are not fully implemented in the Norwegian military vocabulary and may be difficult to distinguish from each other. An example of the difficulty appears in the recently published Norwegian doctrine for joint operations,³ where the doctrine in general terms defines the OE (Forsvarsstaben 2007a, 39-47).

² The personal communication encompasses interviews, discussions, briefings, etc. The documentation of the communication comprise notes, emails, and digital recordings, all of which on file with the author. See the reference list for a comprehensive overview of the primary sources and documentation.

³ In Norwegian: Forsvaret Fellesoperative Doktrine

However, what the Norwegian doctrine defines as characteristics of the OE are in reality characteristics of the COE. Thus, this study will discuss the terms COE and OE in order to provide better understanding of the COE and the OEs and how they add significantly to the current training requirements for the Norwegian Army.

Numerous books and articles describe how the world has developed into what currently comprise the COE. However, some works provide more insight than others, the first of which is General (Ret.) Sir Rupert Smith's *Utility of Force: The Art of War in the Modern World*, which is perhaps the one source that gives the best overview of the changes in the way modern war is waged. General Smith has authority on the matter from his extensive operational experience, which comprises command of the British armored division in the 1991 Gulf war, command of the U.N. forces in Bosnia, and command of the British forces in Northern Ireland. Finally, he served as Deputy Supreme Allied Commander in NATO from 1998 to 2001 under Generals Wesley Clark and Joe Ralston (NATO 2001, 24-25). The *Utility of Force* sums up his experience and his thoughts of how war has changed. The most important of Smith's statements is that there has been a paradigm shift from "that of interstate industrial war" to "war amongst people" (Smith 2005, 3), meaning that, according to Smith, there is little risk for a future industrial war between states. Probably, the future will bring both conflict and confrontation, but in the setting of war between and in between people, not states; thus organization, training, and employment of force must change (Smith 2005, 371-373).

The Harvard professor Samuel P. Huntington was maybe one of the first scholars to address the change and development of the modern world that sprang from the conclusion of the Cold War. Huntington's *The Clash of Civilizations: The Remaking of*

the World Order, summarizes his theories in that the source of future conflict is cultural differences, and “that the most dangerous cultural conflicts are those along the fault lines of civilizations (Huntington 2002, 28).” Currently, Huntington argues, this dividing line between civilizations goes between the civilizations of western Christianity on the one side and Muslim and Orthodox civilizations on the other side. In summing up what should be in the interest of the western world, Huntington says, it is “most important to recognize that western intervention in the affairs of other civilizations is probably the single most dangerous source of instability and potential global conflict in a multi-civilization world (Huntington 2002, 312).”

However, Huntington’s theory has some flaws. In general, Huntington says that the world has changed after the end of the Cold War (Huntington 2002, 19), but he does not say how it has changed. Huntington sticks to old paradigms and biases toward the Muslim world and China, and concludes that a future interstate war is possible, if not probable (Huntington 2002, 312-316). Huntington only superficially discusses how the world economy plays a big role and his presumed biases towards Muslims seem to lead him into overgeneralization. As an example, Huntington addresses Bosnia as a state with ties to the Muslim world in general, and Iran in particular, without recognizing that Bosnia is much more Europe-friendly than Iran-friendly, because Bosnia’s future big money is available through the EU, not Iran. Additionally, Huntington does not see the effects of economic cooperation and Globalization, with one exception, oil (Huntington 2002, 312-316).

In his article *The coming anarchy*, first published in *The Atlantic Monthly* in 1994, Robert D. Kaplan points out what he thinks is an important aspect of the COE: that

the main contributors to the world's current unrest and upheaval are scarcity of resources, crime, overpopulation, tribalism, and disease among the have not's and hopeless people in the world. Thus, the main strategic danger today is the threat of criminal anarchy, which may spread, as regional instability will continue to increase. According to Kaplan, the way to stabilize the challenges is to provide economic stability throughout the world and to implement the rule of law through nation building and government stabilization (Kaplan 1994).

Thomas L. Friedman, a Foreign Affairs columnist with the New York Times, published in 1999 *The Lexus and the Olive Tree: Understanding Globalization*, where he argues that what is driving the world at an increasing speed is Globalization, of which the key factor is the interlocked and mutually dependent economies of the world. Friedman argues that many of the contemporary problems and conflicts develop in states not able to cope with Globalization, and concludes that Globalization both will prevail and will be necessary to develop further standards of living throughout the world. However, Friedman says, the economy of those states that do not cope with Globalization will eventually crash (Friedman 1999, 354-366).

Thus, Friedman supports Huntington's theories that the world is changing, and that reasons for conflict change as well, however, he disagrees significantly with Huntington concerning possible reasons for future conflict. Friedman's critique of Huntington, as well as other writers, is that the other authors try to explain the changing world and to connect the change to "The One Big Thing (Friedman 1999, xviii)" without being willing to consider the evolving world economy, and for only reporting from the most challenging places in the world (Friedman 1999, xvii). Thus, Friedman's theory on

Globalization and economy as the driving factor for development in the world seems to concur with Sir Rupert Smith's theory that a future interstate industrial war is not likely, however, because of another reason, namely that an interstate industrial war will ruin the economy of the states involved. Nevertheless, according to Friedman, one challenge is that Globalization makes the world smaller, and people throughout the world learn how other people live, which may be a source of unrest, as they will want to achieve the same standard of living (Friedman 2000).

Interestingly, Thomas P.M. Barnett, professor at the Naval War College in Newport, Rhode Island, seems to build on Friedman's theories on Globalization in his article *The Pentagon's New Map* (Barnett 2003, 123-131). Barnett uses the theories to explain that the primary effect of Globalization means a better standard of living. However, the countries that make it in the globalized world are today's functioning democracies with stable economies. According to Barnett, the contemporary and future key security policy issue is thus to shrink the gap between the states that are able to cope with Globalization, and those states that are not, as "disconnectedness defines danger (Barnett 2003, 123)."

However, the challenges western forces face in the COE are not new. What emerges as perhaps one of the most significant characteristics of the COE is the significance of Carl von Clausewitz's "paradoxical trinity (Clausewitz 1989, 89)." According to von Clausewitz, the relationship between the people, the military, and government is so vital, that if a strategist or planner neglects one of these three factors the strategy or plan is doomed to fail (Clausewitz 1989, 89), a relationship western forces currently experience as valid in Iraq and Afghanistan. Interestingly, Chairman Mao

Zedong offers the same insight in his book *On Guerrilla Warfare*, when he explains guerrilla warfare (Mao 2000, 41-46). Thus, the “paradoxical Trinity” is still valid, and applies to enemies, adversaries, one’s own country, and coalitions as well as the allied countries providing forces to the coalitions.

However, given the fact that an inherent part of the COE is change (Department of the Army 2003, iv), the question is so what? What do the changes mean to current and future military operations, and how is it possible to analyze the changes? Is it possible to find a way to analyze which requirements the COE will impose on the training of the Norwegian Army? In the newly released *FM 3-0 Operations*, the U.S. Army describes operations as full-spectrum operations, a term that covers the balance between offensive operations, defensive operations, and stability operations, respectively. The *FM 3-0* addresses one method to describe operational environments the Norwegian Army can further utilize, as there does not seem to be a similar tool in Norway or within the Norwegian Armed Forces. The U.S. Army method comprises an analysis of the factors Political, Military, Economic, Social, Infrastructure, Information, Physical Environment and Time (PMESII-PT) (Department of the Army 2008, 1-5 – 1-9).

When it comes to the OE, the difference between the COE and an OE is primarily that the COE is generic, holistic, worldwide, and covers only potential adversaries, while the OE is geographic or theatre specific and implies a specific enemy versus a generic “threat.” Currently, the Norwegian Army has one specific OE, which is northwestern Afghanistan. Not to disregard that the Norwegian Army has deployed personnel to other theatres of conflict; however, these contributions are insignificant compared to the commitment to Afghanistan, and will not be covered in this thesis. The second and

obvious OE, in which Norway should be prepared to conduct operations, is at the border between Norway and Russia. The Minister of Defense has recently restated the importance of this area, as there are indications that Russia has regained economic and political power during recent years (Strøm-Erichsen 2007).

Russia

When it comes to the bordering areas between Norway and Russia, this is the one mission the Norwegian Armed Forces have been training and preparing for since the start of the Cold War. The basic training requirements that spring from this OE are therefore well known throughout the Army and may be summed up as capability to rapid reaction to crises, and high-intensity warfare.

A number of recent articles and lectures point at the fact that Russia has gained larger economic freedom of action, primarily from the increased price of crude oil, which will benefit among others the Russian Armed Forces. As such, the Russian forces will increase their training activities, which, naturally, as pointed out by the Norwegian CHOD, General Sverre Diesen (Diesen 2007), will take place in Russian territory and international waters and airspace adjacent to Norway. However, even if there are some promising signs for the future, as the Russian ratification of the Partnership for Peace (PfP) Status of Force Agreement (SOFA) with NATO (NATO 2007b), Russia continues to be unpredictable. Recently, Russia has suspended its CFE-obligations due to NATO's support of the future missile defense shield over Europe (NATO 2007a), and a recent Russian Naval exercise in between Norwegian oil rigs (Helgesen 2007) are only two examples of the latter.

Afghanistan

The current OE for the Norwegian Army is Afghanistan. There are many sources available; however, this literature review will only address a few of them in order to deduce what additional training requirements that spring from the Afghan OE. To start with, the assistant managing editor of The Washington Post, Bob Woodward, described some of the challenges in the country in his *Bush at War*, which covers the first 100 days after 9/11. Sean Naylor, an Army Times senior writer who was embedded with the U.S. forces in Afghanistan during operation Anaconda, gives in *Not a Good Day to Die* some insight to the challenges in the country as well. Additionally, newspaper articles and journal articles give additional information on Afghanistan, its population, and its challenges, however, they all concur largely when it comes to which training requirements that apply for those forces that are supposed to operate in the country. To put it short, what is required to conduct operations in Afghanistan is the ability to conduct full-spectrum operations. In addition, what turns out to be decisive factors are knowledge of the country and terrain in general and cultural competence in particular.

Factors that influence the Norwegian Army's Training

The most obvious factors that influence the training of the Norwegian Army comprise the COE, the current and possible future OEs, the location of the forces, the balance between the conscription and the professional forces respectively, economy, the training paradigms that prevail in the Army, and the current transformation of the Armed Forces. Some of these factors have been described and discussed extensively over the past years, while other factors are not described by literature or written sources at all or at

least in a very limited way. Therefore, the thesis relies on information collected through personal communication and on the researcher's earlier study as well.

The Constant Factors' Effect on Training

The three main constant factors that affect the way the Norwegian Army currently trains are the location of the army's different subunits, headquarters, and staffs; the balance between conscript and volunteer forces; and economy. Information on these factors are available through official sources in general and through the Armed Forces official information services such as the Armed Forces monthly, *Forsvarets Forum*, and the Armed Forces official internet site, Forsvarsnett.⁴ The factors will be addressed in their order of importance with regard to deciding which solutions for training and combat preparations are feasible and acceptable. In particular, the location of the forces is of importance, as the Norwegian Armed Forces will be present in both south Norway and north Norway in the foreseeable future.

However, the recently published Defense Study comprises the most up to date discussion of these factors. The Defense Study 2007 is a study published by the Norwegian CHOD, General Sverre Diesen, which covers both near and long-term future development of the Armed Forces.⁵ The CHOD conducts and publishes a defense study when there is a need to address development trends, in particular to the government and the parliament. In the latest 20 some years, the CHOD has published a defense study every fourth year. Parallel with the CHODs analysis and compilation of the defense study, a committee established by the government has worked with the same issues, i.e.,

⁴ The Norwegian Armed Forces official internet site offers information in English, and is available at <http://www.mil.no>

⁵ In Norwegian: *Forsvarssjefens Forsvarsstudie 2007*

the development of the Armed Forces in both near and long-term future. The committee, named the Defense Policy Committee, released its own report in the series Norwegian Official Reports, issue no 2007:15.⁶ Of particular interest is that both reports seem to concur when it comes to describing the current challenges of the Armed Forces and the road ahead to mitigate those challenges, which primarily is to increase the size of the Armed Forces. The increase is likely to happen in the Army, with regard to both a significantly increased budget, and to the reorganization of one of the maneuver battalions in north Norway from a conscript battalion to a volunteer battalion, and thus give the army an enhanced capability for rapid response to a crisis or threat (Forsvarsstaben 2007b; Bjerke et.al. 2007). However, none of these suggested changes will take place before the parliament makes a decision on the reports, which is likely to happen late spring 2008, and which is likely to be somewhat adjusted after the political considerations of the two reports.

The Effects of Training Paradigms

The need to impose changes in the way the Norwegian Army trains and prepares for combat became clear some years ago. In 2005, the General Inspector of the Norwegian Army⁷ published the first of two reports called *Training for Operations part I*, in which he addressed the need for change (Hærstaben 2005). The Army Staff published the second report, *Training for Operations part II*, in 2006 (Hærstaben 2006), and the follow-up to both reports late summer 2007, became *The Army's Training*

⁶ In Norwegian: *Norges Offentlige Utredninger 2007:15 – Et Styrket Forsvar*

⁷ The General Inspector will in U.S. terms be the Chief of Staff of the Army

*Doctrine*⁸ (Hærstaben 2007). The decision to launch Project Basic, which was the name of the group working on all three products, supports the idea that the army suffers from training paradigms that are rooted in the Cold War (Hærstaben 2005, 4-6). However, there are not many sources available that clearly state that the army suffers from outdated training paradigms with regard to how it conducts training and combat preparations today, but some information, or rather indications, are available through different articles on the Norwegian Armed Forces official internet site.⁹

Nevertheless, the training schedules for NACMTC, as well as First Impression Reports (FIR) and After Action Reviews (AAR) at NACMTC, which are largely available as unclassified sources, indicate that it is possible to draw some conclusions with regard to training. The author and other key officers at NACMTC analyzed many of these sources during the winter 2006/2007, from which the results are presented in the *Study of Possibilities: Combat Training Centre – North*¹⁰ (Seland 2007). However, neither the study nor the sources are comprehensive, and additional research has been necessary, in particular a search for primary sources through personal communication. Targets for this research have been personnel with special competence and insight in the challenges the army faces with regard to training. The results from these discussions fully support the idea that the army suffers from significantly outdated training paradigms, and that the army has to change the way it conducts training and combat preparations (Stølan 2007a, 2007b; Fossberg 2007; Daltveit 2007; Dalen 2007a; Thorsvik 2007; Hagen 2007; Haug 2008).

