

Is the Norwegian Army's View of Physical Education and Training Relevant for Modern Military Operations?

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Abstract. The demands of war consist of several dimensions that has to be considered during a military officer's education and training. Considering the nature of modern military operations, physical training is an important dimension. Participating in modern military operations and wars is definitely a physically demanding task. The present study was conducted in order to answer the question whether the Norwegian Army's view of physical education and training is relevant for modern military operations. In order to answer the research question in the present study, we used a qualitative method that included document analysis. The results of the document analyses yielded three interesting findings. First, we found that the Norwegian Army seems to learn to slow from its experiences from participating in military operations. Our second finding was that the physical demands in modern military operations seem to have increased. Our third finding was that individuals entering into military service in Norway seemed to be less robust than before. We therefore draw a conclusion that the Norwegian Army seem to be facing some challenges with physical education and training in relation to modern military operations.

Keywords: Demands of war; physical education; physical training; military operations

Introduction

Within the military profession, many soldiers and officers do not reflect upon the soldier's true role in society. Even less reflected upon are all the aspects of the demands a soldier must fulfil. In Norway, this is normal not an issue until young Norwegian Army officers meet the Norwegian Military Academy's

curriculum and education. An example is the concept of war. War can have multiple meanings depending on, for example, who is experiencing it. Today Norwegian Armed Forces are talking mostly about combat or fighting when conducting military operations abroad. The Norwegian Armed Forces Joint Operational Doctrine (NAFJOD) states that this is a synonym for war, just put into a different context than the conventional war itself (Forsvarsstaben, 2007). To be able to survive in conflict zones as a soldier there are a number of “measurable” requirements that must be achieved. These requirements are referred to in the military as “the demands of war” and are seen as the existential features a soldier must possess to survive in combat. The demands of war are related to the requirements of hardiness in a soldier so that he or she will cope with combat (Säfvenbom, 2008; Säfvenbom, & McD Sookermany, 2008). This is dependent upon good leadership. The U.S. Army’s field manual 6-22 on army leadership emphasises presence as one of the requirement for military leadership. Within the requirement of presence, one finds both professional and military bearing, meaning how to conduct oneself. Also included is an emphasis on confidence, resilience, and fitness. Fitness is in FM 6-22 further seen as strength and endurance that supports emotional health and conceptual abilities under prolonged stress (U.S. Department of the Army, 2015).

The core of the military professions is about mastering the domain of war. Educating soldiers and officers who are able to master this domain is thus the most essential task of military training and education. We therefore consider the theme certainly relevant for any soldier, officer and officer in the Norwegian Army, as the Norwegian Army is becoming increasingly more professional. “The rigors in combat can be extreme. In our profession, the will to succeed and to strive towards results that exceed the expected, is the difference between success and failure” (Forsvarsstaben, 2007, p. 160, authors translation). This quotation from the NAFJOD give a good picture of why soldiers and officers need a strong physical base while conducting their professional practice. In addition, aggressiveness training is also important in order to face the rigors in combat. A previous study of how to train aggression and aggression control in professional soldiers has shown this type of training to be very effective (Boe & Ingdahl, 2017). The willingness to exercise kill can also be increased, and the role of the group and the aggressive predisposition of the individual soldier has been found to be important factors in order to train aggression and aggression control (Boe & Johannessen, 2015). Aggression is related to the ability to exercise physical effort. Physical exercise is a thus an important dimension within the demands of war. With physical exercise, we mean “a systematic influence of the athlete over time with a view to improving or maintaining the physical, mental, technical and tactical assumptions underlying the performer's performance” (NIH/F, 2005, p. 6, authors translation). By constantly exposing the soldiers to more challenging tasks, it is possible to increase the individual soldier’s physical fitness skills. This will increase the possibility to respond effectively when facing a dangerous situation (Matthews, 2014).

In 2008, the Norwegian Armed Forces introduced a new curriculum for physical training, referred to as body, movement and energy (BME). This curriculum replaced the curriculum for physical education from 1992. BME builds on what the conscripts previously have learned in the Norwegian school

system (Säfvenbom & McD Sookermany, 2008). At the same time, we see that the youth of today's society are less physically active than previously, and that their physical shape has become worse (Dyrstad, 2006). A question then arises, is BME the correct way to go regarding physical education for the Norwegian Armed Forces?

The basis for the curriculum for BME is the Norwegian Armed Forces doctrines and education plans, in addition to the report Project BASIC (GIH, 2005; 2006). Project BASIC provides guidance and views on how to train before and during operations. Project BASIC was written by several officers with extensive experience within the field of military profession. Other nations that perhaps we ought to look at, because of their similarities with our concepts, are also making changes in their physical training. The Danish military forces has as an example has established a Military Physical Training Team (MPTT) that looks at all aspects within physical exercise. Against this background, one may wonder if the Norwegian Armed Forces take into account the physical demands placed on the individual soldier in current operations. In other words, do the Norwegian Armed Forces take into account the demands of war in its education and training?

The research question

The research question in this article was the following: *Is the current understanding of physical training in the Norwegian Army relevant for the demands of war in contemporary military operations abroad?* In this article, we restricted ourselves to just look at military forces in Norway, Denmark, and the USA. The military forces in Denmark is very similar to the Norwegian Armed Forces in most cultural aspects. In addition, all four nations are members of the North Atlantic Treaty Organization (NATO) with relatively similar operational patterns and similar materials and equipment. We will however investigate only the domain of physical training, and especially the basic view of how one should conduct physical training. In order to answer our research question, we will discuss three factors: 1. Has the physical demands of the soldier changed when one looks at the demands of war of modern military operations? 2. Is the Norwegian Army's viewpoint on physical training relevant compared to what other nations have experienced? 3. Is the physical training in the Norwegian Army relevant, compared to the demands from participating in modern military operations?

