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12. ABSTRACT (Maximum 200 words)
The 36th International Applied Military Psychology Symposium was held in Split, Croatia on 11-15 September 2001. Changing Mission for the 21st Century was the theme. The IAMPS 2001 Proceedings includes both abstracts and papers of presentations. Topics include integrating multi-national forces, personnel management issues, quality of life issues, and the selection, retention, and training of military personnel in the face of the emergence of a multi-polar threat environment, professionalization and downsizing of forces, decline in funding, and aversion to personnel casualties and loss.

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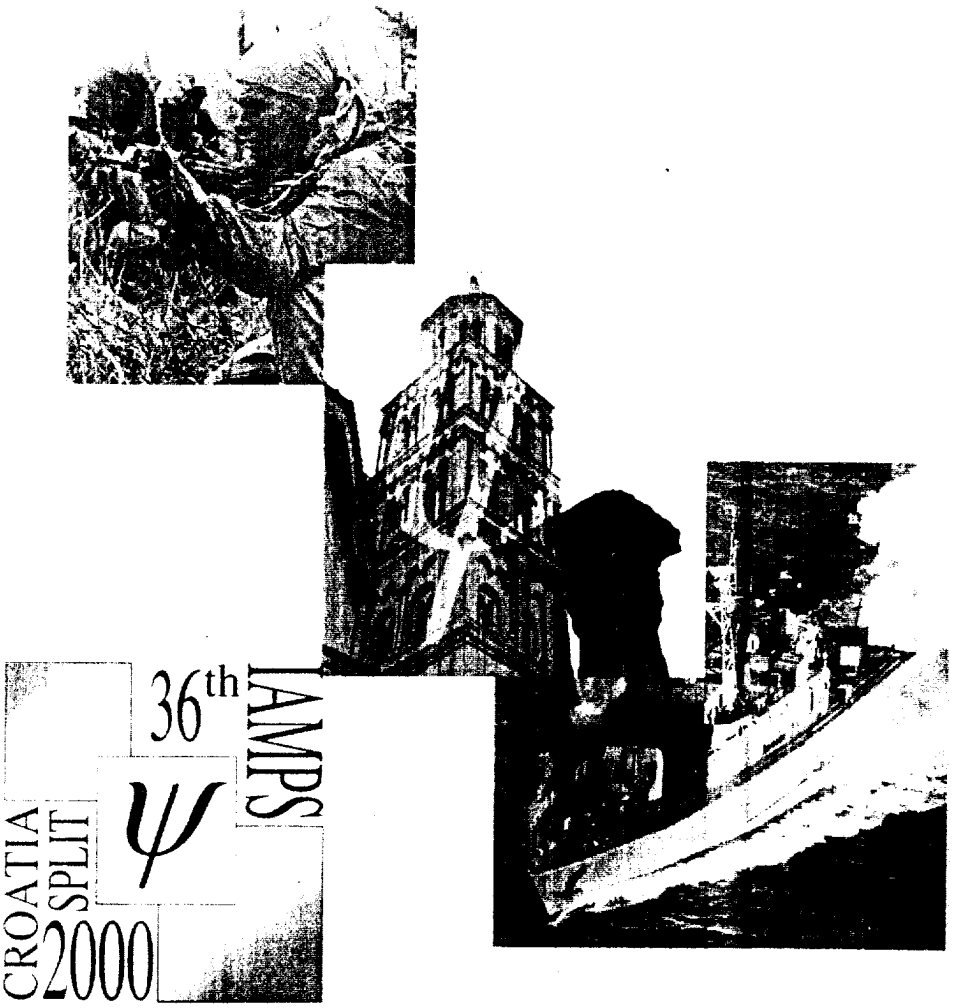

CHANGING MISSION FOR THE 21st CENTURY

36th International Applied Military Psychology Symposium
Croatia, Split 11-15 September 2000

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Commanding Officer,
Office of Naval Research,
International Field Office
Attention: S&T Programs Administrator
223 Old Marylebone Road, London, NW1 5TH

Dear Sir,

please find attached here the Proceedings of the 36th International Applied Military Psychology Symposium. According to the Grant agreement (number N00014-00-1-1086) we are sending to you three copies of the Proceedings.

Collection of all papers for the Proceedings and printing took some time, but we hope that the final result will be useful for all participant and other experts.