⁸ In Norwegian: *Hærens Utdannings- og Treningsreglement*

⁹ Forsvarsnett: <http://www.mil.no>

¹⁰ In Norwegian: *Mulighetsstudie – Kamptreningssenter Nord*. The short form CTC North Study will be used throughout the thesis.

The Effects of Military Transformation

The next factor that influences the Norwegian Army's training is the current military transformation. As with training paradigms, there are not many sources available; but again the Norwegian Armed Forces official internet site provides some information. However, again as with the factor Training Paradigms, the sources covering transformation are not comprehensive, and the researcher has had to conduct additional research, primarily aimed at primary sources. Nevertheless, all sources the researcher has approached concur in the perception that many of the army's staffs and key officers are so bogged down in transformation issues that they do not have much capacity to develop and support training (Stølan 2007a, 2007b; Fossberg 2007; Daltveit 2007; Dalen 2007a; Thorsvik 2007; Hagen 2007).

Future Organization of the NACMTC

On the one hand, many sources cover the current organization of NACMTC; most of these are available through the Norwegian Armed Forces' archives. On the other hand, there are not many sources covering a possible reorganization of NACMTC. Most of these, however, are mostly insignificant proposals for adjustment in staffing and materiel available for the unit. The only current work that proposes a significant reorganization of the NACMTC is the study conducted at the NACMTC in the early spring of 2007, the CTC North Study, which focuses on how to achieve more effect from training through establishing a branch of NACMTC, i.e., a second CTC located to northern Norway (Seland 2007).

Summary and Conclusion

General Rupert Smith claims that there has been a paradigm shift from the interstate industrial war to war amongst people, where the development of the political and military fields are closely connected, and that organization and training of forces must change correspondingly for the forces not to lose utility (Smith 2005, xiii, 25). However, little progress has taken place in Norway regarding how to change the way the Army conducts training and combat preparations. Nevertheless, the two studies *Training for Operations part I* and *Training for Operations part II* (Hærstaben 2005; 2006), the new training doctrine for the Army (Hærstaben 2007), and the CTC North study conducted by the NACMTC (Seland 2007) all share one common idea. They recommend a change with regard to the Norwegian Army's training and combat preparations.

One way to achieve progress in the quest for efficiency, according to the CTC North Study, is to establish a branch of NACMTC, a second CTC, located to northern Norway. In order to analyze the problem further, the following chapters will look into the factors that influence the training of the Norwegian Army: the COE, the current and possible future OEs, the location of the forces, the balance between the conscript and the professional forces, economy, the current military transformation, and the training paradigms that prevail in the Army.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

This thesis builds on a qualitative research design, which is one of the two primary research designs in social sciences. The qualitative design offers flexibility with regard to problem statement and selection of units and sources. In addition, the researcher can work on the analysis in parallel with the information collection. The primary advantage with the qualitative design compared to the quantitative design is thus the flexibility, which offers the possibility to explore necessary detail and thus gives richness in nuances and high internal validity, which means that there is high probability that the result from the research will be valid for the factual unit (Hjelseth 2003, 34-37).

The quantitative design, in contrast, focuses on large selections, and a quantification of the collected information. The quantitative design works great for opinion polls to discover trends in the society, it offers possibilities to generalize the result of the research, i.e., the design offers high external validity. However, the main disadvantages of the quantitative design are that it is naturally superficial, and that the analysis must wait until all information has been collected. Additionally, there is a challenge concerning people who choose not to respond, and there may be a challenge with regard to open polls, like those following the news on TV, where only those affected directly by the questions and have strong opinions choose to answer (Hjelseth 2003, 37-38). However, both the qualitative and the quantitative design can be suitable when it comes to investigation of relationships between cause and consequence, the first through

explanations of complex problems, the latter through for instance experiments where the results can be quantified (Hjelseth 2003, 23-25).

This thesis is an exploratory study where the purpose is to describe the factors that affect the Norwegian Army's training, and based on that description of the factors, suggest a way the Army can mitigate the challenges that apply to its future training and combat preparations. To ensure that the suggested solution will contribute to an improvement, the primary focus for the research has been to describe the factors that affect the Army's training and combat preparations. Without a proper understanding of the problem, it would be difficult to suggest a credible solution.

This chapter describes the methodology used throughout the thesis. The chapter comprises four parts, of which the first part describes how the necessary information has been obtained. The following parts describe which criteria that have been developed to evaluate the proposed solution, and how the thesis has been checked for validity and relevance. The last part concludes the methodology chapter.

Obtaining Necessary Information

The addressed challenges for the Norwegian Army are neither new nor unknown for at least some of the units in the Army. The problem statement itself and the approach to the solution are both taken from, and elaborate on, the CTC North Study. However, in order to ensure a balance of sources and to validate the information collected previously, the author has gathered additional information, both from primary and secondary sources. The primary sources are primarily first-hand accounts of interest for the thesis, i.e., interviews, discussions, speeches, lectures, and forms of journal and newspaper articles, both in print and online. Targets for personal communications and discussions have been

personnel within the Norwegian Army, but from other countries as well, who could contribute to the analysis and the solution.

Deliberately, the author has approached these officers based on their experience and competence, not their position within the army, as there is a risk that personnel in key positions may be too careful about expressing their view on a need for future changes. The discussions with these officers have taken place both during the work on the CTC North Study, and during the work on the thesis itself. Typically, the officers approached for discussions hold central positions in the army when it comes to training, such as company commanders within both conscript and professional units, the commander and the assistant S-3 at NACMTC, the commander of the CTC, staff officers in the Army Forces Command, and staff officers and commanders at battalion level. Common for all officers is that they have conducted at least one operational tour abroad. In addition to the Norwegian officers, the researcher has been in contact with some officers from the U.S. Army. Common for these officers is that they possess key competence with regard to training, such as having been a training officer at the National Training Center at Fort Irwin, or involved in training of Military Transition Teams (MTT) with 1st Infantry Division, Fort Riley, Kansas.

Some of the interviews and communication have been recorded digitally, however, much of the information that forms the basis for the CTC North Study have been recorded as entries in notebooks or as inputs via email. Some sources, when commenting on a particular issue that may offend some Army leaders, have asked not to be identified in either the CTC North Study or the thesis. The researcher has complied with such wishes in a few cases, even if the result will be unsupported statements, which

will thus provide less traceability and thus possibility for re-evaluation by other researchers. The challenge that arises from using anonymous sources is primarily credibility; however, some statements may be too important to omit.

Criteria Development and Analysis

The research contributed primarily to describing the factors that affect the Norwegian Army's training. The research ended when the factors were described well enough to allow the researcher to draw conclusions about the existing gaps between current training and desired future training. In order to conduct the analysis in a logical way, the author answered the research questions in a specific order, ending with the primary research question, which, obviously, comprised the recommended solution.

Hence, the author approached the research questions in the following order:

1. What is the COE's effect on training?
2. What are the current and possible future OEs effects on training?
3. How do the constant factors (location of the units, the balance between conscript and volunteer forces, and economy) affect training?
4. What are the effects of training paradigms?
5. What are the effects of the military transformation on training?
6. What training requirements spring from the COE and the OEs?
7. How can the Norwegian Army improve its training to be better prepared to conduct future operations in the COE?

Thus, from the description of the factors that affect the Norwegian Army's training and combat preparations, the author identified or deduced which requirements apply for future training. Indeed, some of the factors are complex, while other factors are easier to describe. Of particular difficulty are the COE and the possible future OEs. To

analyze the COE and the OEs in detail will be too extensive for this thesis; however, the research and the analysis will describe the most important trends and implications by addressing the factors PMESII-PT after the model from the U.S. Army's reviewed and recently published *FM 3-0*.

From the description of the factors, the discussion of how they affect the Army's training and through the deduction of the requirements that a future oriented training should satisfy; the thesis will turn to discuss possible ways to organize the NACMTC in order to meet the requirements. The discussion will include location, capacity, and rotation concept, and will answer the question of what the Norwegian Army can do in order to improve its training and combat preparations.

Validity and Credibility

As the thesis proves to be internally valid for the Norwegian Army, will the thesis provide external validity? Meaning, is it possible to generalize the conclusions of this thesis to be valid for other countries' armies? The thesis is designed to answer a set of factors and to deduce a set of requirements that are specific for the Norwegian Army. Thus, the results from the thesis should not be used to analyze and adjust how other nation's armies should train in the future without proper analysis. On the other hand, the thesis may suggest one way to approach the problem of how to adapt training, a way that any army, force, or unit can utilize as appropriate.

Summary and Conclusion

This thesis is an exploratory study where the purpose is to describe the factors that affect the Norwegian Army's training, and from the description of the factors determine a

set of requirements that apply for how the Army ideally should carry out its training in the future. The research has approached a wide range of sources, spanning from published works both in print and on-line, unpublished works such as the CTC North Study, and primary sources such as personal communication. As stated earlier, the final goal for the thesis is to show how a reorganization of the NACMTC can allow the Norwegian Army to improve significantly its preparations in accordance with the requirements determined through the analysis. Thus, based on the research, the analysis will comprise both determining which requirements that should apply to the future training of the Norwegian Army and how the NACMTC should be organized in the future to satisfy these requirements.

The amount of information collected as a basis for the thesis is extensive, and the factors that influence the training and combat preparations of the Norwegian Army are complex. Thus, the researcher has conducted the analysis of the collected information in two steps, covered in one chapter each. The following chapter provides the analysis of the COE and the two relevant OEs, while chapter five offers the analysis of the primarily domestic factors that influence the Norwegian Army's training and combat preparations, to include suggesting a future reorganization of NACMTC.

CHAPTER 4

THE COE VERSUS OEs

Success or failure in operations is largely dependent on how the Army and the Home Guard plan and conduct training... There are two basic factors that influence training: it should concur with demands and requirements for contemporary operations; and it must be preparations for future operations (Forsvarsstaben 2004, 166).

The Norwegian Army's newly approved training doctrine states that the Norwegian Army should be capable of conducting full spectrum operations, which, according to the doctrine, embrace four main types of operations; combat operations, stability operations, humanitarian operations, and information operations, respectively (Hærstaben 2007, main body, 4). The question is: how should the Norwegian Army train and prepare for combat in order to be able to conduct full spectrum operations? The answer is not easy, and may never be answered completely; however, the following chapter will provide some insight to the challenges presented by the COE and OEs concerning future training and combat preparations of the Norwegian Army. This chapter will form part of the basis for why the Norwegian Army should establish a branch of NACMTC in northern Norway in order to promote a change in the way the Norwegian Army conducts its training.

This chapter discusses the COE and the one current OE, i.e., Afghanistan, and one possible future OE, i.e., the northern areas adjacent to Russia, and describes the factors that affect the Norwegian Army's training. The chapter describes how the continuously changing COE and OEs imply changing requirements concerning how the Norwegian Army ideally should carry out its training in the future. Certainly, the thesis will also present some training requirements that a reorganization of the NACMTC will not solve.

However, the thesis will present these requirements as issues for further consideration in future studies.

The Effects of the Contemporary Operational Environment (COE)

The future of the western way of war, and so of the western way of life and the advantageous economic system that sustains it, ultimately depends on three things: a sustained ability to manage international crises and prevent them from turning into armed conflicts, the outcome of which is always unpredictable; the continued willingness to pay (in both human and material terms) for defense against perils that are not immediately apparent; and the maintenance of each state's political control over its armed force... (Parker 2005, 428).

One of the challenges of the COE is that there is no simple threat picture for the western world. Should a country base its military and the training of the military on traditional threat pictures against national sovereignty? Alternatively, should the direction of a country's forces focus on peace enforcement and peacekeeping? There are no easy answers, as the decision will imply consequences for the country and her forces in the long term. However, a country must probably prepare for both options, as a country cannot ignore threats to national sovereignty, at the same time, a country will probably feel an obligation to contribute to shaping a safer world in conjunction with other countries and/or organizations. In an analysis of serious conflicts, the Norwegian Institute of International Affairs¹¹ points on the fact that between 1990 and 2004 only four of 57 open conflicts were fought between states. The rest, i.e., 53, were civil wars. The challenge with civil war-like conflicts is that they tend to spread, either to neighboring countries, to other countries in the form of terrorist attacks, or to the international society in the form of humanitarian interventions (Windheim 2006, 2). However, even if civil war-like conflicts can encompass the entire range from small-scale confrontations to

¹¹ Norsk Utenrikspolitisk Institutt (NUPI)

large-scale combat operations, they will be less extensive than an all-out interstate industrial war, and often the UN or NATO will seek to influence the fighting parties in order to re-establish peace and order.

Thus, the possibility of future civil war-like conflicts is obvious, and is clearly a significant part of the COE. Then, should the Norwegian Army focus its training on peacekeeping, peace enforcement, and humanitarian interventions? Some will say yes, as most of the conflicts since the Korean War in which Norway has been involved have been civil war-like conflicts. Alternatively, some will argue that the wars in Iraq and Afghanistan, at least initially, were wars between states by traditional definition, which should justify a traditional orientation of a country's forces and their training. However, the wars and protracted conflicts in Iraq and Afghanistan may have started as wars between states, though it is possible to question if the Taliban led al-Qaida sanctuary, Afghanistan, was a state by traditional definition. Currently, however, the conflicts bear the characteristics of a civil war, and are currently two theatres where stability operations take place. Clearly, the Norwegian participation in the International Security Assistance Force (ISAF) in Afghanistan, and the likelihood that Norway, as part of a coalition force will be involved in one or more civil war-like conflicts in the foreseeable future, implies that the Norwegian Army should train and prepare for such missions in addition to high-intensity warfighting.