Method

To answer our research question, we decided to use a qualitative study of existing military governing documents (Johannessen, Tufte, & Christoffersen, 2010). We could have chosen to interview different officers and ask them if they felt that the physical education and training they had received in the Norwegian Army had been relevant for participating in modern military operations. However, we decided not to do this. The reason for this was that we were interested in the Norwegian Army's view as an organization on physical education and training for modern military operations, and not the individual officers view regarding the same themes. In addition, by using interviews we could encounter several methodological problems with finding officers that had

participated in modern military operations. We would also face some difficulties in defining what participation in a modern military operation meant, thus rendering our informants answers less valid. Choosing interviews as our method, we would probably have ended up with only a limited number of informants, indicating that very little could be said about the generalizability of the results.

Another possibility would have been to use a more quantitative approach, for instance by using a questionnaire. This approach would probably have substantiated our assertions and arguments in a more quantitative way. However, possible challenges with using for instance a 5 point Likert-scale could be that there exists a social desirability bias where the respondents do not want to give a socially unacceptable answer: The result of this can be that respondents often answer with the mid-point instead of what they actually thought (Garland, 1991). Silvera and Seger (2004) have also discovered that Norwegians in particular tend to shy away from the extremes of rating scales. Also, according to Elstad (2010), if respondents are left to themselves they will risk losing focus. Continuing this line of thinking, Vaitl et al. (2005) argue that general cognitive impairment may affect the ability to focus. Considering these challenges and that our research question dealt with an organizational view (as in the Norwegian Armed Forces), we decided to use document analysis as our data collection method in order to answer our research question.

Data collection method and literature search

During our literature search, we used several sources. Using the Norwegian library service (BIBSYS) we found relevant literature. In addition, we used the Internet to find websites of other nations military forces. We also used the Norwegian systems Doculive and FOBID to find relevant military documents. The basis for this literature search was the following questions: Does the development of the world and its conflicts lead to a change in the demands of war for the individual soldier in a combat situation? What are the demands of war in current military operations? What governs the physical training in the Norwegian Army? How do other relevant NATO nations conduct their physical training?

Data analysis method

When analyzing the documents, we used a method based upon the grounded theory approach (Glaser & Strauss, 1967; Starrin, Dahlgren, Larsson, & Styrborn, 1997). The aim with our approach was to look for similar statements in the documents found in the literature search. The method was based upon that when we had found enough similar statements, we would then continue to other documents to look for contradictory statements. The idea behind this was to discover differences in the approaches towards physical education and training and the demands of war.

Criticism of selected literature and theory

Since much of the assessed literature and theory is discussed in general terms, the question of how one should train for operations had to be interpreted. Much of the theory indirectly answer questions related to the physical demands of war. The sports science theory we found was largely specific and had to be

analysed and simplified based on the questions we wanted to answer. Much of the professional military literature in this field is based upon personal observations of officers who have been in conflict or war. Therefore, we consider this literature to be more experience-based and thus less objectively.

This experienced-based literature also contains generally little that directly relates to the demands of war and the associated physical requirements. However, much is transferable. The sports science literature relies increasingly on the use of quantitative research in the form of statistics, tests, measurements and surveys. The sports science is thus largely credible from a scientific point of view. The challenges of this literature are that it is not to the same extent based on recent experiences from the operational environment. Instead, it is based on general training principles and relates this to the doctrines and regulations of the Norwegian Armed Forces. When it comes to BME (Säfvenbom & McD Sookermany, 2008), it is too early to say anything about the effect this will give in relation to the physical training of soldiers. The more specific literature on demands of war (Bratland, 1954; Marshall, 1947) was written over 60 years ago, and was based on observations made during WWII.

A challenge related to most documents from the Norwegian Armed Forces is that they do not provide references and sources. The Norwegian Armed Forces has also a general challenge of making what they write in their documents credible considering the lack of use of quantitative data. For example, quantitative data is in general lacking when it comes to describe physical damage of soldiers in operations and physical performance of the soldiers participating in operations.

Theoretical perspectives on military education and physical training

Physical exercise is a systematic influence of an athlete conducted over time. This with the aim of improving or maintaining the characteristics that underlie the athlete's performance (NIH/F, 2005). The training may be general to improve the capacity in areas that are important no matter the sport, or the training can be specific and targeted at a particular sport or exercise (Gjerset, Haugen, Holmstad, & Giske, 2006). In the Norwegian Armed Forces, physical education is synonymous with physical exercise. Physical education can be described as the following from the Norwegian Army's educational and training regulations; "With physical education means all activity during the daily service and in time helps to elevate or maintain the physical performance" (GIH, 2007b, authors translation).

Endurance training

A definition of endurance training is the ability to work with relatively high intensity for a long time (Gjerset, Haugen, Holmstad, & Giske, 2006). Furthermore, endurance is divided into two types, aerobic and anaerobic. These are defined as respectively; "Aerobic stands for the organism's ability to work with relatively high intensity for a long time" and "anaerobic endurance i.e. the organism's ability to work with very high intensity in a relatively short time" (Gjerset, Haugen, Holmstad, & Giske, 2006, p. 48, authors translation).

Strength training

Muscle strength is defined as “a muscle's ability to develop power under different conditions, or that muscle even to develop maximum power” (NIH/F, 2005, p. 18, authors translation). Muscle strength can be divided into three different categories. These are maximum, explosive and endurance strength (Haugen, 2002). Explosive strength is the muscles ability to develop power while they contract. Maximum strength is the muscles ability to develop sufficient power to perform an exercise one time with the greatest possible load. Persistent muscle strength is the muscles ability to develop power several times in succession (Gjerset, Haugen, Holmstad, & Giske, 2006). The work your muscles can do is further divided into two types of work, which is static and dynamic muscle work. The static muscle work revolves around keeping the same position over time, meaning that muscle is a “holder” for the position. Dynamic muscular work refers to the muscles used to carry out an exercise. This is divided into concentric (towards the centre of the body) and eccentric (from the centre of the body) movements. An example would be using a weight in which one performs two dynamic movements when one raises and lowers the weight (Gjerset, Haugen, Holmstad, & Giske, 2006).