As you probably know, immediately after the Symposium we put the materials on the web site (www.morh.hr/iamps), where from those who are interested can download any paper or the entire Proceedings. However, after sending the Proceedings to participants and to some institutions, we still have some hard copies, so if the ONRIFO could use an additional hard copy or can suggest us some other relevant addresses to send them to, please contact us and we will do so.

Just to make sure you have received the Proceedings, we will be grateful to you if you can confirm to us the receiving them by e-mail (tfiljak@morh.hr), fax (++ 385 1 45 67 348) or any other way.

Hoping that you will find the attached Proceedings a useful means for further cooperation, we remain

sincerely yours

Zagreb, 1 October 2001

Republika Hrvatska 53

acting Assistant to Minister of Defense
brigadier
Dušan Viro

Enclosed:
- cited

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SPLIT, CROATIA
11-15 September 2000

PROCEEDINGS

Zagreb, 2001

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PROGRAM

Sunday, 10 September 2000

$15^{00} - 20^{00}$ **Pre-registration**
Hotel Marjan
Obala Kneza Branimira 8
21 000 SPLIT

Monday, 11 September 2000

$09^{00} - 10^{30}$ **Registration of participants**
Dom Hrvatske vojske – Split
Poljudsko šetalište 13
21 000 Split

$10^{30} - 12^{30}$ **Opening of the Symposium**

Navy orchestra: "Croatian sailors" (Z.Runjić)
Major Tomislav Filjak: Announcement

- ***Welcoming address*** – Vice admiral VID STIPETIĆ, Commander of the Croatian Navy

Navy orchestra: "Splitski akvarel"-medley (I.Tijardović)
"Play on" (N.Kalogjera)

- ***Opening remarks*** - FREDERICK PESTORIUS, ONRIFO technical director

Navy orchestra: "Frank Sinatra in Concert" (N.Studnitzky)

- ***Opening of the Symposium*** - ZORAN BATUŠIĆ, Public Affairs and Information Assistant to Defense Minister

Navy orchestra: "ABBA Gold" (ABBA)
"El Bimbo" (C.Morgan)

Opening lectures:

- Major general DARKO GRDIĆ: The Role of the Military in Military Missions in the 21st Century with the Emphasis on Human Factor
- VLADIMIR KOLESARIĆ, President of the Croatian Psychological Association:
  Development of Psychology in Croatia and its Role in Homeland War

$12^{30} - 14^{00}$ Lunch break

$14^{00} - 15^{30}$ Topic: **INTEGRATED MULTI-NATIONAL FORCES**

Chairperson: HERBERT ASCHENBRENNER

- LEVEILLE, LUC - *CANADA*
  Military Unit Effectiveness and Readiness: A Theoretical Framework

- CASTRO, CARL (presenter); HUFFMAN, ANN; DOLAN, CAROL; BIENVENU, ROBERT; ADLER, AMY - *USA*
  Working in the Zone: Maintaining Optimal Readiness in U.S. Soldiers
- TICHY, VLASTIMIL (presenter); KLOSE, JIRI; BARTOŠ, VLADIMIR - *CZECH REPUBLIC*
  Psychologist's Limits as a Member of International Mission

$15^{30} - 16^{00}$ Coffee break
Official Group Photo

$16^{00} - 17^{30}$

- BERNARDOVA, KATERINA (presenter); DANIEL ŠTROBL; SYKORA JAROSLAV - *CZECH REPUBLIC*
  Psychosocial Condition of Czech Soldiers in Kosovo
- ADLER, AMY (presenter); DOLAN, CAROL; BIENVENU, ROBERT; CASTRO, CARL - *USA*
  US Soldier Peacekeeping Experiences and Well-being After Returning from Deployment to Kosovo
- TRUSZCZYNSKI, OLAF (presenter); TERELAK, JAN; TUREK, MARIUSZ - *POLAND*
  Personality of Polish Soldiers and Stress-Coping During Bosnia Peacekeeping Mission
- ARNDT , KLAUS - *GERMANY*
  Management Selection for the State Border Service for Bosnia and Herzegovina