As the COE is a term that describes in general terms the contemporary world and threats in which the western forces may be engaged in the future, this thesis will seek to establish the most obvious characteristics of the COE, in order to show how the COE implies significantly increasing training requirements for the Norwegian army. The

Norwegian Army does not have an appropriate method to describe the COE, thus, the thesis will use the model provided by the newly approved U.S. Army FM 3-0. In order to describe the COE and OEs, FM 3-0 establishes the operational variables: political; military, economy, social; information; infrastructure; physical environment; and time (PMESII-PT) (Department of the Army 2008, 1-5 – 1-9). The operational variables, however, describe the COE or OE in broad terms. It is important to distinguish between the operational variables and the mission specific variables, i.e., those variables directly relevant for the tactical planners (Department of the Army 2008, 1-9). Nevertheless, an analysis of the operational variables is a valuable tool to frame the challenge an army faces, be it operational requirements or training requirements.

Political

There are some militarists who say: we are not interested in politics but only the profession of arms. It is vital that these simple-minded militarists be made to realize the relationship between politics and military affairs. Military action is a method used to attain a political goal. While military affairs and political affairs are not identical, it is impossible to isolate one from each other (Mao 2000, 89)

The quote from Chairman Mao Zedong is still valid today, maybe even more so, as the importance of politics, and the relationship between politics, culture, and religion are evident in most of the different OEs today. It is vital to understand the connections between politics and the cultural and religious aspects of the environment in order to be able to influence the population, which again is a way to achieve political goals. The religious aspect is especially important when dealing with Muslim societies. As the Muslims believe that God is within everything, God must also be within politics, governance, and societies. Thus, it is highly unlikely that Muslim fundamentalists will ever believe in any separation between church and state within their societies.

The political variable also encompasses the presence and significance of the actors in the COE: regular and irregular forces, insurgents, terrorists, criminals, conflict entrepreneurs, media, private commercial organizations, private security organizations, transnational corporations, and nongovernmental organizations that provide humanitarian assistance. The large number of actors contributes to the increased the level of complexity of the military operations (Forsvarsstaben 2007a, 39-47).

Concerning training requirements, the importance of political considerations in military affairs is not a contemporary invention. Carl von Clausewitz addresses the significance of balance between policy and politics on the one side and military operations on the other side, and concludes “the political object – the original motive for the war – will thus determine both the military objective to be reached and the amount of effort it requires (Clausewitz 1989, 80-81).” What is new, is the way contemporary forces carry out full spectrum operations in general, and stability operations in particular, which implies that lower level commanders must also understand the political environment and possible political, and strategic, implications of small unit actions. Indeed, this is the scenario from which a former Commandant of the U.S. Marine Corps, General Charles M. Krulak, described “the strategic corporal (Krulak 1999).”

Military

The COE does not address enemies but threats, which range from traditional conventional forces similar to what, for instance, Russia can field, to insurgent forces similar to the insurgents currently operating in Iraq and Afghanistan. The two extremes on this scale represent challenges with regard to the threat picture in their own perspectives. The threat of a conventional force requires the Norwegian army to be able

to conduct high intensity warfighting operations, while the threat of insurgent forces requires the Army to be able to conduct counterinsurgency (COIN) and stability operations, which, accordingly, is stated in the current training doctrine of the Norwegian army (Hærstaben, main body, 4).

One significant characteristic of the COE is change. From Norway's commitment in Lebanon, through the Balkan period, and to today's Afghanistan, change in the threats and their methods is evident. Evaluating the threat pictures as they have evolved from the end of World War II until today provides the same evidence, i.e., change. Thus, the Army must evaluate this evolving change with regard to both the adversaries' and own forces' *modus operandi*, as well as other parallel changes with regard to culture and environment. The purpose of the evaluation should be to retain the initiative instead of becoming solely responsive to the adversary's action, or worse, ineffectual. However, evaluation alone will not help the forces deployed abroad. The most important part is probably the development and dissemination of the lessons learned, following the integration of new tactics, techniques, and procedures (TTPs) in the Army's units (Leners 2007).

The Norwegian Army has started the establishment of a branch in TRADOK to deal with lessons learned, however, the Army has not concluded the development of the branch (Hærstaben 2007, annex G, 1). Currently, the lessons learned from theatres abroad are, to a great extent, handed over from one unit to another during pre-deployment training, as the Norwegian Army does not have a good system for disseminating lessons learned. The basic training and the handling of lessons learned have not been bad, though, as the results from the recent engagements and skirmishes the Norwegian Army has been through have been very good. However, it is possible to argue that the good

results have come despite the system, not due to the system, as the Army is small, and everyone knows someone who can influence current challenges (Fossberg 2007).

One challenge concerning lessons learned is to establish a “collaborative issue resolution (Pietron 2007),” i.e., how will the Norwegian Army and TRADOK ensure that all units in the Army work with the same focus and unity of effort. The challenge stems from the need to delegate responsibilities to several units in the Norwegian Army. One office in TRADOK will probably not be able to handle the entire flow of information, lessons observed, lessons identified and lessons learned from the entire Army, its exercises, training, and operations. The Army must also ensure that lessons learned reach the units that need them as fast as possible, as well as ensure that the Army incorporates the lessons learned in its training programs. Significant features of the branch for lessons learned will probably be tempo and timeliness in order to disseminate vital lessons learned within the Army, and the ability to distinguish between what are relatively constant factors, i.e., doctrinal issues, and what factors that often are subject to change, i.e., TTP issues (Leners 2007). NACMTC, however, can probably be one important tool concerning the need to try, analyze, and evaluate different TTPs, due to its opportunities to provide unbiased tools for information collection and analysis (Seland 2007).

The conventional threat picture implies that the Army, in general, should be prepared to conduct high intensity warfighting operations. However, the Norwegian Army itself is currently so small that it is fully dependent on reinforcements from NATO or another coalition force to be able to fight and win a traditional war of defense in Norway, from which the requirement of interoperability springs. Interoperability encompasses a wide specter of means, ranging from plug and play capability of

command, control, communication, and information (C3I) systems, through logistics and maintenance issues, to language skills and procedures. Further, the conventional threat picture requires specific capabilities, from which additional training requirements spring. One obvious example may be air defense (AD) systems, which is probably not very important in a COIN or stability scenario, but which is vital in a high intensity scenario.

One of the main challenges with a COIN or stability scenario is an adversary who employs terrorist tactics to fight the forces present in the area. Often, these tactics are called asymmetric; however, the term asymmetric is imprecise, as it does not say anything other than that the opponent chooses to employ other means than force on force. Currently, these terrorist tactics encompass suicide bombers, improvised explosive devices (IEDs), mines, and ambushes, from which the primary requirement springs, force protection. Thus, a unit can protect itself by training, or by passive means as for instance armored vehicles. In 2006, the Norwegian army bought a set of armored vehicles for use in Afghanistan, and extended the purchase recently (Olsen 2008). The purchase adds another requirement to the training of the forces that prepares to deploy; i.e., how to drive and operate the vehicle, which again adds to the challenge of how to conduct all basic training within one year.

Clearly, the ambush threat presents a challenge different from the terrorist tactics that, largely, a unit can defeat or neutralize with passive means. The threat is exemplified by the attack on the 507th Maintenance Company at An Nasiriyah, Iraq, on 23 March 2003, where 33 soldiers in 18 vehicles, due to a navigation error, became engaged and had to fight heavily for 60-90 minutes (U.S. Army 2003). Clearly, the example shows

that all units must master basic infantry skills in order to improve their chances of survival if ambushed.

Another characteristic of contemporary forces' way to operate is the way joint capacities support platoon and section level units. It is possible to argue that fire support is fire support, regardless what means deliver the fires; however, currently junior army leaders have available resources that some years ago were available only down to the battalion level, thus, the same leaders must know how to employ the support if necessary.

The last challenge that applies to the military variable is technology. On the one hand, technology, or rather implementation of new technology, implies extensive challenges for a unit and its personnel with regard to training. The amount of new technology and the tempo with which the technology is implemented are extensive as well. Currently, the Norwegian Army is implementing the Javelin Anti Tank Weapon (ATW), a new assault rifle, a new Personal Defense Weapon (PDW), satellite communication (SATCOM) on section level, IED jammers, etc. Clearly, the implementation of technology and new equipment adds significantly to the Army's training requirements.

Economy

In general, the economic factor may not seem significant at the tactical level of conflict. However, the growing world population, increasing urbanization, and increasing number of people living below the poverty line, imply that one significant source of future conflict may be the wish from those living in poverty to have a share of the worlds wealth (Friedman 2000). Thus, when the Army becomes involved in conflict or stability operations, the Army's personnel will probably very soon face the challenge that the local

population expects the arriving force to make a difference from their life prior to the conflict. Therefore, local economic support as an important part of Civil Affairs (CA) may be one way to show the local population that there is a difference compared to the situation before the conflict, which again may work in conjunction with the goals for the Information Operations (IO) campaign, namely to win the popular support of the local population. Hence, support to local development implies a need for soldiers, NCOs and junior officers to understand how CA works, who the key players are, the roles of the Non Governmental Organizations (NGOs), and last, but not least, to understand Norwegian rules for accounts keeping and local purchase

Social

One obvious characteristic of the COE, which falls in under the Social variable is the importance of culture, and the significance of the connection between culture, politics, and religion. One important part of culture is language; however, this thesis discusses language under the factor Information (see below). It will be wrong, though, to say that the importance of culture is a new experience, which has emerged as part of the COE. T. E. Lawrence discusses the importance of cultural competence and understanding in his writings on the Arab Revolt during World War I (Lawrence 1920, 18-19). Additionally, there are examples from World War II as well, for instance, the Allied Expeditionary Force (AEF) bound for Africa in 1942 as part of Operation Torch received numerous lessons on Arab/African culture (Atkinson 2002, 57).

However, the importance of culture has probably been one of the Norwegian Army's strengths throughout many years, exemplified in an interview with the commander of the Norwegian led Provisional Reconstruction Team (PRT) in Meymaneh,

Afghanistan, as the team was ready to deploy abroad. One of the many aspects the commander had focused on during the pre-deployment training was the importance of cultural understanding, which the new commander defined as a “vital facilitator when it comes to the need to develop and maintain mutual trust between the local populace and the military force (Kroken 2006).” Nevertheless, it is important to address cultural competence with regard to future training in order to ensure that the Army does not forget this lesson.

The religious aspect is probably decisive with regard to how a force operating abroad will be able to ensure the support from the local populace, in the same way as religion is currently an important tool for Islamist fundamentalists to raise hostile action towards the force. The days following the publication of the infamous Mohammed cartoons exemplified this aspect thoroughly. Because of the cartoons, riots were launched in Damascus in February 2006, which resulted in the destruction of the Danish and the Norwegian embassies (NTB 2006). The attack on the Norwegian PRT camp in Meymaneh, Afghanistan, in February 2006 was probably also a result of imams or power players instigating riots aimed at the local Norwegian base because of the Mohammed cartoons (Eide 2006).

Similarly, as a thorough understanding of the religious aspect probably can turn out to be decisive, so can understanding of ethnic factors, as they became, and still are, important issues on the Balkans and in Africa. In some countries or regions, clan and tribal connections may be so strong that they may trump even religious influences. Thus, cultural competence is about facilitating and perhaps emphasizing our own operations through interaction with the local populace, which relates closely to the statement that

every soldier is an ambassador and a sensor (Oakley 2008), which again is a direct function of the cultural competence a unit and its personnel bring to the theatre. Hence, to become culturally competent takes time, and competes with other training and preparation requirements.

Information

Realizing the importance of the interaction between soldiers and the indigenous people, and that every soldier is an ambassador and a sensor, is an attitude that is important to establish with regard to both collection of information and conduct of the ever-present information operations (IO) campaigns (Oakley 2008). This fact lays the foundation for deducing the training requirements from the factor information, because, if it is so, all soldiers must achieve basic skills in how to handle information issues.

IO is one of the contemporary slogans or buzzwords that the soldier on the ground may find difficult to grasp. However, if Carl von Clausewitz was right when he said, “War is thus an act of force to compel our enemy to do our will (Clausewitz 1989, 75)”; IO should be a central and decisive part of every contemporary operation. Thus, even if IO by nature are Joint Operations, IO apply to all units, lines of operations, warfighting functions, etc, and apply to both influencing enemy capabilities and protecting and exploring own capabilities (Forsvarsstaben 2007a, 134-144). Especially in a COIN environment, actions at the lowest level may affect the overarching IO campaign, thus, the soldiers at those levels must be aware of what the IO area of responsibility (AOR) and IO objectives are. The soldiers at the lowest levels must also understand Oakley’s statement above about every soldier being an ambassador and a sensor. Additionally, the soldiers on the ground must understand that the military IO campaign is most often part

of a larger setting, where political dispositions, diplomatic contact, and economic support and sanctions play a big role. Lastly, it is important to be clear about that Public Affairs (PA) and Civil Affairs (CA) are not elements of IO, but related terms, as actions in the area of PA or CA will affect the IO campaign.

The significance of media is evident in the COE, as stated by al-Qaida's chief deputy, Ayman al-Zawahiri. "I say to you: that we are in a battle, and that more than half of this battle is taking place in the battlefield of the media. And that we are in a media battle in a race for the hearts and minds of our Umma" (al-Zawahiri 2005, C402ASABR3-8). The question is: how does an army prepare its officers and soldiers to meet this battlefield? The goal is obvious. Every officer or soldier on the street should be comfortable with the presence of media and know what he or she can say, and know what questions the Public Affairs Officer (PAO) should take care of. However, the area of media handling in the Norwegian Army comprises some challenges, which stem from an ongoing debate on media and openness to media within the Norwegian Army. Through several articles in many newspapers and periodicals, high ranked officers, PAOs, and journalists debate on where the boundary between loyalty to the chain of command goes versus what officers can say to the press.

However, the debate on the interaction between officers and media and the visible effect that the Armed Forces have punished some of those speaking with media, or at least the media have portrayed them as punished, have probably led officers to be careful with the interaction with media in order not to harm their careers. Nevertheless, if media is important with regard to conduct of operations, the Army must promote building of trust between officers and the media, and thus increase the officers' ability to interact

with the media, which will be a difficult and time-consuming effort with regard to the ongoing debate. As the former marine, now Al-Jazeera journalist, Josh Rushing says: “The media has *become* a battlefield in the larger global war on terror. You need to ask yourself if you’re even on that battlefield and if you are ready to engage in that conflict” (Rushing 2007, 227).