The demands of war before and now

War can have different meanings depending on who uses the term and what the term is to be used for. The most common use of the term is that it portrays the use of violent aggression between states or groups who want to follow up their interests by force (Matthews, 2014). War is therefore essentially a matter of human behaviour. In human terms, the concept of war is used to reflect the intense physical and psychological experiences in terms of cruelty and chaos. War is a part of the spectrum of armed conflict. Within this, we also find combat situations (Forsvarsstaben, 2007). In recent decades, the conflicts that the Norwegian Armed Forces have participated in, has evolved from regular combat operations through stabilization operations to complex peace operations (Forsvarsstaben, 2014). Still, the demands of war will be evident even in complex peace operations with different fractions or actors inside a fallen state fights for supremacy and power. Several of the situations facing soldiers in the future will be volatile, uncertain, complex, and ambiguous (known as VUCA) (Matthews, 2014).

In the report Project BASIC, Borkhus (2006) writes about the war's character as something that changes our society. This change of society affects how the military train; organize themselves, and how military operations are conducted. With this, he argues that the war's character is possible to change over time. He describes the current conflicts as more complex to deal with than the former, but he points out, however, that the profession as soldiers is to master the most complex; War in the form of combat operations. For instance, being in good physical shape and being intelligent is important for passing the selection to Special Forces units (Boe, 2011; Boe, Woolley, & Durkin, 2011). This in order to cope with complex combat operations.

The Norwegian general Sverre Bratland (1954) concluded his treatise in military psychology with the following: “The psychological impact a platoon commander is exposed to in the conflict area is extensive and impair his efficiency greatly. This means that the tactical possibilities available to beat the

enemy are not fully being utilized because of the troop commander's reduced working capacity. Our current officer training should therefore be radically changed so it is based upon the mental demands on the squad leader from the beginning and thus trains the aspirants' mental resilience under circumstances that most resembles the combat situation" (Boe, Kjørstad, & Werner-Hagen, 2012, p. 49, authors translation). Bratland also wrote a lot about the vision he had as an officer in training after having participated in World War II (WWII) as a platoon leader. Bratland wrote in his treatise about physical endurance and why this was important in the military profession. Bratland who at the time was platoon leader in a British military unit described his own physical condition as satisfactory in a self-assessment before he entered into the war. He later claimed that the physical rigors he was subjected to on the European continent never came up against the physical hardships of training. Furthermore, Bratland wrote that even the most fine-tuned soldiers were psychologically affected and tired during the war. He pointed out the relevance to train with noise, friction and external influences to make the training as realistic as possible (Bratland, 1954). After reading Bratland's considerations one can ask the question whether the physical demands of the soldiers and officers actually have changed since WWII.

Rekkedal (2001) wrote that in conventional warfare soldiers' physical capacity and performance is seen as an operational constraint for any armed forces. Moreover, he further states that in today's high-tech and motorized armed forces, physical capacity is equally important. This is justified in that it can seem less important in today's doctrines and thus the concept of physical fitness is given different meanings in different military environments. To consider this further, a look at this quote; "There is reason to believe that the requirements for robustness of today's soldiers are at least as large as before. Flexibility and unpredictability characterize today's military operations, and this requires that soldiers possess a set of various integrated skills" (Aandstad & McD Sookermany, 2008, p. 229, authors translation). This tells us a lot about the basic idea behind the physical education in the military, where the military seems aware that the demands are largely as before, but that greater demands are imposed in other arenas.

The modern soldier is no longer only evaluated solely on the basis of military matters, but also in relation to ethical and moral standards in society (GIH, 2005). In the book "Men against fire" (Marshall, 1947) the soldier's body is a theme. Having a healthy and trained body is essential in the face of modern war, in line with the soldier's weapon. A soldier's hardness and resilience is something that can be trained. Marshall further noted that all physical exercise helps to boost morale in the military units. Willpower and physical strength is something that goes hand in hand and if is not present the unit will experience major challenges in combat.

Physical demands of modern soldiers

A soldier's performance is determined by several different factors. It is in many ways similarities between soldier and an athlete since there are similarities with what is found in the various forms of sport. Today's the soldier education must meet a number of requirements that meets the Norwegian Armed Forces requirements in peace, crisis and war. The main elements of such demands, or

work requirements, consists of physical and mental performance and military technical and tactical skills (Hjellset, 2003). In today's high-tech army trained for efforts worldwide the human factor is more important than ever. This is also in line with the revised Norwegian Armed Forces Joint Operational Doctrine (Forsvarsstaben, 2014) that aims to develop robust soldiers who are physically and mentally robust and can handle all types of operations and operational environments worldwide.

The soldiers of the Norwegian Army will have to be able to act in a fast pace with demanding environments and challenges. This means that a solid physical fitness and good health is required (GIH, 2007b). To this, Lt. Col. Gundersen describes how the British Army makes itself adaptable to a wide range of challenges and areas of operation. The reason for this is soldier training. In a world of constant improvements in the soldier's equipment, a more complex situation picture and a greater degree of flexibility is also required and this reflects the training for operations (Gundersen, 2006).

A new challenge for today's soldiers relates to the weight of the equipment. A soldier carries a lot of equipment on or with him when he goes to battle. Knapik, Reynolds, and Harman (2004) states that the overall weight of soldier equipment has increased steadily if one look at developments from the 1800s to the present day. This is something that affects the demands we need to ask of the soldiers we send out to operations. One of the five initiatives the U.S. military have set out to do is to prepare special training programs. Furthermore, the context of the demands of war in terms of marching and marching speed must be analysed against the soldier and the weight of the equipment the soldier carries (Knapik, Reynolds, and Harman, 2004). The Norwegian Armed Forces need robust and active people who are in a good physical and mental condition.

It is crucial that the individual soldier and the unit is developed and given the necessary physical basis and skills that will enable them to make the right decisions. This will give the capacity to solve both mandatory and unforeseen tasks (NIH/F, 2006). This gives a clear indication of what is required, although the specific requirements are not yet established, these phrases say a lot about what is expected. Just as elite athletes live in a continuous cycle from championship to championship, future professional soldiers will spend much time out in the real operational area (NIH/F, 2006).

