

ABSTRACTS

Jorma Jormakka

A FORMULA FOR WINNING AND THE COMMAND AND CONTROL SYSTEM

The article is the opening talk to a discussion of the professors of the National Defence College, the National Days of Military Sciences May 2006. The author was asked to present a "proof" for the formula for winning, while the professors from the other departments were expected to tear down the proof. The starting point was the assumed difference between the ideas of Baron Antoine de Jomini and Carl von Clausewitz. Jomini is often thought to present a mathematical theory of warfare. In the present times the new network centric warfare concept puts the network and the command and control system to a key role. Does this mean that there now is a mathematical way for warfare, can we actually plan military operations in such a precision that the outcome of the war can be predicted? The article investigates what Jomini actually writes in his book and concludes that the ideas of Jomini and Clausewitz are not very different. The mathematical principles of Jomini are actually not mathematical, but strategic or operational art, and comprise of ideas such as the theory of inner lines. Following these principles gives ways to achieve local superiority. A short and far too much simplifying investigation of generals and war chiefs who have seemed to possess a formula for winning shows that in most cases the formula is created by better mobility and coordination of movements in order to reach local superiority. The concept of network centric warfare also gives a way to achieve local superiority by focusing power to selected solution points. As such it is a new form of the old formula of winning and it can have good results in symmetric battles. The countermeasure to this formula for winning has also been known form a long time, and was known to Jomini: the formula does not work if solution points are not given. By avoiding solution battles, if there is enough ground, or the tactics is guerrilla warfare, the war can be prolonged for practical purposes infinitely. This is what we should expect to happen also in network centric warfare. The article lists several other formulas for winning. These were created by many people from the Department of Military Technology during the Technical Belli 2006. The author thanks the inventors. Clearly, many formulas for winning can be proposed and god arguments can be posed to support them. Finally, none of the formulas are fool proof. There are countermeasures and finally the user of a formula for winning most probably fails because the assumptions have changed. The article ends by listing some possible technical weaknesses in the network centric warfare: any of them could be used in drafting countermeasures. As the Department of Military Technology finally did not claim to possess a mathematical way to calculate the end of a war, the other professors did not make special efforts to tear down the proof. The discussion was nevertheless quite interesting, at least to the participants.

Jukka Leskinen

THE NATIONAL MORALE AND INDIVIDUAL FIGHTING SPIRIT

The image of war as a game includes three basic elements: tools, skills and will. This article focuses on the national will for defence and on individual combat motivation.

The base for combat motivation in a reservist army lies on the national will for defence. During the last few years the national states' economical, political and emotional meaning is said to have diminished, which has its own impact on the national armies' mental state, especially on the will for defence. In Finland the situation is solid in this respect. Our attitude climate is in many respects different from the other Northern countries. For example,

the individual values of expressing oneself are valued less and the materialistic values for security and surviving are valued more than in Sweden. In this respect Finns are nearer to, for example, the French than to the Scandinavians.

During the last few years, the term 'social capital' has been popular in the research of the national will for defence. It includes the idea that in a society founded on political and economical agreements there may develop a climate of mutual confidence where people expect that the state will care for the basic rights of its citizens in every situation. This trust may in turn create reciprocal responsibility and give the individual a will to invest something to the society in order to strengthen the feeling of security. This seems to have happened in Finland. Of the Finnish conscripts 96 % consider Finland to be a country worth defending, 70 % of them are proud to be Finns. A new point of view is that more than 50 % of the conscripts identify themselves as Finns and, at the same time, international and European.

Less research has been focused on the individual components of combat motivation like self-respect or life control. Strong life control or a sense of coherence (SoC), protects a person's mental well-being in times of stress. It represents life orientation, which characterizes the positive concept of a person's own possibilities to influence the course of their life. Sense of coherence has three elements – a feeling of comprehensibility, manageability and meaningfulness of life events. Recent research proves that these individual components of the combat motivation and of stress control are not as permanent as they have previously been supposed to be. They can be influenced by good education, leadership and training. In modern warfare an individual fighter's initiative and intelligent professionalism are even more important than before.

Tuija Kuusisto and Rauno Kuusisto

**MANAGEMENT OF NETWORK-ENABLED DEFENCE –
INFORMATION FLOW ASPECTS OF SELF-SYNCRONIZATION**

The shift of military command and control from a heterogeneous environment to cover the management of divergent groups of players, information system services and information has challenged the traditional command and control practices. This paper concerns the management and especially self-synchronization of network enabled warfare from the information flow point of view.

The paper uses a system modeling approach to outline the information flows in Network-enabled Defense (NED). NED is a working title for a concept that uses the principles of network enabled warfare for securing the functions vital to society in Finland. From system modeling point of view NED is an interacting and adaptive social system in space and time. It consists of self-organizing, geographically distributed and interacting adaptive operations and a set of technology enabled, interacting and self-synchronizing network centric operations. A self-synchronizing, network centric operation is arranging its actions in time, space and purpose to produce maximum relative combat power at a decisive place and time. A self-synchronizing operation follows mission and synchronizes its activities with the activities of friendly, neutral and hostile network centric operations of NED. The adaptation and interaction of self-organizing, adaptive operations and self-synchronizing network centric operations lead NED system to evolve.