The factor information covers the significance of language skills and the ability to use interpreters as well. Language is power. The ability to master one or more foreign languages provides a huge advantage when dealing with representatives from other countries, as well as when communicating through interpreters. The first requirement to address is fluency in English, which is an interoperability issue. Norwegians have a reputation for having good English skills. Nevertheless, there are indications that people from Norway may have a somewhat unrealistic impression of their own language skills (Tessem; Engström 2007). The other language requirement springs from the actual theatres of operations. All soldiers and officers should at least learn some of the local language from the theatre to which they prepare to deploy. Local language skills are important to be able to gain trust from the local population, as well as to be able, to some extent, to follow the communication between the interpreter and the other object for the communication (Dahlen, 2006). As an example, the U.S. Army has (re)learned this lesson, and has started an extensive language-training program for all soldiers and officers who prepare to deploy into a theatre.

Infrastructure / Physical Environment

The variables infrastructure and physical environment do apply significantly to training requirements for the Norwegian Army. Infrastructure, or the lack of such, in

addition to increasing urbanization, will put restrictions on the way the forces will be able to operate in the theatre, and will be one of the big challenges in a future operation, where combat operations will be complex, both with regard to technical aspects, international law, and moral considerations (Forsvarsstaben 2007a, 39-47). However, most of the training requirements related to the variables Infrastructure and Physical Environment do not represent new challenges for the Army, as these have been central parts of the basis for training and combat preparations for many years. One area which is rather new, and which requires much and time-consuming training, is how to operate in an urbanized environment.

One requirement is very important though, as many possible AORs are desolate, where the travelling distances to next higher-level headquarters and higher-level medical facilities may be measured in hours instead of kilometers. Units down to section level, due to the way the Army operates in stability operations, face a special demand for medical skills, as it may be difficult for the force to guarantee medical evacuation by helicopter due to climate, weather and distance from existing airports / bases with helicopters. Additionally, distances and modus operandi will probably require skills in operating advanced long-range communication systems.

Time

Why does it take so long to settle what General (Ret.) Sir Rupert Smith argues is “wars amongst people?” Chairman Mao and Ho Chi Minh argued their view on time as a factor that helped the people’s war. Additionally, when looking on what has taken place in Africa and on the Balkans, not to mention World War II, to settle hatred takes time. Thus, to settle a conflict where the combatants have committed extensive atrocities

against each other will probably take generations, as those who are old enough to hate probably will have to pass away before the hatred can end. For instance, only in the last 10-15 years the relations between Germany and other European countries have been normalized after what took place between 1939 and 1945 (Beevor 2005).

Time is perhaps more a planning factor than a factor that leads to training requirements. However, it is important to be aware that all types of stability operations will take time. NATO is still present in Kosovo, and only recently has Bosnia become stable enough to allow NATO to transfer the mission and the last part of the normalization process to EUFOR. UN is still present in Lebanon since the establishment of UNIFIL in 1978, etc. Therefore, even if training and combat preparations for stability operations should focus on making a difference for the local population, the strategy nested all the way down to the tactical level should be long-term and stable.

The other effect of time, is the time it currently takes for a capable force to project force. A great power like the United States, and probably China and Russia in the near future, will be able to project power in very short time, thus, smaller states like Norway, if threatened by a great power, must be able to react to the threat in equally short time in order not to be overrun or made irrelevant. However, rapid reaction capabilities are connected primarily to the Norwegian Navy and Air Force, in addition to the volunteer part of the Norwegian Army, and will not be discussed further in this thesis.

The Effects of Current and Possible Future Operational Environments

Norwegian forces have their primary operational environments in Norway and the adjacent ocean waters. Strong ability to deal with extreme climate and similar geography inland, especially in the northern areas, will therefore dimension training and equipment. However, the Defense's participation in international

operations implies that the Armed Forces must be equipped and trained for jungle and desert conditions as well (Forsvarsstaben 2007a, 39).

The Norwegian Joint Doctrine defines the operational environments in which the Norwegian Armed Forces should be prepared to operate. More specifically, the doctrine states that the number one area of priority for employment of Norwegian forces is the bordering areas with Russia to include the ocean waters. Further, when the doctrine says that the Norwegian forces should be prepared to operate in desert and jungle environments, the doctrine points probably at Afghanistan and Sudan. Afghanistan, because Norwegian forces have been present in the country since 2003 and probably will stay in the country until the country is stable, which may take long time (Mood 2008). Sudan is listed because the Norwegian government has worked to commit Norwegian forces to the UN led force in Sudan. However, in January 2008, news came that the Sudanese president would not allow Norwegian forces into the country; thus, the Norwegian government withdrew the offer of forces to the UN force (Røyseland 2008). The question is: will an analysis of the two remaining OEs, the bordering areas with Russia and Afghanistan, respectively, add new requirements for the training and combat preparation of the Norwegian Army? Probably, the most significant requirements spring from the COE, however, the two specific OEs may add some specified requirements.

Russia

Currently, there are many indications that Russia has regained economic strength and is back on the field as a re-emerging power player. The question is: does Russia pose a threat to Norway? Currently, maybe not. The paradox in security policy is that military threat can be defined as a function of capability and will. Thus, even if Russia currently

has the capability to use force to impose her will against Norway, she does not necessarily have the will. However, the will to use force can easily change; thus, it is not possible to neglect a possible future threat from Russia without accepting risk, even if it is not likely today. Hence, the Norwegian Armed Forces must be prepared to counter a threat from Russia.

One possible future source of conflict between Norway and Russia is the northern areas and its rich natural resources, oil, gas, and fish, respectively, which affects the economy of the two countries significantly. Indeed, petroleum products, fisheries, and ocean farming is the primary source of Norway's current wealth and standard of living (Jacobsen 2008). Additionally, one of the richest areas when it comes to oil, gas, and fish is the Barents Sea, in which Norway and Russia still have an unresolved dispute concerning where the border between the two countries' maritime economic zones should go. The recently discovered Shtokman Field, situated in the Russian sector of the Barents Sea, holds crude oil and natural gas of strategic significance to Gazprom, the Russian company that holds the rights to extract the oil and gas. Indeed, one of Norway's largest companies in the oil industry, Statoil Hydro, is involved in the Shtokman project, from which Gazprom's goal is to extract approximately the same amount of gas per year as the annual total amount of Norwegian gas production (Gazprom 2006).

Due to the increased price of crude oil over the last decade, Russia has regained economic strength, from which the Russian military is one of the branches that benefits significantly. In his annual lecture in the Oslo Military Society, the CHOD, General Sverre Diesen, addresses the relationship between Russia and Norway. He argues that it will be natural that Russia due to the increased Russian economy will increase her

military activity in the north, as Northwest Russia with the Kola Peninsula is Russia's only direct strategic access to the Atlantic Ocean. However, Diesen also says that the Russian long distance air patrols as a demonstration of power in connection with the Russian suspension of the CFE treaty is not an encouraging act (Diesen 2007). During the Cold War, the Soviet Union conducted up to 600 annual long distance air patrols, compared to one or two patrols at the end of the eighties (Nordstoga 2007). However, in 2007 Russia conducted 88 patrols, which is a significant increase (Strøm-Erichsen 2008). Another example of the increasing Russian activity and demonstration of power was the Russian maritime exercise in the autumn of 2007, which took place in international waters, but within the Norwegian economic maritime zone and in-between Norwegian oilrigs. The heavy fighter and helicopter activity, centered on the Russian fleet comprising *Admiral Kuznetsov*, two Udaloy class cruiser and support vessels caused heavy Norwegian concerns and a shutdown of Norwegian air activity in the area. Due to pressure from Norwegian authorities and the Coast Guard, the Russian fleet after a while moved westwards (Helgesen 2007).

However, the Russian ratification of the Partnership for Peace Status of Force Agreement (PfP SOFA) will probably further facilitate an increased cooperation between Russia and NATO (NATO 2007b). For Norway, this ratification implies the removal of one significant obstacle in order to be able to conduct joint exercises and army-to-army cooperation with Russia, which is one way to contribute to easing of tension in the north. On the contrary, the Russian suspension of the CFE treaty as of 12 December 2007 (NATO 2007a), probably because of the United States' and NATO's plans to establish

the long planned strategic missile defense shield, shows that there are still issues to be resolved between NATO and Russia.

The areas in the north are becoming increasingly important due to the global warming. Clearly, the ice covering the Arctic Ocean is retreating, which leads to increased interest from many actors. One significant effect from the retreating ice is that in a few years, the Northeast Passage may be open year round, which offers new available waters for shipping, and a significantly shortened way for ships between Europe and Asia. These new shipping lanes will cross through the Norwegian maritime economic zone (Mandag Morgen 2007). Another interesting aspect from the retreating ice is that new areas for exploitation of crude oil and gas will become available. The question is: who will put claims to the resources? Last summer, a Russian newspaper claimed that a Russian submarine had gone under the ice to plant the Russian flag on the sea floor on the North Pole, in order to claim ownership to the resources. Even if the newspaper article turned out to be a hoax, the article indicates that the world may see a future race for new resources in the north (Editorial, Stavanger Aftenblad 2007).

To sum up, even if Russia does not pose a current threat to Norway, there are some unresolved issues between Norway and Russia with regard to natural resources of strategic importance. Due to significantly increased economic strength because of the increased price of crude oil, Russia has recently shown a will to regain her status as a power player. Additionally, there may be increased international interest in the areas in the north due to the retreating polar ice, which again may affect Norwegian interests in her maritime economic zone. Thus, Norway cannot disregard a possible future need to

defend her interests in the north in general, and in the bordering areas with Russia in particular.

Afghanistan

The challenges the Norwegian Armed Forces face in Afghanistan are extensive. However, does Afghanistan, as the second OE of current interest for Norway, represent new challenges and training requirements that the discussion of the COE and the northern OE has not addressed so far? Probably, the Afghan OE only elaborates and specifies much of the issues discussed under the COE. Of particular interest is culture, as a common denominator for language, politics, religion, history, social issues, etc. In addition, Afghanistan represents some specific challenges when it comes to COIN operations as part of the NATO-led stability operations, carried out by ISAF, much due to the mountainous area of operations (AO). The mountains themselves represent challenges due to altitude and inaccessibility; however, as Norway is mountainous itself, Norwegian forces are accustomed to operating and training in mountainous areas.

One other challenge in Afghanistan, which relates heavily to its culture, is the position and networks of local power players such as warlords, clan elders, and imams. To add to the challenge, very much of the local economy is based on harvesting opium poppies and trading/smuggling raw opium. The warlords may be defeated or neutralized through destroying the poppy fields and thus destroying the warlords' economy, however, they will not let that happen without fighting. Another aspect of the value of the poppy trade is the effect an attack on the opium-based economy will have on the local population. If NATO or other agencies in Afghanistan cannot provide other sources of

income that equal what the local population can get from the poppy trade, they will probably turn to the warlords.

Afghan culture is complex. Due to frequent wars, civil wars and unrest through the last centuries, and a tribal based society, it is not possible to discuss Afghan culture as one common culture. Tribe and tribal issues are more important than the nation and its government (Michigan State University 2008). Afghanistan's population of about 32 million people encompasses seven main ethnic groups, which speak over 30 different languages, has a life expectancy at birth between 43 and 44 years, and only 28 % of the population above 15 years of age can read and write. However, Dari as the official language and Pashto is spoken by about 85% of the population. Afghanistan's official religion is Islam, where the population comprises 80% Sunni Muslims and 19% Shi'a Muslims (CIA 2008). Thus, the tribal affiliation and the significant lack of literacy imply that the population is significantly dependent on oral communication, which again make the population vulnerable to power players that hold important positions within the local society.

To sum up, the Afghan OE does not present new challenges or training requirements for the Norwegian Army, only emphasis and specifications to the issues discussed under the COE and the northern OE. However, the culture of Afghanistan is complex, and the intermixed relations between religion, social structures, clans, politics, warlords, economy, poppy trade, etc, make Afghanistan a very challenging environment. Hence, the Norwegian Army forces that train and prepare for deploying to Afghanistan will have to pay close attention to analyzing the local conditions as well as to consider

regional and national issues that may affect their operations, which definitely will be a time-consuming task.

Summary and Conclusion

Today, a private in the Infantry has to master the use of significantly more and increasingly complex equipment than I myself had to master as a company commander in the eighties (Diesen 2007).

The Norwegian CHOD, GEN Diesen, points in his annual lecture in the Oslo Military Society¹² in November 2007, from which the quote above stems, at the importance of skills and training. Today's units need to possess capacities and skills that only specialists held in the past, for example within the medical profession. The CHOD also points out that today there is a need to have capacities at platoon and section level that were to be found at battalion and brigade level in the past, for instance, the capability to direct aircraft in on target. This chapter's discussions of the COE and the two OEs, the bordering areas between Norway and Russia, and Afghanistan, respectively, show that there are significant and extensive training requirements with which the Norwegian Army has to contend.

Generally, most of the training requirements are universal, as they spring out from the analysis of the COE. The OEs represent some specific challenges in addition to those represented by the COE. However, the key elements are the COE and the one OE, i.e., the bordering areas with Russia. The second OE, Afghanistan, can become irrelevant due to a future Government decision to withdraw from Afghanistan, even if this is not very likely. Thus, the soldiers and units must master the challenges of the COE as well as those of the OEs in order to be properly trained and prepared for future operations.

¹² Oslo Militære Samfunn (OMS)

The COE, as shown by the discussion above, represents extensive challenges that soldiers and units must master when conducting operations in the future. One challenge is that the Norwegian Army lacks a doctrine that covers properly how the Norwegian Army should conduct operations in the COE. The doctrine for land operations of 2004 covers a few generic terms, but focuses mostly on the theoretical level, operational terms, and conduct of force-on-force operations within a maneuver warfare approach (Hærstaben 2004). The new doctrine for joint operations covers the COE in general terms, but this doctrine does not say anything about the conduct of operations. Therefore, the Norwegian Armed Forces should review the doctrine for land operations, or establish a new doctrine that covers the conduct of operations in the COE.

When it comes to implications for current and future training and combat preparations, the operational variables of the COE imply that the Norwegian Army faces extensive and increasing challenges. No units and officers, NCOs, and soldiers that train and prepare to conduct operations in the COE can do that with a Cold War mindset. In today's world, all personnel must have knowledge of how the operational variables affect the COE and the OE.