Experiences from other nations

"Sweat saves blood" argues the Danish lieutenant colonel Kim Kristensen (personal communication, February 24, 2009). The Danish military has been involved in fighting in Helmand province in southern Afghanistan since 2007. By participating in south Afghanistan, the Danes have gained several experiences that have influenced their views on physical training of their soldiers. These lessons are just as relevant for us in Norway as for the Danes, since Norway and Denmark are culturally quite similar. K. Kristensen (personal communication, February 24, 2009) claims that physical exercise traditionally is something soldiers have been doing less conscious of what they would encounter in the operational area. The focus has mainly been on building stamina, something that is not wrong, but strength training has been given too little focus and been conducted too sporadic. Experiences from Helmand in

Afghanistan have shown that the Danes need robust soldiers with great physical strength and explosiveness.

The Danish Armed Forces (DAF) conducted surveys on its personnel in Afghanistan over two contingents (ISAF 6 and 7). The DAF found that six months of deployment in Afghanistan led to several health problems. The primary health problems were related to muscles and joints in the form of back, knee and shoulder problems. The DAF's conclusion was that more focus should be on these muscle groups during training and that one should look at measures to prevent muscle loss under the duration of a contingent (K. G. Sørensen, personal communication, October 10, 2009). This has led to a greater focus on both diet and which exercises the military units should use. In addition, the DAF now look at their soldiers as top athletes. These are the most significant changes the DAF have made is in the revision of the military training regime. To accomplish this, they created the MPTT composed of specialists in all fields that affect a soldier's physical performance capacity (K. Kristensen, personal communication, February 24, 2009).

In the field manual FM 21-10 (U.S. Department of the Army, 1998) it is stated that there are many benefits of a good physical exercise program. This can for example lead to less sickness among the personnel, increased efficiency and better mental health, in addition to a greater team spirit and combat persistence in the unit. The field manual further states that the physical shape of the individual soldier is related to how well he will do when facing combat. It has also been proven that good physics help to increase the soldiers' mobility. Training that includes aerobic conditioning; strength training targeted at the specific muscle groups, and regular marching exercises will achieve the best results. This means that if one is to be good at carry heavy equipment one must train with strain or load that corresponds to the weight of the heavy equipment. In other words, "train as you fight".

The field manual also highlights the following five physical features as important for a soldier. 1. Oxygen uptake - the body's ability to transport and use oxygen. 2. Explosive strength - the ability to carry out lifts that requires great strength. 3. Muscle endurance - the ability to perform activities that require maximum power for a limited time. 4. Mobility - the body to be agile enough to move around with heavy equipment. 5. Body Mass Index (BMI) - that this is consistent with body size and goals. The entire field manual FM 21-20 (U.S. Department of the Army, 1998) is devoted to how to train soldiers within these parameters. This is done by training in different phases throughout the entire service period, so that one gets a steady progression towards being able to withstand the maximum load when using all the equipment in harsh environments.

The American colonel Brian P. McCoy talks about six principles of how to train a unit to go into combat. The first of these is: "You should always use 100% of your combat gear (helmet, vest, ammunition, water and other equipment" (McCoy, 2007, p. 26) This underscores McCoy's fundamental idea of that he believes that one should train as close to the realistic war environment as possible, also in terms of physical strain. He elaborates this further on this in mentioning several habits that units should take into consideration in their physical exercise routines. One of these is "combat conditioning". By this,

McCoy means physical exercise that does not involve training with regular training clothes and sneakers, but training with the equipment one will use in combat in line with the aforementioned principle of physical exercise. This allows the soldiers to build physical strength, based upon the muscles that are important for the soldier in order to function well in combat situations. As a bonus, this will also increase the psychological strength of the individual soldier. McCoy (2007) argues that physical strength and mental strength relates closely to each other.

The later development of the Norwegian Army

The Norwegian Armed Forces have the last 20 years changed from being a large, static defense force against invasion, where the aim was to defend Norwegian territory. Now, the Norwegian Armed Forces is a smaller and more flexible military force being able to participate in multinational operations and solve complex conflicts, both in Norway and abroad (Säfvenbom & McD Sookermany, 2008). As a member of NATO, Norway will have to fulfil certain obligations that has to be met by each member country. This might for instance be to participate in multinational operations abroad in a NATO coalition. Whether it is ethical for the Norwegian Armed Forces to participate in multinational operations abroad is a question reserved for the Norwegian politicians, and will not be discussed in this article.

The big change in the current situation in Norway is that military units are no longer produced for the mobilization defense. Today's units will deliver its efforts immediately after their education is accomplished. The efforts will be delivered in the form of single men and women and units in operations abroad (Skuggedal, 2006). The basic idea in the Norwegian Army today is that; "The army should educate and train individual soldiers in the conflict environment Army operate in - both nationally and internationally. It is a measure for the Army to encompass personnel and units that can cope with large amounts of stress and simultaneously solve the missions" (GIH 2007a, p. 4, authors translation).

The operational training of the Norwegian Army

The basic idea for all the training in the Norwegian Army's project BASIC (GIH, 2005) is defined as "bottom-up". The principle outline is the vision that one should begin with the education of single men and women, and then continue to building systems of single men, such as squads, platoons and companies. For this to work, the basic modules, i.e. the single soldier must be so robust that he or she can withstand further supplementary training and external influences. Furthermore, the principle "train as you fight" must always underlie the training conducted in the Norwegian Army. This is a recognition of war as a psychological phenomenon and that if one trains differently, the soldiers will not be able to cope with the domain of war. As a consequence of this, the Norwegian Army will always conduct realistic training and the demands of war will be governing all training. It is further underlined that the main priority is to master combat operations (GIH, 2005).

In the Project BASIC (GIH, 2005; 2006) focus is on how the Norwegian Army should train towards operations and draw lessons from it. This should be done through analyzing and evaluating all phases of the training. Also, pointed

out is that everything the Norwegian Army do is training, and therefore all training must be of high quality and be effective (GIH, 2005). Asak (2006) writes about the handling of military experiences. The models outlined by Asak will link experiences to the knowledge and further towards the preparations and conduct of operations. Asak points out that this is something that is not satisfactory in the Norwegian Army today.