20^{00} - 21^{30} **Welcome reception (Vila "Dalmacija")**

Tuesday, 12 September 2000

$09^{00} - 10^{30}$ Topic: **MILITARY PSYCHOLOGY IN PERSONNEL MANAGEMENT**

Chairperson: IGOR VODYANOY

- MASAKOWSKI, YVONNE* - *USA*
  Optimized Manning for the 21st Century
- BOSS, PATRICK - *SWITZERLAND*
  Psychological Aspects of Recruitment: Conception for the Swiss Army XXI
- LESCREVE, FRANCOIS - *BELGIUM*
  Recruting for the Military when the Economy is booming
- DA SILVA, JOAO; LUIS, RICARDO; MATOSO, TIAGO (presenter); SANTOS, CRISTINA - *PORTUGAL*
  Portuguese Military in Volunteer and Contract Situation: Reasons Why They Quit
- VAN ZEVENBERGEN-SNEL, BEATRICE (presenter); REULINGS, PETRA; BOS, MIEPKE - *NETHERLANDS*
  A New Method of Job Allocation for Subsequent Functions

$10^{30} - 11^{00}$ Coffee break

* The paper by Dr. Masakowski, absent for urgent personal reasons, was presented by LCDR Dylan Schmorrow

$11^{00} - 13^{00}$

- JETTEN, HANS - NETHERLANDS
  Organisational Commitment and Turnover among Military Personnel
- GRAESSER, ARTHUR - *USA*
  Question-driven Explanatory Reasoning about Devices that Malfunction
- JEPSEN, MIKKEL - *DENMARK*
  Surveying Performance Appraisals
- HAYSMAN, KATE - *UNITED KINGDOM*
  Attitude Patterns of Royal Air Force Personnel in Relation to Retention
- PERTEA, GHEORGHEA - *ROMANIA*
  Psychological Predictors of Success for Romanian Officers Applying for Defence Attaché Position
- COURT, MICHAEL - *UNITED KINGDOM*
  Societal Factors, Attitudes and Desirable Behaviours of Military Personnel

$13^{00} - 14^{00}$ Lunch break

$14^{00} - 15^{30}$ Topic: **QUALITY OF LIFE IN THE MILITARY**

Chairperson: SANDRA JOVANOVIĆ

- MACKEWITSCH, REINHARD; BIEHL, HEIKO (presenter); VOM HAGEN, ULRICH - *GERMANY*
  The Bundeswehr deployments in the KFOR-Mission - An analysis of the soldiers´ situation
- MYLLE, JACQUES - *BELGIUM*
  Quality of Work Life: a Case Study
- VESNA, BUŠKO (presenter); KULENOVIĆ, ALIJA - *CROATIA*
  Coping With Stress During Military Basic Training
- BENDER - HORVAT, SANJA (presenter); ZELIĆ, ANTO; ŠTEFAN, SUZANA - *CROATIA*
  Procedure of Psychological Autopsy of Suicide Cases in Armed Forces of the Republic of Croatia

$15^{30} - 16^{00}$ Coffee break

$16^{00} - 17^{00}$

- KOMAR, ZORAN (presenter); VUKUŠIĆ, HERMAN; TIŠLARIĆ, GORAN - *CROATIA*
  Post-traumatic Stress Disorder in Croatian War Veterans: Incidence and Psychosocial Features
- LYTAEV, SERGEY - *RUSSIA*
  Sensory and Cognitive Disorders in Combatants with Battle Injuries of the Locomotor System
- TRLEK, MLADEN - *CROATIA*
  Traumatic Scene: The Initiation of the Process of Positive Resolution of Traumatic Experiences in Exposed Individuals and Groups