There is a variety of information flows in NED system and between NED system and the world. Traditionally, the structure of the information flows in military environments has been hierarchical and the distribution of information has been identical to the distribution of authority. However, the impact of Information Age has been the decoupling of information flows from the hierarchical structure. This means that information flows on NED system and its management cannot and do not need to follow only hierarchical structures but a systems of systems structure. The current command and control approaches from most centralized to least centralized are cyclic, interventionist, problem-solving,

problem-bounding, selective control and control-free philosophies. The descriptions of these command and control approaches stresses that information flows are not following the hierarchical structure in the least centralized approaches.

The assumptions for the least centralized approach of management, i.e., self-synchronization, are: Clear and consistent understanding of command intent, high quality information and shared situation awareness, competence at all levels of force and trust in the information, subordinates, superiors, peers and equipments. The requirements and contents for shared situation awareness are studied further in the paper by applying a general model about planning and decision-making. The model supports the categorizing of the contents of information flows. It contains three main categories of information: incoming facts, basic information and conclusions as well as information refining steps, i.e., information process model. It contains the information flows affecting and included in the management of NED. As a result, the paper argues that it is not sufficient that the interacting operations in NED share only parts of the contents of incoming facts. They have to put available information included in the basic information and conclusions categories as well to enable the management and acting in NED.

Karlis Neretnieks
EPÄVARMUDET SOTILAALLISESSA
STRATEGISEN TASON PÄÄTÖKSENTEOSSA

Artikkeli kuvaa eräitä niistä faktoista, jotka tekevät sotilaallisen strategisen tason päätöksenteon tuloksiltaan epävarmaksi toiminnaksi. Perusolettamuksena on, ettei puhtaasti sotilasstrategisia päätöksiä ole olemassa. Strategia on ja on todennäköisesti aina ollut alue jossa sotilaallinen komponentti on vain yksi osa, joskin tärkeä, koko yhtälöstä. Siksi tämä artikkeli fokusoii tarkastelunsa korkean tason sotilaskomentajien kohtaamiin ongelmiin, ei poliittiselle tasolle. Päällekkäisyydeltä ei kuitenkaan voi välttyä. Artikkelin käsittelee viittä tekijää, jotka vaikuttavat sotilaallisen päätöksenteon epävarmuusulottuvuuteen: aikatekijää, tiedustelua, riippuvuutta alaisista, nykyisten operaatioiden kansainvälistä luonnetta ja ylempää päätöksentekotasoa.

Aikatekijä on ehkä tärkein epävarmuuksien muodostaja. Laajat sotilaalliset operaatiot ovat aikaa vieviä ja vaativat pitkiä valmisteluja. Tehtävät päätökset perustuvat oletuksille vastustajan aikomuksista, jotka voivat kuitenkin muuttua ennen kuin omat suunnitelmat pannaan täytäntöön. Aikatekijään liittyvänä ongelmana on tiedustelutiedon kerääminen ja arviointi. Vastustaja voi muuttaa mieltään jos hän saa aikaa harkita tilannettaan uudelleen, mikä saattaa tehdä saadun tiedon vanhentuneeksi. Komentaja on aina riippuvainen alaisistaan. Korkealla päätöksentekotasolla erityisongelmana on riippuvuus esikunnasta. Komentajalla ei ole mahdollisuutta arvioida kaikkea päätöksentekoon tarvittavaa informaatiota, vaan hänen tulee luottaa esikuntaupseereihinsa. Niinpä useimmat asevoimat näkevät paljon vaivaa komentajan tukena olevan yleisesikuntaupseeriston luomiseen. Nykypäivän monikansalliset operaatiot korostavat tätä ulottuvuutta. Monikansallisissa joukoissa ei ole yhtenäistä sotilaallista kulttuuria, ja tämä luo uusia epävarmuustekijöitä komentajille jotka joutuvat luottamaan heille suhteellisen tuntemattomiin upseereihin.

Viimeisenä tekijänä tarkastellaan kysymystä yleimmästä päätöksentekotasosta. Aikanaan useimmat komentajat olivat osa selkeitä ja hallitsevasti kansallisia johtamisketjuja, siinä missä nykyisin on otettava usein huomioon kokonainen kansainvälinen yhteisö. Loppupäätelmänä on, että komentajan tulevaisuudessa kohtaamien epävarmuuksien määrä ei suinkaan ole laskemaan päin, päinvastoin.