The most important issues from the operational variables are that all officers, NCOs, and soldiers must have thorough knowledge about political, religious, societal, and cultural issues in general, and about local issues relevant to actual OEs in particular. In other words, they must be culturally competent. Part of the cultural competency also include basic local language skills for the actual theatre of operations, in addition to fluency in English, which is a prerequisite for working with interpreters, but also an interoperability issue.

Probably, the most important difference from the way the Norwegian Army has been training and preparing in the past springs from the threat picture in the COE, but also from the bordering areas with Russia, and the Afghan environment. The Norwegian Army must be prepared to conduct full spectrum operations, ranging from high-intensity operations, both in a defensive fight in Norway and as part of an international operation, to COIN and stability operations abroad. The difference concerning COIN and stability operations compared to the way the Army has been training, is that all units present in the theatre of operations must master basic skills to operate and survive in an asymmetric environment. In other words, all units and all personnel must have the necessary combat skills to defeat an ambush or an IED-attack, as well as have the skills and attitudes necessary to fulfill Luis Oakley's statement "every soldier is an ambassador and a sensor (Oakley 2008)." Finally, all personnel must be confident in handling media, must know the implications of higher levels IO campaigns, and must be aware of the challenges implied in General Krulak's statement on "the strategic corporal (Krulak 1999)."

CHAPTER 5

MEETING THE REQUIREMENTS FROM THE COE AND OEs

The Constant Factors' Effect on Training

In sum, domestic operations and operations abroad imply that the Armed Forces currently must be able to plan and conduct operations throughout the entire spectrum of conflict. Thus, the Armed Forces are dependent on capabilities within several areas to succeed in operations. However, the capability to conduct combat operations in high-intensity conflicts is the Armed Forces main rationale, which implies special requirements on robustness and the ability to conduct joint operations. This must form the basis for the future development of the Armed Forces. (Forsvarsstaben 2007a, 29)

Three constant factors affect the way the Norwegian Army currently trains. The factors are: the location of the army's different subunits, headquarters, and staffs; the balance between conscript and volunteer forces; and the economy. All these factors will probably remain constant in the foreseeable future, meaning that it is not likely that the Armed Forces will see any significant changes due to how these factors are anchored in the Norwegian society.

Location of the Forces

Currently, the Army has two main bases, one in southern Norway and one in northern Norway. The Army Headquarters is located to the capital, Oslo, while the Army Forces Command is situated in northern Norway. Some units are located in other places of the country; however, the location of these units is insignificant to this thesis, as the units can travel easily to one of the two large bases for training purposes. NACMTC with a significant part of the Army's training simulators is located at the main base in southern Norway, Rena, the camp in which the Army's Rapid Reaction Force (RRF) is located as well. As such, the location of NACMTC is important for the RRF training. NACMTC is

a permanent organization with especially designed and instrumented training field.

Therefore, a future reorganization of NACMTC, which implies moving the entire NACMTC to northern Norway, is unrealistic.

Location in general is a question of travelling costs, as the total time per year devoted to simulator training should be constant, regardless of the location of the simulators and training resources. However, a location of simulator resources to an area near a unit's home garrison will certainly make it easier for the unit to conduct simulator training on short notice, and provide flexibility concerning the needs of the unit's officers, NCOs, and soldiers. Thus, the main concern regarding location of simulator materiel is economy, in particular travelling costs, to get where the actual materiel is located. To travel between the main garrison in northern Norway and NACMTC, it takes two hours by air followed by two hours on road. Travelling in Norway in general and flying in particular, is very expensive. Typically, a company rotation from northern Norway to NACMTC will cost at least USD 50.000.-, only in travel, accommodation, and catering. Multiplied with the number of units travelling to NACMTC from northern Norway every year, the travelling costs make a significant percentage of the training budget (Seland 2007).

Conscript Force versus Volunteer Force

The balance between the conscript force and the volunteer force is important for Norway. A professional, or volunteer, force implies high reaction capability to crises that may occur in the future, however, a conscript force is significantly less expensive than a professional force, which gives a conscript force an increased capability to sustain a participation in international operations, simply because more soldiers are available for

the same amount of money (Bjerke et.al 2007, 37). However, the real importance of the Norwegian approach to conscripting her soldiers lies in the selection process. A screening of entire age groups before choosing which individuals will be drafted for service gives the possibility to only accept those with the competence, skills, and fitness the Armed Forces want, which also is one of the two main reasons behind the parliamentary decision to start screening entire age groups of women as well. The other reason, obviously, lies within the Norwegian approach to equality between the sexes.

An additional important effect from the conscription of soldiers to the Army relates to recruiting competent and motivated personnel to become NCOs and officers. The conscript army is most often the first meeting between the Army and the future NCOs and officers, thus by ensuring a proper basis for recruiting through the screening and selection mentioned above, the Army has a good starting point in order to develop and maintain a professional corps of NCOs and officers (Strøm-Erichsen 2006).

The model, which shapes the Norwegian Army's training and combat preparation, starts with the training of the conscript force. This training is by parliamentary resolution limited to 19 months in total, of which the mandatory service is limited to 12 months (FRM 2008). Thus, the ones who are called for service in the conscript army will normally conduct one year of training, after which the next step is either to be dismissed from service, to deploy abroad with the unit the individual has trained with for one year, or to apply for a position in the volunteer force. Those being dismissed from service will stay in the reserve for some years, however, the Norwegian army does not call people for refresher training any more, meaning that after a few years in the reserve, soldier will be dismissed from the reserve as well. The principle, however, that says that one must have

completed one year of basic training before one can apply for a position in the volunteer force applies for officers and NCOs as well. In other words, before one can apply for a position as platoon leader in the volunteer force, one must have completed a posting as platoon leader in the conscript force.

The primary challenge that springs out from the conscript army is time available for training. Obviously, the Army must cover not only the traditional requirements that normally apply for a conscript force, i.e., homeland defense, but also the requirements that derive from both the COE and the OE. Currently, however, the Army has to adapt the ways it trains and prepares for deployment abroad, as the training requirements already are extensive. To date, the Norwegian forces that deploy abroad have received proper training and they achieve good results in the operations they conduct (Hals 2007). The first challenge is that the extensive training of the forces earmarked for deployment abroad implies significant added strain on the soldiers, the NCOs, the officers, and the army families (Fossberg 2007). The other challenge is that this extensive training draws resources away from other units in the Army, encompassing effort from supporting branches and staffs in the Armed Forces, money, and access to the NACMTC (Daltveit 2007).

The question is, basically, how should the Army train in the future in order to achieve better balance between how the Army trains and prepares for combat operations and the amount of time required to train? There are already indications that the conscript force may not be able to conduct more training than it already does without imposing too much strain on its personnel and their families, from which the officers and NCOs, and thus the training itself, will suffer (Hanssen 2006). There are also indications that the

conscript force conducts more training per day, week, month, and year than the volunteer force, which reinforces the impression that the training requirements for the conscript force are too extensive (Stølan 2007).

However, as shown by the analysis of the COE and the relevant OEs, there are probably additional training requirements, with which the conscript force must comply to conduct better and more efficient training and combat preparations. Alternate solutions, instead of implying changes concerning how the Army trains, could include extending the mandatory time of service, which requires a decision in the parliament, or converting the Army to an all-volunteer force. Neither of these solutions is easily applied nor likely to happen. In a long-term perspective, the Norwegian Parliament may agree to extend the mandatory time of service. However, the probability that the Parliament increases the defense budget sufficiently, in order to convert the Army to an all-volunteer force, is very small.

Economy

The economic factor is of constant importance, as most of the restrictions concerning training stem from the economic factor. The budgets, in general, will probably not vary much in the coming years, even if the Defense Policy Committee recommended last year that the Government should increase the army budget with NOK one billion in order to allow the Army to establish another battalion of volunteer forces. The committee recognizes that the current threat scenario implies a need for an increased reaction capability, which only professional forces can provide (Bjerke et.al. 2007). However, even if the Army's budget increases, the Government will probably earmark the budget increase for the professionalization and training of the other battalion. As

such, the Army will not have any additional money for training in the future. Therefore, any recommended solution for the future cannot be significantly more expensive than the current solutions.

The Effects of Training Paradigms

As quoted from the Norwegian Joint Doctrine in the beginning of the chapter, and reinforced in the Army's recently published training doctrine; the Army should be capable of conducting full spectrum operations, which, according to the training doctrine, embrace four main types of operations, combat operations, stability operations, humanitarian operations, and information operations, respectively. The training doctrine also states that the overarching goal for the Army's training is "battalion systems dimensioned for offensive operations in a high-intensity war scenario" (Hærstaben 2007, main body, 4-5). Clearly, these overarching training goals, and thus the underlying detailed training and preparation goals as well, must be in accordance with the training requirements that spring from the COE and the actual OEs.

TRADOKs missions and tasks, as given in the recently published training doctrine support the impression that the Army's focus the last few years has not been on training in a sufficient manner. The missions and tasks encompass the need to develop a system for quality assurance of the Army's training and education, as well as the need to develop a comprehensive structure around management and production of field manuals, training programs and guiding documents (Hærstaben 2007, main body, 6). The Army Chief of Staff¹³, Major General Robert Mood, supports this assertion in the introduction to *Training for Operations part I*. "There are two basic factors that influence largely the

¹³ In Norwegian: Generalinspektøren for Hæren.

way we train. The training must comply with the demands and requirements concerning today's operations, and must be preparations for tomorrow's operations (Hærstaben 2005, 4).” Additionally, from *Training for Operations part I*: “You fight as you train. That is why you must train as you intend to fight (Hærstaben 2005, 16).” However, the challenge is that the Norwegian Army only to some extent lives up to these requirements today.

The question is: do Army's units still train and prepare for a “Cold War” scenario? Probably some do, as the Army as a whole has not fully adapted its training to the challenges presented by the COE and the actual OEs. Nevertheless, this is natural, given the primary mission to defend Norway from foreign aggression. However, already in 2005, the Army Chief of Staff argued that there is probably an imbalance with regard to how different units train (Hærstaben 2005, 4-5). It may be difficult, though, to argue for a change, since, according to non-Norwegian sources, those missions the Army conducts today it accomplishes very well. Probably, some of the reasons for good results, especially when operating abroad, stem from the Army's selection of its key personnel, selection of the conscripts from the upper half of each age-group, and a careful prioritization of those units bound for international operations (Daltveit 2007). Nevertheless, the Army faces challenges with regard to training and competence, which both the Army Chief of Staff and Commander TRADOK, Brigadier General Barthold Hals, acknowledge (Mood 2008; Haug 2008).¹⁴ The Army Chief of Staff's objectives concerning the challenges the Army currently faces is to increase continuity, to increase competency, and to increase combined arms training within the Army's units (Mood 2008).

¹⁴ Expressed by Major Jan Erik Haug during discussions with the author in April 2008. Major Haug is currently the Military Assistant to Commander TRADOK, Brigadier General Hals.

When it comes to training, however, one of the biggest challenges is probably that much of the decision-making with regard to how the units should conduct their training is pushed down to the battalion level (Hærstaben 2006, 77). This is not to say that pushing the decision-making downward is a bad thing, however, if higher-level staffs continuously push an increasing number of tasks down to the battalion and company level, the outcome, eventually, will be poor as units and commanders become overwhelmed by the additional requirements. The real issue is that delegation of tasks and authority must be followed with sufficient resources, i.e., money and manpower, to solve the tasks, which currently may not be the case. One army major stated in the study *Training for Operations, part 2*: “The foundation for training for operations is laid within good staff work and reliable support activity within and outside the unit (Hærstaben 2006, 76).” In other words, units that train for operations need all the support they can get from staffs and units at other levels in the Army, however, there is probably potential for improvement concerning this type of support and probably potential for taking away some of the tasks currently pushed down to battalion and company level.

One challenge that at least partly, stems from the delegation of tasks down to battalion and company level is the way the Army currently trains its commanders from platoon leaders and up (Stølan 2007a). Observations from the CTC support this perception, as there is a tendency observed during CTC rotations that commanders at platoon and company level do not receive enough training themselves, as they are either part of the training team, or have to conduct administrative tasks while the rest of the unit trains (Hagen 2006). This is an area of concern, as commanders on all levels need tactical training in order to develop their own skills. The Army’s training doctrine says that

leader training is one of three factors within leader development, the other two being leader education and personal growth (Hærstaben 2007, annex c, appendix 6, 1). The doctrine continues: “The Army must train its leaders as well. An important principle is that a commander cannot train oneself in the task of being a commander - the commander has to be trained by qualified personnel as well (Hærstaben 2007, annex E, 1).”

The Norwegian Joint Doctrine looks into another factor that adds weight to the Army’s challenges, which is the need for flexibility, with regard to both different methods of approach and operational methods; and the needs to utilize the possibilities implied in effects thinking, networks thinking, and maneuver thinking. This factor adds significantly to the training requirements aimed especially at current and future commanders. Thus, the Army must facilitate and conduct training and coaching of today’s and future commanders at battalion, company, and platoon level, who will be the ones who will make most of the important decisions in operations today and tomorrow. According to the Joint Doctrine: “It is a particular challenge to develop commanders on all levels to be able to regularly gain initiative and make decisions on their level, and simultaneously, if necessary, act on a direct order from higher levels (Forsvarsstaben 2007a, 54-59).” Especially designed to meet such requirements, the NACMTC has tools especially suitable for decision training scenarios, available through the Command and Staff Trainer (CST) and the CTC, given that the commanders train in their designated roles together with their units.

One other challenge for the Norwegian Army is the current exercise cycle. Every year the Armed Forces conducts one particular large scale winter exercise that encompasses most of the Army’s units, many of the Norwegian Air Force and Navy

units, some Home Guard units, and most often allied forces from NATO and PfP countries. However, the exercise will normally take place in the same areas every year, with few exceptions; and the exercise objectives are normally an offensive operation followed by some kind of stability operations. However, due to the size of the exercise and the prestige connected with it, the exercise will be the one activity that all units focus on during the training year. After the exercise, due to the one-year training cycle of the conscript force, the Army's focus shifts from basic training to preparations of those units bound for international operations (Stølan 2007a). Thus, from the day the fresh recruits join their units, normally in August every year, until the exercise commences, normally in March, the units will have not one year to accomplish the basic training, but seven months. Recently, however, the Army has made a change with regard to the when the Army receives new recruits, from once a year, normally in August, to twice a year, now in January and August. The Army imposed this change due to the need for a larger capacity to react to incidents and crises, not because of the challenges with regard to training. As such, this change has not implied any big changes to the exercise cycle.