$17^{30} - 19^{30}$ **Sightseeing of Split (Diocletian's Palace)**

$19^{30} - 20^{45}$ **Reception by Mayor of Split at "Diocletian Cellar"**

Wednesday, 13 September 2000

Boat excursion to Split surroundings

Thursday, 14 September 2000

09^{00} - 10^{30} Topic: **POSTER SECTION**

- ZELIĆ, ANTO; TRLEK, MLADEN; TRUT, VESNA - *CROATIA*
  Prevention of Onset and Development of Post-Traumatic Stress Disorder in the Armed Forces of the Republic of Croatia
- SEKULA-GOLUBIČEK; JADRANKA; HORVAT, DARKO; KAČIĆ, LJUBOMIR - *CROATIA*
  Psychosocial Climate Survey Methodology
- TOPIĆ - IBRAHIMPAŠIĆ, FUAD - *CROATIA*
  Computer-Assisted Bonnardel's Sinusoid for Group Administration with Mine-Clearing Personnel
- ŽARAK, VESNA; DENAČIĆ, DIJANA - *CROATIA*
  Composition and Validation of Cognitive Appraisal Questionnaire and Relationship between the Cognitive Appraisal of Stress and some Personality Characteristics of Young Servicemen
- ŠTEFAN, SUZANA; KOREN, BISERKA - *CROATIA*
  Psychological Support and Ventilation Program for Mine-Clearing Personnel
- TRUTANIĆ, VESNA; STRAŽIČIĆ, NIKICA; KOREN, BISERKA - *CROATIA*
  Psychological Support Programs for Pilots of Croatian Air Force
- PAVLINA, ŽELIMIR; KOMAR, ZORAN; FILJAK, TOMISLAV - *CROATIA*
  Psychological Model of Combat Stress
- FILJAK, TOMISLAV; PAVLINA, ŽELIMIR - *CROATIA*
  Psychological Model of Soldier Bravery
- KOREN, BISERKA; ZELIĆ, ANTO - *CROATIA*
  Psychological Prevention of Alcohol and Substance Dependency in the Armed Forces of the Republic of Croatia
- ČEPULO-KOMAR, MAJA - *CROATIA*
  Women in Air Force

10^{30} – 11^{00} Coffee break

11^{00} – 13^{00} Topic: **ORGANIZATION AND MILITARY PSYCHOLOGY**

Chairperson: PIERRE AZOULAY

- FRISE, ERNST; LOHWASSER, CHRISTIAN (presenter) - *AUSTRIA*
  The Austrian Military Psychology Doctrine
- MASAKOWSKI, YVONNE* (presenter); HARDINGE, NEIL - *USA*
  Comparing the Cognitive Decision-Making Strategies of US and UK Naval Sonar Operator

* The paper by Dr. Masakowski, absent for urgent personal reasons, was presented by LCDR Dylan Schmorrow

- BORADJIEVA, ELENA (presenter); GATEV, GATIO - *BULGARIA*
  Examined Interactions in a Changing Military Educational Environment
- FRADIQUE, FERNANDO; PAMPLONA, AURELIO (presenter) - *PORTUGAL*
  Commanding VS Leading: New Challenges in Our Days
- MYLLE, JACQUES - *BELGIUM*
  Perception of leadership characteristics among students of the Royal Military Academy and young career officers

$13^{00} - 14^{00}$ Lunch break

$14^{00} - 17^{30}$ **Workshops**

- Room 1

Integrated Multi-National Forces

Moderator: ULRICH VOM HAGEN

- Room 2

Military Psychology in Personnel Management

Moderator: DYLAN SCHMORROW

- Room 3

Quality Of Life in the Military

Moderator: JACQUES MYLLE

- Room 4

Organisation and Military Psychology

Moderator: ELENA BORADJIEVA

- Croatian Navy Medicine Institute

Psychological Functioning under Extreme Conditions

Moderator: MIRKO DRENOVAC

Introduction: DRENOVAC, MIRKO (presenter); NADAN PETRI - CROATIA: A Study of Impact of Hyperbaric Pression on Dynamics and Efficiency of Complex Mental Processing

$15^{30} - 16^{00}$ Coffee break

$16^{00} - 17^{30}$ **Workshops - CONTINUATION**

20^{00} **Official dinner (restaurant ACI-Adriatic)**

Friday, 15 September 2000

$09^{00} - 10^{30}$

Chairpersons: ŽELIMIR PAVLINA, ZORAN KOMAR, TOMISLAV FILJAK

- VOM HAGEN, ULRICH - *GERMANY*
  The German-Netherlands Corps after Five Years: The Culture of a Multinational Unit*

*Planned for session on Monday, 11 September , but re-scheduled due to author's delayed arrival

Reports from Workshops

- Integrated Multi-National Forces
  Presenter: ULRICH VOM HAGEN
- Military Psychology in Personnel Management
  Presenter: ARTHUR GRAESSER
- Quality of Life in the Military
  Presenter: JACQUES MYLLE
- Organization and Military Psychology
  Presenter: KRISTINA POLLACK
- Psychological Functioning under Extreme Conditions
  Presenter: FUAD TOPIĆ - IBRAHIMPAŠIĆ

Plenary discussion

$10^{30} - 11^{00}$	Coffee break

$11^{00} - 12^{00}$ **Concluding remarks**

- Rear admiral CRAIG DORMAN - *USA*

$12^{00} - 12^{15}$ **Closing of the Symposium**

- ZORAN BATUŠIĆ, Public Affairs and Information Assistant to Defense Minister

$12^{15} - 14^{00}$	Lunch

OPENING SPEECH OF THE COMMANDER OF CROATIAN NAVY FOR THE 36th IAMPS-SPLIT 2000

Vice-admiral Vid Stipetić

Dear Mr Batušić, assistant defence minister of the Republic of Croatia, dear admiral, ladies and gentlemen, dear participants of the 36th IAMPS (International Conference of Military Psychology), dear guests of Croatia and visitors to this beautiful ancient town on the Adriatic coast.