Physical training in the Norwegian Army

“The demands for physical capacity or ability to care for themselves or others in demanding conditions are not visible in the daily service. We see in part the result of this in operations abroad, where some staff officers have a very limited level of soldier- and basic skills” (Eide, 2006, p. 117, authors translation). Skjetne (2006) argues that there are structural similarities between developing achievements in the Norwegian Army and engaging in elite sports. The reason for this is that both soldiers and athletes spend almost all their time in training. Dyrstad (2006) argues that the personnel in the Norwegian Armed Forces are less active than before and therefore the personnel gain weight and are in a poorer physical shape. In conclusion, Dyrstad concludes that the poorer physical shape found among young people in 2002 compared with 1980 lead to that the young people have become fatter. According to Dyrstad, the mean average of weight gain has been 5 kg (approximately 2,3 lbs) over these 22 years.

Documents governing physical training in the Norwegian Army

The governing document of how the Norwegian Army educates and trains its soldiers and officers is the Norwegian Army's educational and training regulations. The aim of education and training in the Norwegian Army is to have; “Professionally skilled personnel with high physical and mental endurance that effectively exploits its weapons and its materials” (GIH, 2007a, p. 4, authors translation). This document state that a targeted systematic training is one of the Norwegian Army's premier cultural traits. A systematic training is a hallmark of professionalism and a common feature of winners (GIH, 2007b).

The BME concept was introduced in the Norwegian Armed Forces in 2008. The reason for this was the Norwegian Armed Forces faced new challenges related to work and competence. These new challenges were taken into account when introducing the BME concept and its new curriculum of intentions and objectives. The development was a consequence of the changes in the Norwegian society and the Norwegian Armed Forces increased emphasis upon independence, consciousness and initiative of the individual soldier (Säfvenbom & McD Sookermany, 2008).

Physical requirements in the Norwegian Army

Today the Norwegian Armed Forces and thus, The Norwegian Army, employs a test endurance (3000 meter running test for time) and a variety of dynamic muscle strengthening exercises (number of repetitions in sit-ups, push-ups, squats and chins) with a defined minimum number of repetitions for soldiers' physical fitness (Hjellset, 2003). That the exercises are general and involves several major muscle groups that are appropriate for military activity could give indications of how muscle characteristics should be improved (Dyrstad 2006). When one tests maximum dynamic muscle strength in

standardized tests with a measuring device, such as one does in the Norwegian Armed Forces, these tests put great demands on technical performance. However, it is also possible to perform strength tests in various technical ways, which undermines the validity of the tests (Bahr, Hallen, & Medbo, 1991). The 3000-meter running test was introduced in the Norwegian Armed Forces in 1980 as the main measuring tool on aerobic endurance and fitness. Similarly running tests have been used in most other NATO countries. The intention was that during a soldier's mandatory conscript military service the individual soldier should complete the 3000-meter running test three times. This would provide answers to whether the soldiers achieved the desired running persistence during their service period. Previously a bicycle ergometer test was used to measure endurance, but this test was too resource-intensive and contained too many errors. The 3000-meter running test is viewed today as an indirect assessment of a soldier's physical form, although one does not have sufficient research to substantiate this. There is also doubt that this test provides an accurate picture of maximal oxygen uptake (Bahr, Hallen, & Medbo, 1991; Dale et al., 1979).

Discussion

If we compare the before mentioned physical tests with the thinking that physical requirements are easier because of available assistive technology, we can state that the demands of war for the modern soldier has been reduced. Sverre Bratland (Boe, Kjørstad, & Werner-Hagen, 2012) who during WWII was a platoon leader in a British military unit wrote that even the most "well-educated" soldiers also became affected psychologically and tired during the war. Bratland (1954) also stated that the physical condition was crucial as to whether you broke down or not. On the other side, McD Sookermany (2008) claims that there is reason to assume that the demands of today's soldiers are at least as large as before. He speaks here about the demands of robustness, i.e. a physical hardiness (Aandstad & McD Sookermany, 2008). When one reads that; "The Norwegian Army should educate and train individual soldiers in the conflict environment it operates in - both nationally and internationally. It is a goal for the Norwegian Army to be equipped with personnel and units that can cope with major stresses and simultaneously solve missions" (GIH, 2007a, p. 4, authors translation). When seen against the statement that it is essential to give the individual soldier and unit the necessary basic physical skills that will enable them to make the right decisions and solve both mandatory and unforeseen military tasks, one start to grasp the importance of physical training (NIH/F, 2006).

A change in the demands of war in modern operations

Something that underlines the increased complexity of the modern battlefield it is that the modern soldier is no longer evaluated only on defined military matters, but also on the ethical and moral standards found in society. Success for Norwegian soldiers is no longer seen as only what is obtained in combat, but also in accordance with the ethical and moral standards in the Norwegian civil society (GIH, 2005). This is supported by Borkhus (2006) in what he writes about the character of war. He argues that when society changed, the Norwegian Armed Forces organization, equipment, and not least how the

conduct of operations also changed. This also changed the military profession, since the core is to master the most complex operations, i.e. combat. Borkhus further describes today's conflicts as more complex, and confirms that the character of war and thus the demand of war have changed. As an example of this change, in maneuver warfare with a complex situation picture, one is dependent upon speed to win. Speed relates to situational awareness and the physical and psychological available resources. We can say that this indirectly impose greater demands on the individual to perform in this type of operations. This also changes the demands of war, i.e. the requirements to cope with combat.

A new challenge for soldiers in current operations is the weight of the equipment that soldiers use in operations and in combat. To train soldiers to carry this extra weight is a crucial factor for how well they will cope (Knapik, Reynolds, & Harman, 2004). This affects the physical demands placed on soldiers in the direction that it has become more difficult to be a soldier today. If one only looks at the physical requirements, they have become harder for the soldier.