The one competency that suffers specifically from the current training paradigms and exercise cycle is the Army's combined arms competence. First, there are obvious differences between the volunteer part of the Army and the conscript part. Second, there are obvious differences between units in the conscript force. Interestingly, however, the battalion with the best reputation when it comes to combined arms competence is one of the conscript battalions: namely the Armor Battalion of Brigade North (Stølan 2007a).

The challenge is how can the different units in the Army build combined arms competence when the available time for training is restricted? The answer is obvious, to

change the way the units train. Not to say that the Army should change the sound principle of bottom-up approach to training, which means to build competence from the bottom, which again means that, for instance, the a unit must pass the platoon level training before proceeding to the company level (Hærstaben 2005, 16-18). However, the units must train more efficiently, meaning that they must use less time in achieving their training goals. This is possible by significantly increasing the competence of the instructors, however, experience shows that the most efficient learning takes place when supported by simulators, professional training teams, and automated and unbiased tools for evaluation and feedback (Seland 2007). Thus, one way to increase the combined arms competence is to increase the availability of training time per unit at NACMTC in general and in the CTC in particular.

Some units train more often at NACMTC than other units, however, the large boost of combined arms competence will only come when the entire Army has changed in the way its companies and battalions train. The challenge is that most of the battalions send their companies to NACMTC and the CTC without any clear idea of which training goals the different units are supposed to achieve. The only battalion that has trained as a battalion system in the CTC is Telemark Battalion, the Norwegian Army Rapid Reaction Force (RRF) (Røstad 2006). Additionally, as of summer 2007, NACMTCs training schedules show that very few, if any, rotations through the CTC have been conducted in accordance with the generic rotation programs (NACMTC 2004, 2005, 2006, 2007). The most obvious reason why the Army's battalions fail to send their units through NACMTC and CTC is that the cost, in a broad perspective, connected with rotations through

NACMTC is very high. Thus, a rotation is easy to cancel if the unit is short on time or money (Fossberg 2007).

The discussion of the COE shows that the threat is present everywhere, exemplified by the attack on the 507th Maintenance Company at An Nasiriyah, Iraq, on 23 March 2003 (U.S. Army 2003). Thus, all forces operating in a given environment must master essential infantry skills in order to survive a regular attack, an ambush, or an IED attack. Currently, however, most of units in the Norwegian army train differently, where especially the combat support (CS) and combat service support (CSS) units do not receive the same basic infantry training as the maneuver units (Daltveit 2007). In addition, few of these units conduct rotations through NACMTC, due to both the capacity at NACMTC and probably also because the units prioritize other training requirements (Seland 2007). Clearly, these units have extensive training requirements within their own profession, which may be difficult to cover in one year of basic training, even before they start conducting the basic combat training, which is one reason that some of the CS and CSS units have integrated volunteer soldiers in especially vulnerable positions concerning competence and training. Nevertheless, in order to be prepared to conduct operations in the COE, all units in the Army should go through the same basic combat training in order to be able to withstand for instance an ambush or an IED attack when operating in the COE.

Summary

The Norwegian Army suffers from training paradigms that prevent effective and efficient training, the most important of which is that the Army's units do not utilize the possibilities implied in simulator-supported training, which will eventually give the units

more time to conduct additional training in order to maintain and develop combined arms competence. However, if all units from battalion level and down should rotate through NACMTC and CTC, even in a modest manner, the capacity at the CTC is not enough to serve the purpose, as it is currently very difficult for non-maneuver units to get access to NACMTC and the CTC. One particular issue that must be addressed is that the Army must facilitate training of its commanders in a better way. Currently, platoon and company commanders are often either part of the training team responsible for training their unit, or they have to do administrative work when their unit trains. Time, money, and competing tasks pushed down from higher echelon staffs are probably factors that prevent staffs and commanders from brigade level and down from prioritizing training for themselves and their subordinate units, which may very well be the most important effect of military transformation.

The Effects of Military Transformation

The observations from the CTC rotations, as well as the number of cancellations and improvised or reduced rotations at both NACMTC and the CTC, indicate that there are many tasks competing with the Army's need to focus on training. It may be tempting to say that this lack of focus stems from the military transformation the Army has gone through, and that the main reason is that the Army has been significantly reduced without a proper reduction of its numerous tasks and missions. However, it is not possible to make any conclusions on this issue without a large-scale evaluation of the Army's current missions and tasks, compared to manpower and workload. Nevertheless, there are some indications suggesting that the workload of the Norwegian Army is unhealthy, which is reinforced by the fact that the current amount of overtime work in the Armed Forces

equals a work force of 1000 personnel, or 7% of the number of active duty personnel in the Armed Forces (Sævrøy 2008).

As stated in chapter two, all sources the author has approached concur in the perception that many of the army's staffs and key officers are so bogged down in transformation issues that they do not have much capacity to develop and support training. These statements support the perception discussed above, that so many tasks are pushed down from the higher echelon staffs that it is difficult for the staffs and units from brigade level and down to focus on training. As an example, one of the officers the author spoke with asserted that, due to the transformation, there is an unresolved interface between the Norwegian Joint Operational Headquarters and the Army Forces Command suggesting a joint training deficiency. The personnel who are working with organization of forces supposed to deploy and conducting pre-deployment training do not normally receive all the operational guidance they need from any of the headquarters involved (source omitted). Obviously, it is difficult to share a common understanding without needed guidance. Consequently, both the Army and the joint level should resolve disputed interfaces to support training and combat preparations.

One direct consequence of the transformation, however, took place late 2007, when the Defense Staff chose to cancel the annual winter exercise, mentioned above, in order to prioritize the conclusion of a large economy project. On a question asked in the Armed Forces' monthly, *Forsvarets Forum*, about the reasons for the cancellation, the Defense Communication Director, Birgitte Frisch responded. "The economy project is a large project that has to be concluded, in other words, we are willing to cut something we think is some of the most important (sic). It is beyond doubt that units will receive a

poorer training standard after this decision, but it is a consideration and now we have chosen to prioritize the economy project (Frisch 2007).”

One of the biggest challenges that stems from the transformation of the Norwegian Army is the reduction of the force, which becomes obvious when considering the change concerning international commitment. Earlier, large parts of the forces that were deployed abroad came from the reserve, which is currently not the case. Most of the forces the Army deploys to international operations come from the conscript force immediately after the conclusion of the one-year basic training, which contributes significantly to imposing further strain on the Army’s personnel and their families. The strain from the deployment tempo is particularly hard for officers and NCOs, spanning from a deployment cycle of an average of 1:3, i.e., 6 months abroad and 12 months in Norway, to a 1:1 cycle for specialists (Thomassen 2008). Following the immediate return of a unit’s officers and NCOs after completion of one tour abroad, a new contingent is due to be trained and prepared for deployment. This results in the constant wear and tear on officers and NCOs, which recently was confirmed by a report from the Norwegian Labor Inspection, who concluded that there is a significant imbalance in the Army concerning missions and tasks on the one side and resources on the other side (Rosvoll 2008).

However, the transformation, or modernization, is not going to stop. On the contrary, modernization is a never-ending cycle, due to the complexity and change implied in the COE. The question remains: on which basis does the MoD, and eventually the Government, carry out the modernization of the Armed Forces? There may be indications that this basis is subject to change as well, as stated below by the

Undersecretary of Defense, Espen Barth Eide, in his opening remarks at the Norwegian National Defense College in September 2007.

With the state-to-state relations as a benchmark it is in fact not asymmetric – but on the contrary symmetric – challenges that may become the predominant features concerning the Defense. Our own challenges in the northern areas are thus already to a great extent very typical. This insight shows that we already are facing what we can call post-post 9/11, then, the root assumptions for the future we made only a few years ago may have to be revised. [...] This is more than theory, this is of great practical significance. If this analysis is valid, it means that parts of the transformation of the NATO countries' military forces, in which we are in the midst of, may be transformation in a direction that has been passed by the course of events (Barth-Eide 2007).

The only thing that is certain is that the future implies change, perhaps drastic, with which the Army must adapt or become irrelevant. Probably, future transformation, or modernization, will be a constant source of distraction and a competing interest when it comes to training, which makes it even more important in the future to focus on training and combat preparations.

Training Requirements

Competence

Currently, as the COE and the actual OEs are becoming increasingly complex and the tempo increases both in operations and at home base, the competence of the Army suffers. Simultaneously, and reinforced by the effects of the COE, the Army is becoming crucially dependent on its own internal competence, almost to the extent that the Army can qualify for the term “competence enterprise.” Thus, the effect of the imbalance between training requirements in general and time available for training leads to what is probably the greatest challenge for the Norwegian Army today, namely to maintain and develop its competence. Actually, the commander of the Norwegian Army TRADOK has

expressed his concerns over the decreasing competence within the Army (Haug 2008). Probably, three basic areas within the Army's competence are especially vulnerable: leadership, basic combat skills throughout the Army, and combined arms competence. Hence, if the Norwegian Army is not able to turn the trend and to maintain and develop its competence in the future, the Army is taking a clear risk where its future relevancy is at stake.

Up to this point, this thesis has discussed two main sources influencing the Norwegian Army's training and combat preparations. First, the COE and the two actual OEs impose a set of training requirements; and second, there are a set of limiting factors that set restrictions for how the Army can train. Some of these limiting factors are static like the location of forces, the balance between conscript and volunteer forces, and economy, while other factors are self-imposed. However, these self-imposed factors are not easily dealt with, as they are rooted in Army and unit culture, and the Armed Forces' transformation drive. One of the things the Army can do, which also will contribute to a cultural change, is to change, or adjust, the way it trains and prepares for combat. The rest of the thesis will deal with how the Army can seek to mitigate the challenges that spring from the intersection of requirements and limiting factors.

Leader Development

War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty. A sensitive and discriminating judgment is called for; a skilled intelligence to scent out the truth (Clausewitz 1989, 101).

A popular contemporary slogan says "it is all about leadership." If this is correct, clearly, the task of developing the future's leaders should have top priority in every

institution, service, and army. The Norwegian Army's approach to leader development comprises three parallel runs: leader training, leader education, and personal growth (Hærstaben 2007, annex C, appendix 6), of which leader training probably is the most relevant run with regard to the Army's daily training and combat preparations.

In an ideal world, the Army would train its commanders as an important and integral part of the Army's training and combat preparations, not let the commanders be trainers for their units nor be part of the training team. However, this is often not the case if the commanders make it to the training field at all due to administrative tasks. An important question is then, how can the commanders allocate sufficient time for their own training? It may be naïve to think that Army units can deal with the challenges and effects presented by the ongoing transformation in a short perspective, meaning that it may be difficult for commanders from platoon to battalion level to stop doing the tasks pushed down from above. However, it is possible for commanders to allocate time for their own training, by freeing the time they have spent training their units. One way to do this is either to establish training teams within one's own unit, in which no commanders are assigned, or to use training teams from the outside. Currently, two of the very few places in the Norwegian Army that have training teams available which can provide realistic training, to include leader training, in an environment characterized by complexity, uncertainty, and a combined arms environment, are the CTC and the CST at Rena (Seland 2007).

Full Spectrum Operations in the COE and actual OEs

In the big picture, the current goals for the Army's training and combat preparations are probably sufficient to cover the challenges from the COE and the actual

OEs, where the key words are full spectrum operations, combat operations in a high-intensity environment, battalion systems, and combined arms. The challenge concerning training and combat preparations stems from the imbalance between the training goals and time available. The task to train to these standards was challenging enough during the Cold War; however, Norway focuses outward as do most of the rest of the western countries, which means that extensive requirements and standards are added to the ones valid for the defense of Norwegian territory. In addition, the technological development that provides a force multiplier also adds significantly to the training challenge. The CHOD, General Sverre Diesen said in late 2007: "...the Armed Forces must continue to develop, acquire, and employ new and modern materiel, as it is the technological supremacy that has given the Norwegian forces in Afghanistan the possibility to achieve the recent results (Diesen 2007)."

Probably, the two expressions "every soldier is a sensor and an ambassador (Oakley 2008)," and "every soldier is a rifleman (Barron 2005)," sums up most of the challenges that spring from international operations in the COE. As such, all personnel in the Army, regardless of rank, should be able to identify what information is essential and hand it over to those who need it. Concurrently the individual must have the skills it takes to maintain and develop relationships with allies, media, and the local population. Clearly, the skills must be adapted to rank and responsibility.

By constantly developing relationships, the goal is that the environment in which the Army is operating will start developing in a supportive way. This requires a lot of cultural competence, language skills, and knowledge on the use of interpreters on the as well as knowledge and confidence in how to engage with media. Units and soldiers can

only achieve these skills through regularly training on the necessary skills; units will have to use role players, as well as representatives for particular cultures and representatives from media, to achieve the desired results.

Obviously, all units and soldiers who operate in the COE must be able to respond to attacks, ambushes, IED threats, etc., which implies that not only maneuver units but also CS and CSS units must train to fight an infantry battle. Concerning the one year the Norwegian Army has to conduct basic training, this requirement impose heavy constraints on training priorities, and must have consequences for prioritization of training time at the CTC, meaning that CS and CSS units must have access to the CTC as well, not only maneuver units.

The other part of the full spectrum operations aspect, which applies to both international operations as well as defense of Norwegian territory, is high-intensity combat operations, where access to NACMTC in general and the CTC in particular is crucial to achieve the training objectives. The CTC is crucial when it comes to maintaining and developing combined arms competence, as the instrumented training field provides the opportunity to achieve and receive effects from artillery, aircraft, anti-tank mines, etc. However, the CTC does not have capacity to allow every battalion and company size unit to train with simulator support. Even if the CS and CSS units manage to allocate time for basic infantry training, it will be difficult, if not impossible, for the units to get access to the CTC due to the current prioritization of training time.

Thus, it is obvious that the Army must do something to ensure that all units have sufficient competence at the end of their basic training, and similarly their pre-deployment training. The high-intensity combat and combined arms aspects are

challenging enough concerning the one year the Norwegian Army has available to conduct basic training. That challenge is intensified because of the specific requirements from the COE, which implies that all units trained and prepared for international operations must be multi-purpose units and must be able to defend themselves, even when operating as small units. Hence, in order to enhance learning and to save time by training efficiently, the Army as a whole must employ simulator-supported training to a much larger extent than today. Simulator support gives unbiased and uninfluenced feedback to the training units and its commanders, and contributes to effective learning in a much more effective way than traditional training.