Anders Palmgren
PAINOPISTEKÄSITTEEN SOVELTAMINEN JA KÄYTTÖKELPOISUUS
NYKYAIKAISESSA SOTATAIDOSSA

Artikkelin tarkoituksena on problematisoida painopisteen käsitettä nykyaikaisessa sota-aidossa, johdantona laajempaan tutkimukselliseen kokonaisuuteen. Artikkelissa katsotaan, että on perusteita epäillä käsitteen soveltuvuutta nykyaikaisen sotataidon analyysissa. Käsite on osa von Clausewitzin kuvausta Napoleonin tavasta käydä sotaa. Perusajatus on kyetä osoittamaan vihollisen voiman painopiste ja kohdentaa omien voimavarojen hyödyntäminen tähän ratkaisevan taistelun voittamiseksi. Tämä pyrkimys strategiseen menestykseen on hallinnut jo pitkään läntistä sotilaallista ajattelua. Nykyaikaiset sodat kuitenkin poikkeavat tästä ideaalista. Artikkelin epäilykset painopistekäsitettä kohtaan koostuvat viidestä osasta:

1. Teoreettisia rajoitteita syntyy Clausewitzin kahdesta erilaisesta ajatuskehikosta, idealistisesta ja realistisesta, hänen pääteoksessaan *Sodasta*. Käsite kehitettiin idealistisessa kehikossa ja siirrettiin realistiseen, mikä luo jännitteen.
2. Käsite liittyy läheisesti Napoleonin tapaan käydä sotaa. Käsite sopii ratkaisutaistelun ideaan, mutta jos muut osapuolet käyvät sotaa toisella tavalla syntyy rajoitteita käsitteen käyttökelpoisuudelle.
3. Sota on taitoa, ja stereotyyppinen käsitteen soveltaminen ei ilmeisesti tuota parasta mahdollista strategisen tason tulosta.
4. Sodan luonne on muuttunut toisen maailmansodan jälkeen, mikä vaikuttaa kysymyksiin voimankäytöstä ja menestyksestä.
5. Nykyaikaiseen strategiaprosessiin kuuluu jännite. Poliittinen tavoite ei ole aina aivan selkeä, mikä rajoittaa strategisten päämäärien roolia. Näissä oloissa painopisteen löytäminen on haastavaa.

Tommy Jeppsson
TULEVAISUUDEN HAASTEITA STRATEGISEN TASON SOTILASJOHDOLLE
PIENVALTION PERSPEKTIIVISTÄ

Artikkelissa käsitellään kolmea strategisen tason johtamiseen liittyvää ulottuvuutta. Ensimmäinen koskee rajat ylittäviä megatrendejä, joilla on vaikutuksia kansallisten prioriteettien asettamiseen esimerkiksi resurssien niukkuuden vuoksi.

Toinen ulottuvuus koskee yhteiskuntien sisäisiä kehityskulkuja. Todennäköisimmäksi skenaarioksi katsotaan tässä polarisaatio hyvin ja huonommin voivien välillä. Kolmas ulottuvuus koskee tulevaisuutta varten suunniteltavia sotilaallisia kykyjä. Prosessit, proseduurit, esikuntien paisuminen ja kasvava byrokratisoituminen haastavat perinteisen käsityksemme sodasta dynaamisena prosessina.

Näiden ulottuvuuksien käsittelemiseksi sotilasjohtajilta vaaditaan kykyä yhä laajempiin perspektiiveihin. Voidakseen antaa hyviä neuvoja poliittisille päätöksentekijöille ylimpien sotilasjohtajien tulee kyetä tekemään puolustukseen liittyviä johtopäätöksiä maailmanlaajuisista megatrendeistä ja yhteiskunnallisesta kehityksestä. Tämä koskee yhtä hyvin tulevaisuudessa tarvittavia sotilaallisia kykyjä kuin keinoja välttää liiallista byrokratisoitumista. Artikkelissa rajoitutaan tässä suhteessa vain keskeisimpiin kysymyksiin. Pienten valtioiden ja pohjoismaiden perspektiivi katsotaan relevantiksi mm. yleisen voimavarojen niukkuuden johdosta.

Juha-Antero Puistola
STRATEGINEN PÄÄTÖKSENTEKO TOISESSA PERSIANLAHDEN SODASSA

Irakissa edelleen jatkuva sota jakaa mielipiteitä Yhdysvalloissa ja sen ulkopuolella. Samoin tekee Yhdysvallat sotaan johtanut strateginen johto ja päätöksenteko. Aiheen käsittely on usein tunnepitoista ja selkeästi kanta-aottavaa, joten objektiivisen kuvan muodostaminen sotaan johtaneista tapahtumista on toistaiseksi erittäin haastavaa. Historia ja kansalliset ja sisäpoliittiset intressit vaikuttavat kaikkeen päätöksentekoon. Irak oli monesta syystä luokiteltu ainakin neo-konservatiivisissa piireissä paitsi Yhdysvaltain strategiseksi intressialueeksi myös kansalliseksi uhaksi. Useat syyt johtivat George W. Bushin hallinnon sisällä tapahtuneeseen neo-konservatiivisen ajattelun voimistumiseen.