I am not going to discuss the subject of your study or work but merely point out a few interesting personal experiences, in my opinion connected to the subject of the conference.

As an experienced officer of the Navy, I realised how important each member of the crew is. Good personal relations, fellowship, maintenance of marine equipment and following of the same objective are of uppermost importance for working on a ship successfully. The well-trained crew of our Navy incorporates a thousand-year naval experience of the Croatian people and is a pillar of marine defence. Due to a fewer number of the crew members and naval personnel and their long-term education, every man counts. We are oriented primarily to men, their needs and progress, regardless of their rank and duties, which is the main principle of my work as well as that of my staff members.

I would also like to share with you my experience related to the importance of human resources and motivation. Fighting for their independence the unarmed Croatian people defeated the enemy who was technically better equipped. The war ended five years ago through a victorious operation liberating a third of the entire state territory. Croatian people and loyal Croatian citizens, and me too, are proud of that fact.

However, the Homeland war brought us not only freedom but all the negative consenquences of war as well. Our next task is to improve the system of psychological support to our war veterans, the wounded and sick defenders as well as to all other victims of the War (refugees, families of the dead, children without parents and others). I think that it is necessary to take care of those victims as long as we achieve the high level of their personal functioning and integrating in the society. Until then we have to be persistent in providing support and help.

The following millenium will bring great changes to military organizations. High technology in a military system represents a factor that is more and more important in the development of equipment. The military has increasingly been assigned tasks "other than war" - peacekeeping operations, emergency intervention in earthquake, fire and flood situations and the like.

In my opinion the military is a sole large goverrnment organisation equipped and capable to react promptly in such situations. Generally speaking, the extended scope of missions to trained the troops for, in conjunction with higher training standards demanded by new equipment require additional adaptation and continuous work from the military personnel.

As several social gatherings have been planned on this occasion, we will have more opportunities to talk and exchange ideas.

Also, I would like to point out again the beauty of this city, its friendly people and I hope that you will have and take with you nice memories spent in Split and Croatia.

Finally, I wish you successful work at this conference. Have a nice time here. Thank you!

IAMPS OPENING REMARKS MONDAY, 11 SEPTEMBER 2000 SPLIT, CROATIA

Frederick Pestorius

Mr. Batušić, VADM Stipetić, MG Grdić , DR Kolesarić and Dr. Dorman,

Good morning. I am Mike Pestorius and I am the technical director of the Office of Naval Research's International Field Office in London. I am very pleased to be here with you this morning and I anticipate a lively and informative week of discussions and interactions. The Office of Naval Research has supported the International Applied Military Psychology Symposium for many years and we are pleased to have the opportunity to provide support this year.

My intention is to speak very briefly this morning. We have a full agenda and accordingly I won't take much of it. Additionally, I am not a psychologist. My background is one of service in the US Navy where I served as a submarine officer for 27 years and more recently as the director of a large university laboratory that was primarily concerned with defense related R&D. I would like to talk for a few minutes about the Office of Naval Research. The Naval Research Laboratory, which preceded ONR and is now joined with it, was founded in the 1920's at the suggestion of Thomas Alva Edison, the great inventor and founder of General Electric. He saw the need for systematic technology insertion into the Navy. NRL had an early impact on many naval developments and stood the Navy in good stead when World War II began. During the war, there was a real mobilization of America's universities and labs in support of the war effort. Dr. Vannevar Bush, one of the principal leaders in this mobilization, summarized this effort in his report, "The endless Frontier" in 1945 and shortly thereafter the US Congress created the Office of Naval Research or ONR as we usually refer to it. ONR has undergone many changes and reorganizations over its lifetime and time certainly does not permit me to go over those changes today. But let me give you a few measures to help you size this organization. ONR has about 700 people of whom about half are scientists and engineers. It's budget is about $1.5b. The Naval Research Laboratory, also located in Washington DC, serves as ONR's corporate lab. It employs close to 3000 people. The mission of ONR is to be the Navy's portal into national and international science and technology. We work on S&T from basic research, sometimes called "blue sky" research, through prototype demonstrations. The goal of this work is the provide affordable options for a technologically superior Fleet and Marine Corps - in the US, the Marine Corps is an integral part of the naval force, maintain the health of naval unique science and technology areas, and assure technical awareness across the vast expanse of current science and technology. We do these things by maintaining a vigorous discovery and invention program in basic research and development balanced with delivery of new capabilities to the naval forces and exploitation of emerging technology from our universities, industry and laboratories.