NACMTC

Originally, the plan in the first phases of the project that led the Army to establish NACMTC was to build two CTCs, one located in southern Norway and one in northern Norway, respectively. Each would have the capacity to train a battalion task force at a time. Because of economic reasons, the Army reduced its ambitions, where the plan was adopted to establish two CTCs as originally planned, but with the capacity to train a company size task force at a time. However, again due to economic reasons, the goal was reduced once more, and the idea of a CTC in northern Norway was cancelled (Seland 2007). Thus, NACMTC is currently located at Rena in southern Norway, and comprises, in addition to the CTC and the CTS, a small staff organized as a battalion staff, an Opposing Force (OPFOR) Squadron (Sqn), a Gunnery Wing, and an Armor Drivers School.¹⁵

¹⁵ Se appendix D for the current and the proposed future organization sketch.

The current rotation concept applies only for the Army's maneuver units. However, the concept comprises four rotations, where the first rotation is basic training for tank crews, where the tank drivers and tank commanders receive specific training in addition to the training given to the crews as a whole. This rotation takes place at the Armor Drivers School and the Gunnery Wing in its entirety. The following three rotations take place at the CTC, where the second rotation focuses on section and platoon level, and the third rotation focuses on platoon and company level operations with a combined arms approach. Finally, the fourth rotation focuses on complex company operations in a full combined arms environment (Seland 2007).

All of NACMTCs subunits largely utilize simulators in order to accomplish their primary task, which is to facilitate efficient training and to save costs for the Army. The CTC has most of the outdoor simulators, sufficient to equip two companies in addition to the OPFOR Sqn, and several sets of simulators spread out to three camps in northern Norway. The Swedish company SAAB has delivered most of the Army's outdoor simulators and the computers, networks, and antennas that gives the CTC the possibility to inject events, and to monitor and to track what takes place. The appendixes B, and C of this thesis gives the details in the dissemination of the outdoor simulators, however, the numbers of simulators in northern Norway, generally, equals that of the capacity at Rena, with a few exceptions.

However, the main problem for NACMTC in general and the CTC in particular, is that the capacity already is swamped (NACMTC 2004; 2005; 2006; 2007). Appendix A gives an overview of the current capacity at the CTC together with an estimate of the required number of training weeks, which shows that the capability to satisfy the Army's

total need for simulator-supported training at the CTC is nowhere near sufficient. The current capacity at the CTC is 45 weeks per year, where a normal rotation is five to six days long. Again, the need to look upon the training weeks at the CTC in one-year cycles stems from the fact that the conscript force has one year to complete its basic training.

Thus, as shown in appendix A, even with a cautious approach to future simulator-supported training, the required number of training weeks is 62. However, the one-week rotation length is too short to reach the current desired training objectives. According to the commander of the CTC, Major Bernhard Dalen, normal rotations should probably comprise eight to nine training days (Dalen, B. 2007a). Thus, if the rotation length should double from one week, i.e., five to six days, per company to eight to nine days per company, the required number of accessible weeks at the CTC is 124, which, obviously, is not possible. Thus, it is not possible to follow the recommendation of this thesis, which is to increase the amount of simulator-supported training for all of the Army's units without significantly increasing the capacity at NACMTC and the CTC.

Possible Solutions

According to the CTC North Study (Seland 2007), there are four different ways to approach the challenge concerning the capacity at the CTC. First, it is possible but not desirable to continue as is today. Second, it is possible to concentrate all the simulator materiel to NACMTC in southern Norway to give NACMTC the possibility to conduct training on battalion task force level, including all combined arms enablers. Third, it is possible to establish a branch of the CTC in northern Norway and concentrate all the simulator materiel currently present in northern Norway under CTC North, and finally, it is possible to buy the services from the German Army or the Dutch Army (Seland 2007).

Solution number one,¹⁶ to retain status quo, have one positive aspect, which is that three of the garrisons in northern Norway, Skjold, Setermoen, and Porsangmoen, retain their freedom of action when it comes to simulator supported training. However, this solution does not give the Army as a whole increased capacity, and it does not contribute to reducing strain on soldiers and their families. Additionally, there is no potentials to reduce costs or reduce the logistical challenges that result from the amount of materiel the Army uses daily.

The second possible solution is to pull together all available simulator materiel and concentrate the materiel to NACMTC at Rena, which will give the Army the ability to conduct fully instrumented training of a battalion task force, including OPFOR. This solution also provides flexibility should the Army decide to employ a regime to approve and certify units up to and including the battalion level. However, the consequences of this solution are more severe than solution number one, the most important of which is that the solution does not give the CTC any increased capacity. Clearly, the Army would benefit from a CTC with the capacity to train battalion-sized task forces; however, it is probably more important to increase the number of possible rotations through the CTC. Additionally, this solution will not reduce any costs, and it will not reduce the strain on the Army's personnel and their families.

The third possible solution is to establish a second CTC, located in northern Norway, which can save the Army travel costs for two to three rotations per year, and per company currently located in northern Norway. In order to establish the CTC, the Army must pull together all outdoor simulators currently in northern Norway and bring them

¹⁶ The discussion of the pros and cons of the four possible solutions are taken from the CTC North Study in its entirety.

under control of the new CTC, which will give the CTC sufficient capacity to train company-sized task forces against an instrumented OPFOR. As such, the solution will provide the ability to deal with at least two of the basic challenges deduced in this thesis, which is that all units in the Army need basic combat training, and that this training should be supported by simulators and training teams in order to enhance learning and save time. This solution can also have another effect, namely to reduce the strain on the Army's personnel and their families, which can be summed up in a short expression: the total number of nights out of bed. Thus, CTC rotations close to the units' home garrisons will provide the ability for the officers and NCOs to go home in the evenings when a training day is brought to an end, and it will be possible to stay at home in the week-end in the midst of a rotation if the rotation goes over two weeks.

However, there are some consequences of this solution as well. First, there is a need for some investments, which primarily result from the need to establish one or two training fields with basic instrumentation, i.e., at least one antenna, an exercise control (EXCON) facility, and optical fiber connections between the EXCON and the antenna. Depending on the degree of instrumentation, i.e., coverage for antennas with regard to monitoring tactical radio nets, base stations for a dedicated O/C net, a sufficient map foundation with height data, there will be significant costs connected with the project (Dalen 2007b). However, these costs can probably be saved by the fact that the units in northern Norway do not have to travel to Rena in southern Norway to train with simulator support. Additionally, the CTC North needs some personnel: a commander, two assistants, the SAAB representatives already present in northern Norway, and a

training team. Finally, the personnel at CTC North need some offices, a depot, and a workshop.

Finally, the fourth possible solution is to deploy the training unit to a suitable instrumented training field elsewhere in Europe, e.g., U.S. Army's Combat Maneuver Training Centre at the Joint Multinational Training Centre, Hohenfels, Germany or the Dutch Army's Mobile Combat Training Centre. The advantages of training in Germany are that the organization and role players are present, and the training centre has sufficient resources. Additionally, the culture and the language are different and must be dealt with by the training unit, and the local costs for the accommodation, dining, and administrative support is very low compared to Norway; USD 8.- per soldier per day (Fossberg 2007). On the other hand, deploying to Germany, or a similar training field in Europe, does not solve any problem other than capacity. The travelling costs between Norway and Germany will still be high, and the Army's total expenses will increase, as this thesis concludes that all of the Army's units must train with simulator support. In addition, travelling abroad and receiving training from other foreign training teams, will eventually degrade the Norwegian Army's instructor competence significantly, which is a serious long-term consequence.

The CTC North

A CTC in northern Norway will give the company commanders the possibility to be trained as company commanders, compared to being trainer or exercise leader, and will give units other than maneuver units the possibility to train basic combat skills with simulator support (Daltveit 2007).

This thesis concurs with the recommendation from the CTC North study; the Norwegian Army should establish a second CTC, located to northern Norway. Solution

number one and two must be rejected, as the solutions do not give the Army an increased number of available training weeks with simulator support. Solution number four will give the Army an increased number of training weeks with simulator support; however, the Army may degrade its own internal competence by doing so. Common for all three rejected solutions are that they do not contribute to reducing the strain on the Army's personnel and their families.

Thus, to support the establishment of the CTC North, the Army should pull together all available outdoor simulator materiel in northern Norway and concentrate the materiel under CTC North leadership and control. However, there are some important issues to address. First, it is important that the CTC North remains under control and leadership of NACMTC due to follow-up of the use of the simulators, follow-up of contractual issues with SAAB, and consistent follow-up with regard to future development of simulators and simulator policy in conjunction with TRADOK and the Norwegian Army Logistics Organization (NDLO) (Seland 2007).

Additionally, there is a need to renegotiate the support, and especially the number of weeks with available Light Portable EXCON (LPE) or EXCON support with SAAB. SAAB should reassign its personnel in northern Norway to the CTC North as well. When it comes to budgeting, the CTC North should, due to the already discussed command relationship, draw its budgets and resources from NACMTC, which eventually will have to be adjusted to reflect the increased capacity.

Proposed Rotation System

After the establishment of the CTC North, the Army will have to change the generic rotation concept in order to maximize the potential benefit from the

establishment. However, rotation number one, which is primarily training of tank and APC crews, will have to take place at Rena due to the location of the Armor Drivers School and the Gunnery Wing. Nevertheless, the dismounted force does not have to travel with the crews to Rena, as the force can conduct instrumented basic training at home base. Rotation number two should still focus on section and platoon level, but should take place at home base with support from the CTC North. Rotation number three, also at home base with support from the CTC North, should then focus on platoon and company level. Eventually, rotation number four and its focus on complex company task force operations in a combined arms environment should take place at Rena and CTC South, which, due to the current configuration, will have somewhat different and increased capacity compared to CTC North. Finally, if the future brings a regime for approval or certification of units, this should take place during rotation number four (Seland 2007).

Proposed Changes to the Army's Current Simulator Policy

There is a need to adjust the simulator policy at NACMTC as well, in order to support the proposed change concerning the Army's training and combat preparations. First, the units training at NACMTC in general and at the CTC in particular should largely satisfy a basic set of training requirements before attending NACMTC training. Further, when units arrive at NACMTC and one of the CTCs, the training should, to a much larger extent than today, focus on what training objectives TRADOK and NACMTC decide are important, and not so much on the separate units own wishes and desires (Seland 2007). Second, when the units meet at the CTC for training, the training should focus on employing training teams and role players, both to enhance training, but

also to present the units with unknown scenarios in order to provide training for the units' commanders. Finally, simulator supported training should replace training the different units already conduct, not come in addition, in order to free time for other training, and to contribute to reduce the strain on the Army's personnel and their families (Seland 2007).

Recommendations in order to Reinforce Learning

Currently, the Army's brigade and battalion commanders have very little time available to train their own units, to include subunits. One way to mitigate this challenge, which will also allow commanders from battalion to platoon level to receive training, without administrative requirements, is to increase NACMTCs capability to set up training teams (Stølan 2007). The Army uses training teams from time to time, but these do not belong to a specific organization. Thus, the Army should establish as a minimum two mobile training teams, one under CTC South and one under CTC North, respectively.

Probably, the most important objective for current and possible future international operations is to win the trust of the local population, therefore the forces abroad must operate in such way that they do not produce new adversaries every time an opponent or enemy is apprehended or neutralized. Thus, it is vital to train full spectrum operations in its entirety, supported by role players, on all levels in the Army. In addition to the challenge presented by role players, the training units and its commanders should be challenged with regard to language, the use of interpreters, and the presence of media. If necessary, the complexity of the exercises can then easily be increased by employing an increasing number of role players (Hærstaben 2006, 42).

Training Requirements Not Covered by Reorganizing NACMTC

Reorganizing the NACMTC will eventually give the Norwegian Army's units more time to train on additional requirements not covered sufficiently today. However, there are several issues a reorganization of NACMTC will not cover, of which the most important issue is probably training paradigms. The Army needs a cultural change where the Army's focus should be on training and combat preparations to a larger extent, not on ever-present administrative tasks following transformation or support to higher level staffs and units. In order to do this, staffs throughout the Army should probably focus more on facilitating and supporting training, and not delegate as many tasks as today down to battalion level and below.

Additionally, the Army needs to incorporate language training and enhancement of cultural competence, including political and cultural issues. The Army, i.e. TRADOK, should probably address language training and cultural competence through another study. However, in the future, the Army's units should also, to a larger extent than today, train language and cultural skills during both traditional exercises and rotations through NACMTC by employing interpreters and role players into exercises and training.

Clearly, there is a need to develop systematic media training for the Army's units and their commanders, which is possible to do both in garrison, and by employing journalists and media role players on exercises. However, the main challenge may stem from the current organizational culture within the Armed Forces, which says that speaking to journalists is not a good thing, and speaking to journalists may imply consequences to one's future career. Media training in the Army should be subject to

another study by for instance TRADOK, however, it will take years and much public debate until this matter is settled thoroughly; a process the Armed Forces should initiate.

Currently, TRADOK is working on how the Army should continue to develop the TRADOK branch for lessons learned. From the documentation available to the author, the process gives the impression that analyzing and disseminating lessons learned may be a time-consuming process. Thus, the challenges presented by issuing lessons learned rapidly to those who need it, such as new enemy TTPs, should be incorporated in the work on the lessons learned branch. Additionally, NACMTC is a tool the Army should consider for a role with regard to analyzing lessons learned, as the CTC has the technology available for validation of tests and experiments through unbiased collection and analysis of information.

Summary and Conclusion

The COE and the two OEs that are relevant for the Norwegian Armed Forces form the basis for the Norwegian Army's training and combat preparations. Several factors constrain the Army concerning how it actually carries out the training and combat preparations. The most important are the static factors of the location of the forces, the balance between conscript and volunteer forces, time available for training, and economy. Additionally, two other effects that heavily influence the training stem from the factors transformation and training paradigms.