Presidentti Bushin hallinnon päätöksentekoon osallistunut henkilöstö oli lukumäärältään pieni ja sitä hallitsivat vahvat persoonallisuudet, kuten varapresidentti Dick Cheney ja puolustusministeri Donald Rumsfeld. Nämä olivat työskennelleet yhdessä jo presidentti Fordin (1974 – 1977) aikana. Lisäksi Bushin hallinnossa työskenteli useita kokeneita poliitikkoja, joilla vaikuttaa olleen henkilökohtainen Irakin vastainen vakaumus. Syyskuun 11. päivän 2001 terrori-iskujen jälkeen nämä vaikutusvaltaiset henkilöt onnistuivat tehokkaasti korostamaan omaa näkemystään oikeasta toiminnasta Yhdysvaltojen hallinnossa. Presidentti Bushin lähipiirin kokouksissa ei noudatettu tiukkoja muodollisuuksia, vaan kokoukset olivat vapaamuotoisia "sotakabinetin" kokoontumisia. Osittain tästä syystä ja joidenkin huonojen henkilösuhteiden vuoksi hallinnon sisälle muodostui informaatiokatkoksia. Näistä merkittävin oli puolustusministeriön ja ulkoministeriön välillä. Ulkoministeri Colin Powell sai tietää presidentin päätöksestä hyökätä Irakiin muuta hallintoa ja läheisimpiä liittolaisia myöhemmin. Colin Powellilla oli toisaalta merkittävä rooli Yhdysvaltain hallinnon pyrkimyksissä taivuttaa YK:n turvallisuusneuvosto hyökkäyksen oikeuttajaksi ja omien kansalaisten vakuuttamisessa hallinnon toimien välttämättömyydestä. Tiedonkulun ja keskusteluyhteyden katkokset johtivat osaltaan Irakin vakauttamisvaiheen puutteelliseen suunnitteluun. Puolustusministeriö oletti ulkoministeriön toteuttavan suunnittelun, mutta jälkimmäistä ei sisällytetty mukaan operaation suunnitteluun sen alusta asti. Vastaava laiminlyönti tapahtui myös siviili-sotilas yhteistyön suunnittelun yhteydessä. Lyhyesti voidaan todeta, että kaikki operaation suunnitteluun osallistuneet osapuolet kuvittelivat jonkun toisen hoitavan jälleenrakentamisen osuuden.

Yhdysvaltain poliittisen ja Irakin operaation korkeimman sotilasjohton näkemykset tarvittavasta joukkojen määrästä vaikuttavat poikenneen operaation toteuttajien vastavista. Puolustusministeri Donald Rumsfeld ja CENTCOM:n komentaja kenraali Tommy Franks jättivät huomiotta vaatimukset isommasta joukosta. Osittain tästä syystä erityisesti vakauttamisvaiheessa käytettävissä olleet joukot olivat kriitikkojen mielestä aivan liian vähäiset. Mainittu epämuodollinen ja pienessä piirissä tapahtunut päätöksenteko mahdollisti nopean ja tehokkaan toiminnan tilanteessa, jossa valtion johto katsoi joutuneensa hyökkäyksen kohteeksi. Samalla päätöksenteon apuvälineiksi tarkoitettujen neuvostojen ja komiteoiden kenties hyökkäyssotaa vastustavat mielipiteet jäivät pois presidentin tarkastelusta. Yhdysvalloissa on virinnyt laaja keskustelu siitä, käytettiinkö valtion tiedustelukoneistoa tahallaan väärin sodan oikeuttamiseksi. Tällä hetkellä vaikuttaa siltä, että presidentille asti esitetty tiedusteluaineisto oli ainakin osittain varmistamattomista lähteistä ja johtopäätöksiltään hyökkäyspäätöstä tukevaa.

Risto Sinkko
WAR IN MEDIA ERA AND PUBLIC OPINION POLLS –
IF YOU WAGE WAR, BETTER GAIN VICTORIES

This paper discusses the support for the Iraq war and the approval of President George W. Bush's and Prime Minister Blair's actions during the war as presented in public opinion polls. The paper concludes, that the variations of the support measured in public opinion polls occur

simultaneously with victories gained in the war or with bad news, respectively. One conclusion in the analysis seems to show, that changes in people's opinion emerge sooner than during earlier wars (Vietnam War). Prime Minister Tony Blair lost his support from the majority of citizens in about half a year's time after he made the decision to go to the war in Iraq.

The capture of Saddam Hussein chanced the trend for a while, and the support for the war exceeded the limit of majority, but this effect lived only for a short period of time. Parallel to the diminishing support figures was the appearance of the Abu Ghraib prison pictures. One can argue, that a similar effect was due to the long lasting public and media discussion about camp Gitmo at Guantanamo Bay and it's inmates' legal status. In addition changes in public opinion are discussed during the Israel-Hizbollah crisis in Lebanon during the summer 2006 as well as during the uncovered terror plot in UK.