To return to the demands of war, Hjellset (2003) writes that in conventional warfare the soldiers' physical capacity and performance is seen as an operational constraint in any military organization. Hjellset shows that previously physical capacity was decisive for operational capability. McD Sookermany (2008) argues that sport is part of the military legacy, since it is logical that the soldier depends on their body to perform. Throughout history, physical form has been regarded as a prerequisite for a good army and thus also for a good soldier (GIH, 2007b). Marshall (1947) supports this when he argues that it is essential to maintain a healthy body as a soldier faces the demands of war.

Moreover, Marshall argues that willpower and physical strength is something that goes hand in hand. Without a sufficient physical capacity, one will not have an equally strong willpower, and both of these will have to be present to survive in combat. If a soldier does not function in combat, the unit will lose the battle. Although Marshall's book is from WWII, it shows us that soldiers of all times will have to have a trained body to survive in combat. It also shows that the basic principles of the demands of war are the same, since a satisfying physique must be present. Experiences from WWII was that training and education had to be realistic, and the content of the training had to be in line with the demands of war. This means that the education of the single soldier and physical robustness is part of this.

The introduction of the reformed Norwegian Armed Forces with its focus on international operations has probably changed the ideal of what it means to be a good or skilled soldier. The Norwegian Armed Forces have gone from a focus where the task was to create power in a battle, to the ability to create tempo as the main focus. This change is also supported in that the BME (Säfvenbom & McD Sookermany, 2008) is desired to anchor the training in the Norwegian Armed Forces in a more scientific perspective in the wake of this shift of focus. In today's soldiers, a greater range of skills is demanded and the individual has become more independent (GIH, 2005, Skaret, 2006).

Is the physical training in the Norwegian Army relevant when compared to the demands of war in modern operations?

Dyrstad (2006) points out that all activity that involved some form of physical activity in the Norwegian Armed Forces was only nine hours a week during basic training and five hours a week during the remaining part of the initial service. This says a lot about the low priority of physical exercise in the military. This means that one has to more aware of other arenas where one can train the soldier's physical capacity and this is highlighted in the BME concept (Säfvenbom & McD Sookermany, 2008). In addition, the soldiers want to influence what they do with their time while serving in a unit (Skuggedal, 2006). This can be said to be one of the biggest challenges. The consequence of educating soldiers to master a wide range of tasks and to fulfil a number of demands is that this affects the quality within the whole spectrum, leaving you with less time to do each thing well.

An important part of being able to measure a soldier's physical robustness are the physical tests. The Norwegian Armed Forces uses several different tests such as strength exercises measuring dynamic muscular strength and all tests that have a defined minimum (Hjellset, 2003). This is something that does not corresponded to other nations' experiences of what is important in strength. Both the Americans (U.S. Department of the Army, 1998) and the Danish (K. Kristensen, personal communication, February 24, 2009) highlights explosive strength and endurance strength as important.

The purpose of the tests used by the Norwegian Armed Forces is to measure physical fitness and progress in the soldiers. Considering that the tests do not reflect the demands of war as tests in other nations do, is the thinking wrong? Dyrstad (2006) argues that even if the exercises are general and involve multiple muscle groups, where each is appropriate for military activity, they are good tools to provide indications of how muscle properties are improved. Hjellset (2003) partly agrees, but argues further that when one tests the maximum dynamic muscle strength in standardized tests as measuring devices, such as one does in Norway, these tests set high demands on technical performance.

A technical execution must be practiced specifically and thus performance is dependent upon technique training. A further critical point is that the Norwegian Armed Forces tests are exercises that can be performed in different ways, which undermines the validity of the tests (Hjellset, 2003). Today's 3000-meter running test is seen as the indirect goal of physical fitness, although one does not have sufficient research to substantiate this. One may wonder if this test gives the Norwegian Army what it need. In addition, for the individual soldier it takes time to be able to perform well during the tests. Therefore, if the tests are not relevant to the physical characteristics and the skills one would want in a soldier, then the training is a waste of time. As a sign of change in Norway, the Telemark Battalion in the Norwegian Army has adopted training programs from the Danish military. The reason for this adoption was that the training introduced in the Norwegian Army is not aimed at the physical rigors soldiers expose themselves to during operations. This can be seen as a sign that the most professional unit in the Norwegian Army is in the process of learning and adapting their training to the demands of war. This shift in focus the Telemark Battalion regarding physical training also corroborates

well with the finding that aggressiveness training is important in order to face the rigors in combat (Boe & Ingdahl, 2017; Boe & Johannessen, 2015). The reason for this is that there exists a clear link between aggression and the ability to exercise physical effort.

Conclusion

The research question in this article was the following: *Is the current understanding of physical training in the Norwegian Army relevant for the demands of war in contemporary military operations abroad?* In an attempt to answer our research question, we have discussed three factors: 1. Has the physical demands of the soldier changed when one looks at the demands of war of modern military operations? 2. Is the Norwegian Army's viewpoint on physical training relevant compared to what other nations have experienced? 3. Is the physical training in the Norwegian Army relevant, compared to the demands arising from participating in modern military operations?

The first challenge is that that the Norwegian Army does not seem to learn fast enough. Other nations have made their experiences from operations, operations that are physically demanding, have made changes in their views on training and thus also their specific training and their physical requirements. Their experiences are just as relevant for the Norwegian Army. Especially the Danish military experiences we think are relevant for the Norwegian Army. This since we are culturally similar and our armed forces are relatively equal, in both capacities and sizes. The two principles of "bottom up" and "train as you fight" is appropriate in relation to how other nations also look at their training. However, the challenge in Norway is that this is not enough reflected in how the Norwegian Army conducts physical training. Both these principles highlight the robustness and realism as important, and here we think the Norwegian Army still has more work to do.

At the same time the demands of today's operations has become harder physically for the individual soldier. An example of this is Knapik, Reynolds, and Harman's (2004) issue around equipment weight. Another factor in this is the requirement for physical and mental capacity in order to cope with combat. The speed of operations is higher today and therefore one is dependent on more capacity to be faster and to make the best decisions in order to win. Since the physical and mental are so closely associated as Marshall (1947) and McCoy (2007) claims, preparing a soldier physically is even more important today.