It is certainly accurate to note here that only a decade ago, the Navy and its laboratories led many areas of national technology. Microelectronics, computers, space-based communications and the internet are examples of areas that saw their initial development in a military or naval environment. That observation is markedly less true today. The majority of US and international R&D no longer happen in military labs; rather it occurs in industry and universities. Moreover, whereas 20 years ago 70% of the world's research was done in the US, now 70% is done outside the US. ONR is acutely aware of these facts and accordingly is increasingly looking to non-naval and international sources of new technology. This trend, of course, coincides with the worldwide trend to look for commercial off the shelf solutions (COTS as we call them) to naval needs. I don't intend to debate the merits and problems of COTS here; all I intend is for you to realize that the navy is looking very widely both in the US and internationally for new technology ideas.

One of ONR's principal ways to build awareness of international R&D and participate in these developments is through its International Field Office of which I am the Technical Director. The main office is located in London and we have smaller offices in Tokyo, Paris and Singapore. I have a science staff spread over these offices of about 20 people whose expertise range from human factors engineering to ship construction. We conduct liaison visits with

international scientists and then directly fund three programs involving these scientists. These programs are: the VSP where we will fund short visits usually (but not always) to the US usually related to a scientific collaboration; the CSP where we fund conferences and workshops outside the US (this conference is an example of this funding mechanism) and the Naval International Cooperative Opportunities in Science and Technology Program (NICOP) where we directly co-fund research projects that typically link an international institution or laboratory with a US counterpart for collaborative research. The ONR International Field Office supports basic and applied research and technology demonstrations through these programs. We have a web page, which I will make available during the week, that provides the procedures for obtaining funding from these programs.

I'd now like to turn to the issues that face this conference and will occupy our time together this week. The program is full of talks that we will hear on integrating multi-national forces, personnel management issues, quality of military life, and the selection, retention, and training of military personnel. Why are these issues coming to the surface with such urgency now in all of our militaries? I believe that there are four basic reasons being faced by most modern armed forces that are driving these issues. First, the end of the bipolar cold war has made the military/political environment much more complex and uncertain. It is not clear to any of us what will be the next task for our military forces. I spent most of my 27 years of active Navy service involved in antisubmarine warfare and ballistic missile patrols. We knew what the likely task was, trained endlessly to meet this task, and achieved a high level of proficiency. Today's warriors don't have the luxury of that focus. Instead, they have to be prepared for a wide range of tasks. Second, we have seen the emergence of smaller, professional armed forces in most countries. Technology and the general lowering of the probability of large scale warfare has meant that we can employ smaller, better equipped and trained forces. The recruitment and retention of these personnel in the face of increased training demands and the pull of a vibrant civilian marketplace in many of our countries make personnel issues of paramount importance. Third and closely related to the professionalization of forces, is the general decline in funding support for defense that we are all facing in varying degrees. Our societies, which supported large cold war forces, simply want to direct available resources more broadly in areas such as medicine, education and social security. Support for the military will continue but smaller budgets are a reality that is probably here to stay. That fact means that to build an effective force means that we need a smarter, better trained force. Finally, the general aversion and unacceptability of large-scale casualties even in warlike situations in many countries, dictate that to the maximum extent possible, we minimize the number of people going in harm's way. These four reasons, the emergence of a multi-polar threat environment, the professionalization and downsizing of forces, the decline in funding, and the aversion to personnel loss mean that we have to do better at recruiting, retaining, rewarding, training, motivating and supporting our personnel. In short, we want the very best young people that our societies produce to consider a career in the military much as they consider careers in other attractive fields. Operating the complex, computer-based machinery of warfare is no less intellectually challenging than performing surgery, arguing in a law court or running a dot corn company. We cannot allow our forces to be handicapped by inadequate personnel resources. Additionally, professionalization of these forces means that we must attract the people we need in sufficient numbers and then keep them beyond their initial contract. This set of issues is a challenge for every armed force represented in this conference. My anticipation is that many of the talks in this conference will directly address this set of interlocking issues.