Mika Kalliomaa

**THE FINNISH DEFENCE FORCES IS DEVELOPING
A CONCEPT OF PUBLIC INFORMATION (PI).**

The new concept consists of support of core operations, socialization, profiling and informing. Tasks of the public information organizations are much wider than past. Therefore the organisations have to change and develop their activities. The new concept of the PI is also combined to the concept of information warfare. The support of core operations consist external marketing, internal marketing and work instructions. These are mostly familiar for our organizations. The roles of the actors are lightly changing. There is also needed more professional for marketing. Socialization means induction to work and to organization. This is new task for PI organisations. Mainly the organisation themselves should take that responsibility but public information organization should help them.

Profiling functions are also new task for Finnish Defence Forces PI organizations. Profiling consist a profile of the product and services and a profile of the corporate and manager. These tasks are professional for PI personnel.

Informing is the oldest responsibility for PI. It consist external and internal public relation (PR) and scanning.

Arto Mutanen

ON THE KNOWLEDGE AND SKILL OF A SOLDIER

In military pedagogy, and more generally in war studies, the notion of soldiership has been the subject of extensive discussion. It is possible to consider soldiership from several different points of view. Each point of view provides a different picture of the topic. It is of central importance to systematically develop these different views. In this paper, we will look at soldiership with the help of the notions of knowledge and skill. The activities of a soldier connect knowledge and skill into a whole. The activities of a soldier also suppose wide theoretical knowledge and many kinds of practical skills. The relationship between theoretical knowledge and practical skill is one that merits further study.

The classical definition of knowledge characterizes knowledge as well-justified and true belief. This definition is a good starting point for all discussion on knowledge. The condition of justification of knowledge can be interpreted in several different ways. A dynamic interpretation connects the condition to a process of justification. More generally, dynamic interpretation connects the definition to a process of knowledge acquisition or to methodology. The methodological approach makes it possible to consider knowledge and skills within the same framework.

A technical norm connects knowledge and skill within the context of knowledge. In a sense, the technical norm reduces skills into knowledge. However, it is also interesting to reach a connection within the context of skill. This is made possible by the notion of

inquiry-oriented work. The notion of reflection also plays a central role in this context. Different kinds of interpretations of the notion of reflection open up new paths for thought. This means we will gain new and productive interpretations of soldiership.

Juha Mäkinen

**THE LEARNING AND KNOWLEDGE CREATING SCHOOL CASE
OF THE FINNISH NATIONAL DEFENCE COLLEGE**

Tässä artikkelissa syvennyttään Maanpuolustuskorkeakouluun aikakautena, jolloin puolustusvoimien strateginen oppivan organisaation korostaminen tapahtuu osana kehittyvää suomalaista tietoyhteiskuntaa. Artikkelin perustuu tutkimukseen, jonka päämääränä on edelleen kehittää Maanpuolustuskorkeakoulun opetuskäytäntöjä. Artikkelin kirjoittaja on lähestynyt Maanpuolustuskorkeakoulun nykyisiä opetuskäytäntöjä kaksoishermeneuttisella (käytännön ja teorian vuoropuhelua) tutkivalla lähestymistavalla vuodesta 2000 alkaen. Tutkivan kaksoishermeuttisen prosessin aikana tutkija järjesti vuosina 2004 ja 2005 viisi Kehittämislaboratorioistuntoa, joissa Maanpuolustuskorkeakoulun ainelaitokset olivat edustettuina. Kehittämislaboratorion jälkeen tutkija haastatteli Maanpuolustuskorkeakoulun laajennetun johtoryhmän ja tutkimusneuvoston edustajia. Täten tutkijalle avautui mahdollisuus tarkastella ja nyttemmin herättää laajenevaa keskustelua sotilaskulttuurimme perusoletuksista, opetusmme ja tutkimuksemme nykyisistä haasteista ja ongelmista sekä ihmistieteellisestikin perustelluista kehittämismahdollisuuksista. Artikkelin perustuu everstiluutnantti Mäkinen väitöskirjaan (Japan Advanced Institute of Science) ja se on julkaistu myös Maanpuolustuskorkeakoulun Koulutustaidon laitoksen julkaisusarjassa vuonna 2006 (julkaisusarja 2/2006, tutkimuksia, numero 16).