Today in Norway we also have a disadvantage with the soldiers entering into compulsory service compared to before. The Norwegian Armed Forces tests skills that are questionable in terms of the values and gains that are provided from the tests. This goes for both strength and endurance. In addition, when measurements show that the time spent on physical training does not lead to the desired results as stated by the Norwegian Army, a conclusion is that the Norwegian Army probably does not achieve what they want with their physical training.

The complexity of the role of the soldier and the Norwegian Armed Forces understanding of the physical demands is hampering the effort to educate Norwegian Army soldiers to be able to cope in domain of war in the

current operations. Whether this is due to a change in priorities or lack of experiences one can only speculate.

However, one can see that the Norwegian Army's view of physical training is changing in a positive direction. Nevertheless, the Norwegian Army is falling behind compared to other nations. This is especially apparent in the physical tests, where the Norwegian selects other skills than other nations say is relevant. The basic idea around physical training in the Norwegian Army does not match how the physical training should be carried out, especially if one looks at other nations' experiences and the BME concept (Säfvenbom & McD Sookermany, 2008). Therefore, we conclude that the Norwegian Army does not train in a relevant way towards meeting the demands of war in modern military operations. A notable exception to this is the Telemark battalion in the Norwegian Army.

Potential practical implications of our findings may include physical education and training of Norwegian Army officers according to the principles used in the Danish military, the U.S. Army, and in the Telemark battalion. On the other hand, we recognize that the validity and reliability of our findings are limited, since we only have investigated what has been found in the different documents. More research into this topic is needed, as the consequences of not educating and training officers to physically cope with the demands of modern military operations could have fatal implications.

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References

- Aandstad, A., & McD Sookermany, A. (2008). Mennesket som basis for militære operasjoner (The human as a basis for military operations). In R. Säfvenbom, & A. McD Sookermany (Eds.), *Kropp, Bevegelse og Energi i den grunnleggende soldatutdanningen (Body, Movement and Energy in the basic soldier education)* (pp. 227-242). Oslo: Universitetsforlaget.
- Asak, T. (2006). Militær erfaringshåndtering – et bidrag til vår lærende organisasjon (Military experience handling - a contribution to our learning organization). In *Prosjekt BASIC – Trening for operasjoner II (Project BASIC – Training for operations II)* (pp. 50-56). Oslo: Forsvaret.
- Bahr, R., Hallen, J., & Medbo, J. I. (1991). Testing av idrettsutøvere (Testing of athletes). In S. Hjellset (2003) (Ed.), *Status og utvikling av fysisk form for et utvalg av norske soldater inne til førstegangstjeneste (Status and development of physical fitness for a sample of Norwegian soldiers during conscript service)* (pp. 17-18 & 58). Oslo: The Norwegian School of Sport Science.
- Boe, O. (2011). How to find leaders that will be able to face and solve problematic decisions in an operational context? Research paper: *Conference proceedings of the 13th International Military Health Conference (13IMMHC)*, 35-42, Faculty of Military Sciences, Netherlands Defence Academy, The Netherlands, April 2011.
- Boe, O., & Ingdahl, A. (2017). Educating monsters with brakes: Teaching soldiers aggression and aggression control. *Kamera Journal* 45(3), 2-30.

- Boe, O., & Johannessen, A. H. (2015). The effects of the role of the group, the role of the leader, the emotional distance to the enemy, and the aggressive predisposition upon killing. *Kasmera Journal* 43(6), 125-144.
- Boe, O., Kjørstad, O., & Werner-Hagen, K. (2012). *Løytnanten og krigen: Operativt lederskap i krig (The lieutenant and the war: Operational leadership in war)*. Bergen: Fagbokforlaget.
- Boe, O., Woolley, K., & Durkin, J. (2011). Choosing the elite: Examples of the use of recruitment, assessment, and selection programs in Law Enforcement Tactical Teams and Special Forces. In P. Sweeney, M. Matthews, & P. Lester (Eds.), *Leading in dangerous contexts* (pp. 333-349). Annapolis: Naval Institute Press.
- Borkhus, B. (2006). Warfighting - med norske øyne og fremtidens briller (Warfighting - with Norwegian eyes and future glasses). In *Prosjekt BASIC - Trening for operasjoner II (Project BASIC - Training for operations II)* (pp. 34-37). Oslo: Forsvaret.
- Bratland, S. (1954). *Avhandling i militær psykologi (Dissertation in military psychology)*. Stockholm: Kungliga Krigshögskolan.
- Dale, Ø., Audunhus, K., Karlsen, K., Jess, W., Berglie, O., Huus, T., Stensrud, A. & Sølvberg, A. (1979). Testutvalg, Fysisk testing i Forsvaret (Test selection, Physical testing of the Norwegian Armed Forces). In S. Hjellset (2003) (Ed.), *Status og utvikling av fysisk form for et utvalg av norske soldater inne til førstegangstjeneste (Status and development of physical fitness for a sample of Norwegian soldiers during conscript service)* (pp. 17-18). Oslo: The Norwegian School of Sport Science.
- Dyrstad, S. M. (2006). *Fysisk form og trening i Forsvaret (Physical fitness and training in the Norwegian Armed Forces)*. Oslo: The Norwegian School of Sport Science.
- Eide, K. (2006). 14 dager i isødet (14 days in the icy wilderness). In *Prosjekt BASIC - Trening for operasjoner II (Project BASIC - Training for operations I)* (pp. 115-119). Oslo: Forsvaret.
- Elstad, J. I. (2010). Spørreskjemaundersøkelsens fallgruber (The pitfalls of questionnaires). In D. Album, M. Nordli Hansen & K. Widerberg (Eds.), *Metodene våre (Our methods)* (pp. 155- 169). Oslo: Universitetsforlaget.
- Forsvarsstaben (2007). *Forsvarets fellesoperative doktrine (Norwegian Armed Forces Joint Operational Doctrine)*. Norwegian Armed Forces Defence Staff: Oslo.
- Forsvarsstaben (2014). *Forsvarets fellesoperative doktrine (Norwegian Armed Forces Joint Operational Doctrine)*. Norwegian Armed Forces Defence Staff: Oslo.
- Garland, R. (1991). The Mid-Point on a Rating Scale: Is it Desirable? *Marketing Bulletin*, (2)66-70.
- GIH (2005). *Prosjekt BASIC - Trening for operasjoner I (Project BASIC - Training for operations I)* (pp. 10-25). Oslo: Forsvaret.
- GIH (2006). *Prosjekt BASIC - Trening for operasjoner II (Project BASIC - Training for operations II)*. Oslo: Forsvaret.
- GIH (2007a). *Hærens utdannings- og tjenestereglement (the Norwegian Army education and staff regulations)*. Oslo: Forsvaret.
- GIH (2007b). *Hærens utdannings- og tjenestereglement vedlegg K: Fysisk trening i Hæren (the Norwegian Army education and staff regulations appendix K: Physical training in the Norwegian Army)*. Oslo: Forsvaret.
- Gjerset, A., Haugen, K., Holmstad, P. & Giske, R. (2012). *Treningslære (Exercise theory)*. (4th ed). Oslo: Gyldendal undervisning.
- Glaser, B., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine.
- Gundersen, K. (2006). British Army perspective on future training for operations. In *Prosjekt BASIC - Trening for operasjoner II (Project BASIC - Training for operations II)* (pp. 25-27). Oslo: Forsvaret.