To sum up the effects and thus the main challenge: the Norwegian Army has one year to conduct its basic training, which must encompass also the training requirements that spring from the COE and the actual OEs, concurrently as transformation issues and training paradigms heavily affect the degree to which extent the Army can accomplish its

training objectives. Therefore, the Army needs to change the way it conducts training and combat preparations. The most important issues are that all units in the Army need to master basic infantry combat skills, which is a task not all units currently perform, and at the same time the units must make available training time to cover COE requirements without imposing further strain on their personnel and their families. One way to do this is to conduct the basic combat training with simulator support, which provides enhanced learning and efficient training.

NACMTC has grown from being one CTC in southern Norway to what it is today, a comprehensive and advanced training tool for the Norwegian Army. However, NACMTC does not currently have sufficient capacity, especially at the CTC, to cover current demands, and nothing near the capacity to cover a future demand, as many more units should have the possibility to train with simulator support. Thus, to be able to answer the changing demands and requirements, NACMTC must change. Hence, the Army should establish a second CTC under NACMTC's command, and in order to save money and contribute to reduce strain on the Army's personnel and their families, the new CTC should be located to northern Norway. In order to make that possible without large investments, the Army should consolidate all available simulator materiel in northern Norway, and assign the materiel to CTC North. In addition, to support the Army's future training, the Army should establish at least two mobile training teams that can support both training at the CTCs, as well as traditional training. Finally, the Army should support training with role players and the presence of media, in order to present especially commanders with increased challenges, in particular within the area of leadership skills, during training and exercises.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

This thesis focused on how the Contemporary Operational Environment (COE) has evolved from the end of the Cold War and how the COE and two specific Operational Environments (OEs), the border with Russia and the mission in Afghanistan, influence the Norwegian Army. One significant characteristic of the COE is change, thus, for the Norwegian Army to be relevant in the COE, its training and combat preparations must adapt to the changes of the COE. Simultaneously, the training and combat preparations must also adapt to the requirements that spring from the OEs.

The main challenge for the Norwegian Army is that conscripts make up a significant part of the Army, meaning that the Army has one year to conduct the training and combat preparations of the conscript force, which again is the part of the Army that most often will deploy to international operations. The challenge results from the fact that the COE imposes extensive and increasing training requirements for units and soldiers, which is not consistent with the time available for training. Thus, the question remains, how can the Norwegian Army train more effectively and in accordance with the requirements derived from the COE and two OEs? The conclusion is that the Norwegian Army should reorganize the NACMTC in order to be better prepared to conduct future operations in the COE and factual OEs.

Conclusions

The analysis of the main challenge for the Norwegian Army and the training requirements that spring from the COE and the OEs concur with the thesis. The

challenges and training requirements presented by the COE and the OEs have increased significantly since the end of the Cold War. Thus, it is vital that the Norwegian Army conduct its training and combat preparation in the most effective way in order to cope with the changes and challenges. Furthermore, as the battlefields of the COE and the OEs are non-linear and most often non-contiguous, and the adversary fights with asymmetric tactics, all units in the Army should conduct basic combat training in order to be able to survive an ambush or an IED attack. However, the capacity of the NACMTC does not allow all units of the Army to rotate regularly through the CTC. Hence, the Norwegian Army should reorganize the NACMTC and establish CTC North as a branch of NACMTC in northern Norway to facilitate simulator supported training for the units in the North. In order to support the simulator-supported training in the best possible way, the Army should establish an instrumented training field in northern Norway, which will allow the observer-controllers (O/Cs) to monitor the tactical radio nets, to have communications themselves, and to provide fact-based feed-back to the training units.

In order to improve training and combat preparations, the Norwegian Army should establish mobile training teams attached to the NACMTC, which will present the possibility to support training in the vicinity of the units' home garrisons, and also when simulator supported training is not available. Additionally, to a larger extent than today, the Army should employ role players in support of training at NACMTC to include non-combatants, NGOs, and the media.

There is one particular risk connected with the conclusion, which is economy. It may seem that it is easy to establish a branch of NACMTC without significant cost. However, the thesis does not cover a detailed economic analysis to address the costs

connected with the reorganization of NACMTC, in particular the establishment of an instrumented training field in northern Norway. Thus, before the Norwegian Army decides to establish a fully instrumented training field in northern Norway, the Army should analyze the economic consequences in detail. The need to analyze the economic consequences more in depth does not alter the conclusion and the recommendations to any significant degree.

Recommendations

In addition to the recommended reorganization of NACMTC, the analysis defined some training requirements a future reorganization of NACMTC will not solve. Thus, the thesis recommends that the Norwegian Army cover these areas in future research and analysis in order to enhance the future training of the Norwegian Army. The areas the Army should research and analyze are a future incorporation of mandatory language training for officers, NCOs, and soldiers; a future incorporation of operational training with regard to media, adapted to the different levels of competence and responsibility within the Army; and a continued effort to establish a centre for lessons learned.

Closing

The COE is changing rapidly. Likewise, the two OEs relevant for the Norwegian Armed Forces are changing. Therefore, the Norwegian Army's training and combat preparations have to change as well, in order for the Army to have utility also in the future. To keep pace with the changes the Army should establish a second CTC under NACMTC, but located to northern Norway. A second CTC will give the Army a

significantly increased capacity to conduct combat training with simulator support, which provides enhanced learning and the most effective use of time for the training units.

APPENDIX A

TABLE: NACMTC CAPACITIES AND REQUIREMENTS

Table 1. NACMTC Capacities and Requirements		
Number of weeks with EXCON support		30
Number of weeks with Light Portable EXCON (LPE) support	Home base, not Rena	15
Total number of available training weeks		45
Telemark Battalion; 3 companies	3 x 3 rotations per year	9
Telemark Battalion; CSS Co, Engineer Co, Med Co	3 x 2 rotations per year	6
Armor Battalion; 3 companies	3 x 3 rotations per year	9
2 nd Battalion, 3 companies	3 x 3 rotations per year	9
Home base training, His Majesty the Kings Guard	3 x 3 rotations per year	9
Artillery Battalion; 2 companies	2 x 2 rotations per year	4
Engineer Battalion; 3 companies	3 x 2 rotations per year	6
CSS Battalion; 2 companies	2 x 2 rotations per year	4
Medic Battalion; 2 companies	2 x 2 rotations per year	4
Focused pre-deployment training for International Ops	2 rotations per year	2
Number of required training weeks, minimum		62

Source: Ingvar Seland, *The CTC North Study*, NACMTC, Rena, 2007.

APPENDIX B

TABLE: DISTRIBUTION OF SIMULATORS, NORTH NORWAY

Table 2. Current Situation; Summary of Home Base Simulators				
Article	Skjold	Setermoen	Porsangmoen	Sum
Personnel system / Combat Vest	165	165	70	400
Simulator; AG-3	115	115	50	280
Simulator; MP 5	30	30	10	70
Simulator; MG-3	12	12	8	32
Simulator; NM 149	5	5	9	19
Simulator; M-72	30	30	10	70
Simulator; 84 mm CG	12	12	0	24
Simulator; ERYX	7	7	0	14
Sector Charge M-19	12	9	6	27
Sector Charge M-100	0	0	0	0
Simulator kit; BV 206 / 12,7 mm HMG	8	8	4	20
Simulator kit; BV 206 Mine Clearer / 12,7 mm HMG	2	0	0	2
Simulator kit; SISU APC; 12,6 mm HMG	0	0	0	0
Simulator kit SISU Ambulance / Recovery Veh	0	0	0	0
Simulator kit; M-113 / 12,7 mm HMG	4	4	0	8
Simulator kit; CV 9030 30 mm / MG-3 Coax	4	8	0	12
Simulator kit; NM 142 TOW 2 / MG-3 Coax	0	4	0	4
Simulator kit Leopard 1 Bpz and MG-3 LV	0	0	0	0
Simulator kit; Leopard 1 Breaching Tank / 12,7 mm HMG	0	0	0	0
Simulator kit; Leopard 1 Mine Clearer / 12,7 mm HMG	0	0	0	0
Simulator kit; Leo 1 A5 105 mm / MG-3 AD / MG-3 Coax	0	10	0	10
Simulator kit; Leopard 2 120 mm / MG-3 AD / MG-3 Coax	0	0	0	0
OC "pistol" and OC PDA	7	7	4	18

OC Laptop and Vest	0	0	0	0
Alignment Board	4	4	3	11
OC-radio	0	0	0	0
OC-radio Vehicle Mount.	0	0	0	0
SGD	0	0	0	0
Electronic “Medic Bag” (MTD)	5	5	3	13
SAAD Alignment MG/12.7	12	12	6	30
SAAD Alignment AG/MP	20	20	15	55
PMF	5	5	3	13

Source: Ingvar Seland, *The CTC North Study*, NACMTC, Rena, 2007.

APPENDIX C

TABLE: DISTRIBUTION OF SIMULATORS, NORTH NORWAY VS NACMTC

Table 3. Distribution of Simulators; Comparison between North Norway and NACMTC
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Article	North Norway	NACMTC	Total Sum
Personnel System / Combat Vest	400	425	825
Simulator; AG-3	280	196	476
Simulator; MP 5	70	113	183
Simulator; MG-3	32	26	58
Simulator; NM 149	19	12	31
Simulator; M-72	70	46 ²⁾	116
Simulator; 84 mm CG	24	28	52
Simulator; ERYX	14	12	26
Sector Charge M-19	27	29	56
Sector Charge M-100	0	21	21
Simulator kit; BV 206 / 12,7mm HMG	20	22	42
Simulator kit; BV 206 Mine Clearer / 12,7 mm HMG	2	2	4
Simulator kit; SISU APC / 12,7 mm HMG	0	14	14
Simulator kit; SISU Ambulance / Recovery Vehicle	0	2	2
Simulator kit M-113 / 12,7 mm HMG	8	9	17
Simulator kit; CV 9030 30 mm and MG-3 Coax	12	14	26
Simulator kit; NM 142 TOW 2 and MG-3 Coax	4	4	8
Simulator kit Leopard 1 Bpz and MG-3 LV	0	1	1
Simulator kit; Leopard 1 Breaching Tank / 12,7 mm HMG	0	2	2
Simulator kit; Leopard 1 Mine Clearer / 12,7 mm HMG	0	2	2
Simulator kit; Leopard 1 A5 105 mm / MG-3 AD/MG-3 Coax	10	16	26
Simulator kit; Leopard 2 120 mm / MG-3 AD / MG-3 Coax	0	13	13

Article	North Norway	NACMTC	Total Sum
OC "pistol" and OC PDA	18	20	38
OC Laptop and Vest	0	20	20
Alignment Board	11	9	20
OC-radio	0	30	30
OC-radio Vehicle Mount.	0	15	15
SGD	0	15	15
Electronic "Medic Bag" (MTD)	13	13	26
SAAD Alignment MG/12.7	30	31	61
SAAD Alignment AG/MP	55	60	115
PMF	0	825	825

Source: Ingvar Seland, *The CTC North Study*, NACMTC, Rena, 2007.

APPENDIX D

ORGANIZATION SKETCHES:

CURRENT AND PROPOSED FUTURE ORGANIZATION, NACMTC

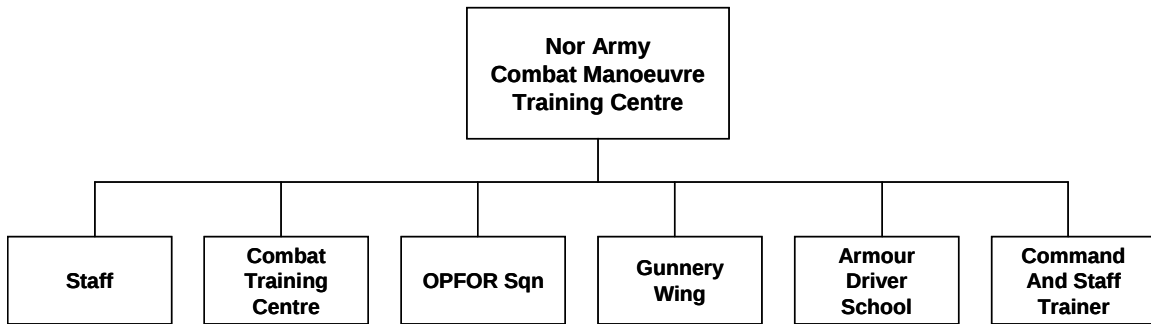


Figure 1. Current Organization NACMTC

Source: Seland, Ingvar, Generic Briefing NACMTC (Rena, Norway, October 2006).

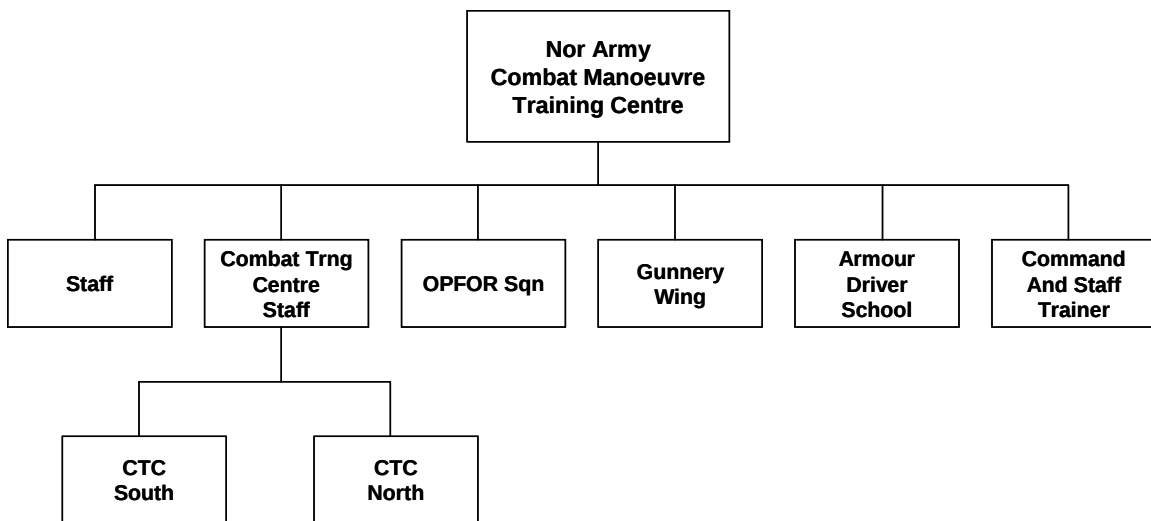


Figure 2. Proposed Future Organization NACMTC

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