Mikael Salo

**BEYOND TRAINING ALONE:
THE ROLE OF COHESION MAXIMIZING GROUP PERFORMANCE**

Tämä kvantitatiivinen tutkimus tarkastelee koulutuksen, ryhmäkiinteyden ja suorituskyvyn mittareiden välistä suhdetta varusmiespalveluksen aikana. Tutkimusta varten kerättiin suomalaisia varusmiehiä koskeva aineisto kyselyiden sekä arkistotietojen avulla. Yhteensä 978 miehistön jäsentä sekä 336 ryhmänjohtajaa vastasi kyselyihin palvelukseenastumisen yhteydessä sekä juuri ennen varusmiespalveluksensa päättymistä. Tulokset osoittivat, että henkilöiden sitoutuminen organisaatioon (komppaniaan tai patteriin) sekä ryhmän sisäinen kiinteyden vertaisten välillä olivat hyviä ryhmän suorituskyvyn selittäjiä (mallin selitysosuus oli 25 prosenttia). Toisaalta varusmiestensä itsensä arvioima henkilökohtainen suorituskyky selitettiin parhaiten institutionaalisen (armeriaan liittyvän) sitoutumisen, koulutuksen laadun, alaisten ja johtajien välisen kiinteyden sekä fyysisen suorituskyvyn avulla (selitysosuus oli 44 prosenttia). Varusmiehistä tehdyt suoritusarvioinnit (sotilaspassin arvosanat) olivat yhteydessä ryhmän kiinteyteen, muttei juurikaan koulutuksen haasteellisuuteen tai laatuun. Kokonaisuudessaan tulokset painottavat kahta havaintoa, joita ei ole aikaisemmassa kirjallisuudessa vastaavalla tavalla tarkasteltu. (a) Koulutusta koskevat vastaukset eivät olleet suoraan yhteydessä suorituskykyyn (kuten voisi olettaa); sen sijaan koulutus vaikuttaa välillisesti suorituskykyyn ryhmän kiinteyttä lisäämällä eli koulutuksen avulla parantunut ryhmäkiinteyden lisäsi vuorostaan ryhmän ja yksilön suorituskykyä. (b) Koulutusta koskevat kolme eri mittaria sekä kiinteyden eri komponentit olivat eri tavoin yhteydessä suorituskykyyn eli esimerkiksi informaation ja palautteen lisääminen eristää yksilön ja ryhmän suorituskykyä eri tavoin kuin vaikkapa haasteellinen, vaativa koulutus. Sekä koulutuksen että kiinteyden erillis- ja yhteisvaikutukset pitäsivät tiedostaa ja ottaa huomioon koulutusohjelmia suunnittelussa ja toteutuksessa siten, että sekä sotilaiden toimintakykyä että ryhmädynamiikka pystyttäisiin tukemaan mahdollisimman tehokkaasti.

Juha Martelius
RESEARCH'S CHALLENGES IN THE DEFENCE COMMUNITY

Strategic sector research is one of the main public sector tools and means of strategic development in preparation of the political decision making process. Each ministry should strengthen the weight of research in their strategic planning, leadership and evaluation of the activities of their administration. Research, development, evaluation and foresight form an interactive wholeness together with the strategic decision making process. Research should be future oriented, tightly connected with decision making and directed at wider entities in strategic emphasis areas. The emphasis of the substance areas in future oriented research should be connected with those entities analyzed in the defence community's strategic planning paper, which have significant impact to either political decision making or to the planning of administrative guidelines. The main development lines from the research point of view can be identified as:

- 1) Globalization (of the security environment).
- 2) Rapid advance of technological development.
- 3) Changes in society, culture, values and individuals' ways to think.
- 4) The developing division of labour between private and public sector.
- 5) The increasing vulnerability of the modern day societies.
- 6) The widening spectre of military conflicts.

In the European Union, there is a clear objective to bring together defence and civilian research in order to obtain concrete synergies. The development of the European Union Security Research with tight cooperation with the European Defence Agency is an explicit phenomenon of this line of development. The most significant branches of sciences in the defence research resource wise are natural and technological sciences. Research consists mainly of applied sciences. Defence forces objective is to concentrate research in those areas, where no other actors conduct research and where defence community's own research is indispensable. Another goal is to create a culture between defence and civilian research communities, which takes into account the possibilities of technical research in the long term defence planning and development.

Pekka Toveri, Kim Jäämeri and Auvo Viita-aho
DEVELOPMENT OF MULTINATIONAL AND NATIONAL CAPABILITIES
IN THE MULTINATIONAL EXPERIMENT SERIES

US Joint Force Command (USJFCOM) is one of nine combatant commands in the Department of Defense, and the only combatant command focused on the transformation of US military capabilities. USJFCOM has four primary roles in transformation – joint concept development and experimentation, joint training, joint interoperability and integration, and the primary conventional force provider. Finland has cooperated with JFCOM since summer 2003, when the Defence Forces placed a National Liaison Officer to the Command.

Multinational Experiment series started 2001, and its scale and scope has increased very rapidly. MNE4 was the fourth in a series and it continued to expand the scope of these experiments, and addressed all aspects of effects-based operations in a multinational environment. It was an international experiment which explored the uses of international power (diplomatic, information, military, and economic) to influence the behavior of adversaries. MNE4's participants – Australia, Canada, Finland, France, Germany, Sweden, the United Kingdom, the North Atlantic Treaty Organization (NATO) and the United States, used the entire range of effects based operations (EBO), including knowledge-base development and effects-based planning, execution, and assessment. The participating

nations examined multinational interagency group coordination, multinational logistics, interoperability, information operations and medical support in a coalition environment. The US acted as overall lead for this distributed event with coalition partners having leads in specific concepts and processes. Germany was leading development of Knowledge base development and Information operations, Canada led Knowledge management development, Australia led Multinational interagency group work, France led Strategic context and conflict resolution development and US led Multinational information sharing development.