- Haugen, T. (2002). *Arbeidshefte i utholdende styrketrening (Work booklet on endurance strength)*. Oslo: The Norwegian Military Academy.
- Hjellset, S. (2003). *Status og utvikling av fysisk form for et utvalg av norske soldater inne til førstegangstjeneste (Status and development of physical condition for a sample of Norwegian soldiers during compulsory military service)*. Oslo: The Norwegian School of Sport Science.
- Johannessen, A., Tufte, P., & Christoffersen, L. (2010). *Introduksjon til samfunnsvitenskapelig metode (Introduction to social science methodology)* (4th ed). Oslo: Abstrakt forlag.
- Knapik, J. J., Reynolds, K. L., & Harman, E. (2004). Soldier load carriage: historical, physiological, biomechanical and medical aspects. *Military Medicine*, 169, 45-56.
- Marshall, S. L. A. (1947). *Men against Fire* (pp. 150-175). USA: Oklahoma Press edition.
- Matthews M. D. (2014). *Head strong: How Psychology is Revolutionizing War*. New York: Oxford University Press.
- McCoy, B. P. (2007). *The Passion of Command – The Moral Imperative of Leadership*. Quantico, USA: Marine Corps Association.
- McD Sookermany, A. (2008). Kropp, bevegelse og energi i militære kontekster (Body, movement and energy in military contexts). In R. Säfvenbom, & A. McD Sookermany (Eds.), *Kropp, Bevegelse og Energi i den grunnleggende soldatutdanningen (Body, Movement and Energy in the basic soldier education)* (pp. 66-81). Oslo: Universitetsforlaget.
- NIH/F (2005). *Arbeidshefte i fysisk trening for Forsvaret (Work booklet in physical training for the Norwegian Armed Forces)*. Oslo: Forsvaret & NIH/F.
- NIH/F (2006). *Hele Forsvaret i bevegelse (The complete Norwegian Armed Forces in motion)*. Oslo: FSS/NIH/F.
- Rekkedal, N. M. (2001). *Moderne krigskunst: Militærmakt under omforming (The modern art of war: The military power in transformation)*. Stockholm: Försvårshögskolan.
- Silvera, D. H., & Seger, C. R. (2004). Feeling good about ourselves: Unrealistic Self-Evaluations and Their Relation to Self-Esteem in the United States and Norway. *Journal of Cross-Cultural Psychology*, 35(5), 571-585. doi: <https://doi.org/10.1177/0022022104268389>
- Skaret, K. S. (2006). Det sitter mellom øra – kvalitetstrening av små enheter (It sits between the ears – quality training of small units). In *Prosjekt BASIC – Trening for operasjoner II (Project BASIC – Training for operations II)* (pp. 82-85). Oslo: Forsvaret.
- Skjetne, K. (2006). Treningskultur – hva kan vi lære av toppidretten? (Training culture - what can we learn from top athletics) In *Prosjekt BASIC – Trening for operasjoner II (Project BASIC – Training for operations II)* (pp. 199-203). Oslo: Forsvaret.
- Skuggedal, P. (2006). Kjerneressursene tid, kompetanse og ledelse (The core resources of time, competency and leadership). In *Prosjekt BASIC – Trening for operasjoner II (Project BASIC – Training for operations II)* (pp. 57-63). Oslo: Forsvaret.
- Starrin, B., Dahlgren, L., Larsson, G. & Styrborn, S. (1997). *Along the path of discovery: Qualitative methods and grounded theory*. Lund: Studentlitteratur.
- Säfvenbom, R. (2008). Bevegelsesatferd og motivasjon i militære kontekster (Movement behavior and motivation in military contexts). In R. Säfvenbom, & A. McD Sookermany (Eds.), *Kropp, Bevegelse og Energi i den grunnleggende soldatutdanningen (Body, Movement and Energy in the basic soldier education)* (pp. 122-35). Oslo: Universitetsforlaget.
- Säfvenbom, R. & McD Sookermany, A. (Eds.) (2008). *Kropp, Bevegelse og Energi i den grunnleggende soldatutdanningen (Body, Movement and Energy in the basic soldier education)*. Oslo: Universitetsforlaget.
- U.S. Department of the Army. (1998). FM 21-20. US Army Field Manual 21-20. *Physical Fitness Training*. Washington, USA: Department of Army.

- U.S. Department of the Army. (2015). FM 6-22. US Army Field Manual 6-22. *Army Leadership*. Washington, USA: Department of Army.
- Vaitl, D., Birbaumer, N., Gruzelier, J., Jamieson, G. A., Kotchoubey, B., Kübler, A., Lehmann, D., Milner, W. H., Ott, U., Pütz, P., Sammer, G., Strauch, I., Strehl, U., Wackermann, J., & Weiss, T. (2005). Psychobiology of Altered States of Consciousness. *Psychological Bulletin*, 131(1), 98-127.