Again thank you very much for the opportunity to address you this morning. I wish all of you the very best for the success of your individual participation in this important conference.

THE ROLE OF THE MILITARY IN MILITARY MISSIONS IN THE 21st CENTURY, WITH THE EMPHASIS ON HUMAN FACTOR

Major general Darko Grdić

I INTRODUCTION

If we set to analyse the types and forms of military missions organized and conducted worldwide over the last 55 years (i.e. since the end of the World War II), we still would not have a basis reliable enough to define precisely the dominant form of future military activities. Our world changes day by day, and huge technological improvements and new media have made various informations available to millions of people, including also individuals and groups prone to cause crises and violence. That is why prediction and reliable planning of military missions in the oncoming century is a complicated task.

Still, judging by our experience, the future will probably be characterized mostly by deployment of armed forces of the democratic community in the so-called "operations other than war" (MOOTW), whose principal forms and basic conditions of conduct will be discussed in this paper. The conditions of conduct of the operations imply a desired profile of their participants (commissioned and non-commissioned officers respectively, soldiers and civilians), as well as main principles of preparation and execution of future missions. Many people continue to have doubts and uncertainties, especially military professionals unused to new, unspecified and vaguely defined forms of military deployment. This paper will address some of those uncertainties.

II DEFINITION OF EXPECTED MILITARY MISSIONS IN 21st CENTURY

Military Operations other then War have been a dominant form of military mission organized and conducted by militaries of the democratic countries (primarily USA and NATO members) over the last 55 years. Except for several warfare episodes where those militaries took a direct part (Korea, Vietnam, Iraq and Yugoslavia), their far more extensive deployment was in various "non-military"campaigns. Although we are not able to predict the future, we can agree with the anticipation that it will remain the major form of military mission in the 21st century too. Expected variations will have to do with technological innovations, cultural differences, religious influences, uneven global dispersion of main life resources and the like.

To conclude, we could list the assumed modalities shared by the majority of future military missions:

a) PEACE OPERATIONS

In view of a number of potential crisis spots still present in the world, we can anticipate implementation of all types of peace operations in the time ahead: support to diplomacy (peacemaking, peace building and preventive diplomacy), peacekeeping operations as well as peace enforcement operations.

b) HUMANITARIAN ASSISTANCE

Quite frequently, due to complicated relationships in an area and endangered safety for humanitarian organizations, it is impossible to organize humanitarian assistance without military support. This is to be expected in the future too. A famous statement by Dag Hammershold, the former General secretary of the United Nations, that peacekeeping is not a job for soldiers, but only soldier can do it, applies also to the safety of humanitarian operations.

c) COMBATING TERRORISM

Combating terrorism operations are most probably the operations bringing greatest surprises in the oncoming century. Forms, operational methods as well as the choice of possible targets of terrorism are growing more sophisticated and unpredictable aided mostly by available state-of the art scientific and technological tools.

d) COUNTER-DRUG OPERATIONS

Easy and quick money coming from drug trafficking continues to attract criminal groups from countries where drugs are produced or where their circulation runs more or less freely. The problem of drug trafficking is conditioned primarily by corrupt governments in democratically underdeveloped countries, whereas rich and at high democratic level states are the main market of final products. Also, the supply and demand principle permanently serves to extend the problem, not to resolve it.

e) LIFE RESOURCES PROTECTION OPERATIONS

Life resources protection operations have mostly been executed as humanitarian support operations; however, the time ahead could bring regional conflicts over access to critical life resources. It primarily concerns water as one of strategic resources in the future, but other resources could become vital too and cause conflicts between countries and social groups.

f) COMMUNICATIONS AND INTERNATIONAL TRAFFIC

Communications and international traffic protection operations are undertaken occasionally to prevent regimes in certain countries from blocking circulation of people and goods. For the international community protection of the right of use of airspace, roads and sea routes is not a novelty. What is new are the efforts by different organizations and individuals to block or make impossible the free use of the Internet - a global communication network providing millions of useful programs and contents. International law enforcement service and expert teams have so far addressed the problem, but it is difficult to predict what might happen in the future.

g) COMBAT OPERATIONS

The fact that in a classification of the kind combat operations occupy the end of the list bears carries a message. Although armed forces in all countries are primarily trained for armed operations, today's reality has imposed other priorities, in the form of the aforelisted operations. The international community bodies (United Nations primarily) work by the principle of peaceful settling of crisis situations, and not of classical military operations. The possiblity of uncontrolled isolated initiation of military operations is present all the time, but not in the countries with democratic tradition and clearly defined civil-military relations.