Finland participated in all areas of MNE4 development. The main purpose was to enhance Finnish capabilities to operate in a Joint Task Force in international and national operations. The aim was to develop especially command and control interoperability and gain knowledge to help develop own training, doctrine, tools and processes. Finland's aim was also to develop national Joint Experimentation capabilities and promote Finnish know-how in information technologies, interagency cooperation and international crises management. MNE4 was successful and many of its results can be used in national capability development. Finland decided to participate also in the next experiment, MNE5. It will study a comprehensive approach (gross government and inter-governmental organizations) to crisis resolution, and will continue to refine and mature selected work begun in MNE4. It will seek to broaden the context of pre-crisis and crisis management by engaging both military and non-military interagency organizations. Additionally, MNE5 will explore efforts to increase interagency interaction with national and international military coalitions and non-military organizations, A primary goal will be to develop an initial capability for uninterrupted, day-to-day involvement across agencies, to support crisis prevention and consequence management activities. The military aspect of MNE5 will continue to use an Effect Based Approach to Multinational Operations as the contextual theme to facilitate military support to interagency operations. The scenario will probably be based on an African scenario.

Finland is aiming to take a larger role in the MNE5. Focus Area where Finland will take lead is Inter Agency information flow. The aim is to improve multinational cooperation and integration between military and civilian authorities and non-governmental organizations by creating common situational awareness. The idea is to take this capability to operators in the field. The Focus Area has developed lot of interest in the MNE community. However, credible development project demands participation of civilian agencies. There the Cabinet Committee on Foreign and Security Policy's decision on August 2006 to widen the participation in the MNE5 also to the other ministries gives a solid ground for larger participation. Cabinet Committee decided also to form a national coordination group led by the Ministry of Foreign Affairs to coordinate the Finnish participation in MNE5. MNE experiments offers an effective way develop and improve future capabilities especially in the field of Inter Agency cooperation and military joint operation command and control.

Pasi Tuunainen

OBSERVATIONS ABOUT THE VALIDITY, USE AND PRESERVATION OF THE FINNISH WAR DIARIES

Many individuals, soldiers or civilians alike, kept their personal war-time diaries. They should not be regarded as official war diaries. In those daily narrative accounts is documented administration, operations and other activities of a military unit. In the Finnish Civil War of 1918 the Whites knew the principles of keeping a war diary but the reality was different. This conclusion seems to also apply to Finnish war diaries kept during the war years 1939–1945. On a general level it can be argued that the instructions to maintain war diaries were not followed. The Finnish Military Archive (FMA) holds close to 27 000 official war diaries and after-action reports dating back to the times of World War II. An-

nually, new war diaries are found or donated to the FMA. War diaries of some units are missing; they were not always even kept, and during heavy fighting some of them disappeared or were captured. In many cases they were started again, but the delay might have had an impact on the content. For the same reason it is of vital importance to identify the background and competence of the keeper. How close the keeper has been to a commanding officer, and has he been in a position to follow closely the latter's actions. Has the keeper had ability to tell the truth about the things he was writing about? Sometimes the keeper could have been reassigned to other duties or he could have gotten killed. The keeper should have been an officer but at a company or battery level the task was usually passed on to clerks or ncos. In HQs the G3 (operations) was responsible for maintaining the war diary.

The attachments to the Finnish war diaries might contain after-action reports, maps and messages. The relevant information may be found among the appendices. The Finnish war diaries are, to a large extent, heterogeneous sources. Some diary entries are very brief where as other might contain elaborate information. The information is often more specific in the diaries of the lower echelons. There is great variation even in the format (from official forms to notepads) and quality. The ink might have vanished or hand-writing is difficult to understand. War diaries rarely contain estimates or opinions, whereas the personal diaries of soldiers (some of them are found in the private collections of the FMA) are often more frank as far as morale or feelings are concerned. War diaries are quite often incomplete documents. In many cases, oral orders or communication are missing. In the midst of fierce fighting it is natural that writing was not a priority.

In the light of the previous, it can be concluded that war diaries are not always reliable source materials. The researcher might not get an accurate picture of the events by reading them. It is possible that references to actions in some entries might not even have occurred. War diaries might be subjective and testify about the view of situation (not actual events). In addition, some Finnish war diaries have deliberately been falsified in order to protect someone's career. The quality of war diaries is dependent upon inspection of a superior. War diaries deposited at the FMA are extensively utilized by historians and genealogists. The fact that war diaries were partly kept for the purpose of history writing should make the researchers cautious and suspicious. Therefore, a researcher must adopt a highly critical attitude towards their content. To overcome the problems outlined above the authenticity of each document should be carefully determined and war diaries of various echelons should be compared with each other and used together with other archival materials (nowadays even with Russian documents) and oral histories.

The principles of keeping of a war diary have not really changed during the past 50 years in Finland. It seems that some sort of indifferent attitude toward keeping of war diaries still prevails among the Finnish military. The future war diary will likely be an electronic version. There is a great challenge ahead to safeguard war diary's weight as evidence, use and preservation for the generations to come. All in all, war diaries have been and still are first-hand records and they will continue be important as historical sources in the years to come.

Aleksi Leskinen and Jami Virta
NATIONAL SECURITY STRATEGY AND NEW DEMANDS
ON THE SKILLS OF OFFICERS

In this article we look at the decisions made in the fields of the science of military leadership and teaching from the perspective of the demands set by a changing national security environment. Traditionally the relation of Russia and the Western superpowers of different periods have had an influence on the security of Finland. The first decade after the Cold War shaped Finland's environment of activities towards a more global direction, and as the number of military threats declined, the meaning of new threats became more marked.

According to traditional thinking, threats on external security have been the primary task that the armed forces have been interested in and prepared for. The complex field of the new threats cannot, however, be controlled only by traditional means of defending an area or by military action. In the future, all means have to be taken into use, and preparation is to be seen as a task that belongs to all authorities.

The meaning of wide co-operation in overall safety and national defence is emphasised in national strategies and programmes. A central part of the selection of means included in the programmes is thus improving co-operation between the authorities (police, customs, border guards, rescue departments and Defence Forces), private security and other actors. Defining how co-operation is improved and society "made safer" set great challenges on the use of resources by the authorities and also on the development of skills in the future. The organisations of the different authorities follow changes in the environment of leadership, and as a part of it they follow how the strategies develop. On the other hand, it can be said that the strategical views and definitions of security are a skill that belongs to all authorities. (YETTS, Arjen turvaa, VNS 2004.) The concept of security is interdisciplinary and can be linked to several different research trends. Defining and interpreting security depend on the environment of operation, the meaning of the existence of the organisation and on the intresses of this existence. On the basis of the demands explained above, understanding the ambiguous nature of the concept of security and the different ways of approaching it can be said to be the central skill of the Defence Forces and the boarder guards. In the future, governing the concept and tasks of security will require a growingly wide range of skills.

In the Defence Forces, defining of the actions of security and leading of security are carried out through demands set by legislation, practice and ordinary life during peacetime. Internal security of the organisation is one of the factors that define how the Defence Forces function, and it has a central value in the fulfilment of the main task of the Defence Forces. According to this train of thought it can be said that the definition of security includes both a safety dimension and a security dimension. The thinking and definitions that the strategy of security action of the Defence Forces includes do not considerably differ from the other points of views on security. The security of the defence forces is based on a holistic view. According to a division of leadership defined by the Department of Management and Leadership at the National Defence College, the skill of leadership requires mastering the leading of people, the organisation of the areas of operation and leadership of facts, that is, mastering the processes of decision making and leadership. According to this model, a leader has to be able to recognise the influence of the organisational culture on general leadership.

In security action, the leader's ability to recognise and utilise multidisciplinary specialists is emphasised. An important element of effective leadership is the leaders' ability to connect the needs of their subordinates and the organisation into objective-oriented action. Leadership can also affect the dominant security culture and the commitment level of the people. The new officer's training schedule, revised in the framework given by the Bologna process, tries to take into account all the previous matters, in order to influence the professional qualifications of officers' and above all to create a security and organisation culture that can answer the challenges set by the period and follows the effective report on defence account.

Iikka Ikonen and Pekka Tuovinen **IMPROVED MUNITION FOR GUNS AND MORTARS**

The paper discusses the possibilities and methods to increase the efficiency of indirect fire by improving the munition. The focus is on gun and mortar munition. General R & D trends can be seen also in weapon system developments. Most improvements are evolutionary but sometimes they are revolutionary, e.g. the introduction of base bleed units or

cargo munitions. The development periods are usually very long and only a small fraction of new products and ideas reaches operational status, because the critical factors costs and benefits have to be taken into account. The conventional high explosive shell is gradually replaced by more effective munitions. The better efficiency attained by increasing accuracy, range and warhead lethality. Accuracy can be improved by guidance, range by base bleed units or rocket assistance and warhead lethality by various cargo munitions. The most promising existing or projected products are discussed in the paper.

With a simple simulation program the effectiveness of conventional HE shells are compared to that of cargo munitions. The target is an infantry platoon in an attack formation. The targets are considered to be soft, so that HE rounds are effective against them. The cargo shell for a gun contains 49 bomblets and 21 bomblets in the case of a mortar bomb. According to the simulation, 3 mortar cargo rounds cause the same amount of casualties (34 %) as 18 HE bombs. In the case of guns, 6 cargo rounds cause slightly more casualties than 18 HE rounds. The results of simulations give rise to rethink artillery and mortar tactics.