III PRINCIPLES OF PLANNING AND OF CONDUCT OF MILITARY OPERATIONS

None of the aforelisted operations can be planned or conducted without complying to certain principles of preparing. The principles are numerous and various, and in this paper I will briefly describe the following: objective; prediction; prepairedness, coordination, security and legitimacy.

The objective: is worth special consideration. Correctly and clearly defined goals will have a motivating and directing effect on the mission participants. Well-defined means clear, reasonable and correctly ranked goals. Clear goals help build cohesion among the mission participants, whereas vaguely defined goals create confusion, divert the efforts and thus worsen the relationships and lead to conflicts. Reasonable goals will facilitate motivation, whereas the unrealistic will have a discouraging and eventually disabling effect. Correctly selected and ranked goals will

contribute to efficiency and the speed of task execution. Also, correctly defined goals imply that they have been determined, preferably in written form, which is especially important in a hierarchical organization as the military is.

Prediction implies defining all conditions that could affect the course of military mission. This means that prediction should embrace not only factors directly involved in the mission execution, but also all side-circumstances which can in any way determine the outcome, such as necessary logistics, manpower rotation during the mission, equipment maintenance and the like.

Preparedness for mission includes a wide range of material, technical as well as individual and group preparations. In this context I will focus on the human factor. Adequate and timely preparation implies familiarization of all participants of a military mission with the principal goals significant for the mission in general. One should not leave out individual goals, even more numerous and different, set by individuals or smaller groups included in the mission and reflecting their preferences and expectations related to their involvement.

Coordination serves to build desirable relationships between and within segments of the mission. They make the framework for the tasks but do not guarantee their effectiveness, as the same tasks are not always performed in the same way. Effective implementation of a task requires coordination of efforts by all participants of the mission, which is a responsibility of commanders, i. e. officers in charge of different organizational levels. Coordination has to be achieved horizontally, within an organizational level, and vertically, from the top level downwards.

Security is a critical principle of preparation and execution of a military mission. Military missions in the future contain many and various risks. While the risks involved in classical war operations are obvious, Military Operations Other than War also contain considerable safety demands for their participants, such as unmarked minefields, diversions, sabotages and other forms of guerrilla warfare, use of children in armed attacks, epidemies, extreme climate conditions in the conflict area and the like. Security prepairing requires due attention. Incidents involving disabling and deaths of mission participants as a rule adversely affect the moral of the others, and often lead to redefining, i. e. reducing previously set goals, or even termination of the mission.

Legitimacy is very important too and especially in international military missions, as they demand accordance of legal norms of different countries. Along with legal norms, it is often necessary to be able to accept and correctly interpret cultural characteristics of the countries or regions in question. Mission participants have to be assured that it is legitimate and justified as it will help dispell their doubts and reinforce determination to execute mission goals and tasks.

Along with the principles listed, there is a number of other ones, which however will not be discussed in detail (unity of effort, restraint, initiative, agility, synchronization).

IV DESIRABLE CHARACTERISTICS OF MILITARY MISSIONS PARTICIPANTS

Regardless of how the principles are planned and valued, it is well-prepared soldiers and other personnel that will decide on the outcome of any mission. It is impossible to define the profile of participants of future military missions in a unambiguous way or by an existing pattern. However, experience does help to delineate some desired characteristics of future missions manpower.

Training makes the first and probably the most important segment of the desired profile. Training element becomes even more complex in view of specific requirements it has to meet. Military training is a relatively defined entity. Military science changes rather slowly, with some basic principles remaining unaltered for

decades or even centuries. The exemption is the development of new technologies systematically introduced into the military, which calls for adjustments in military training. The system thus remains relatively hermetic. On the other hand, in democratic countries the military is an organic part of the community. Trainedness for previously listed missions of the future makes another demand for the training system. Training should therefore be based on the civilian educational system and supplemented with specific military skills. Such an approach would in the future prepare military personnel to better understand different social problems and relationships they might be invited to deal with. In this way future military personnel would at the same time achieve the required level of military skills to be able to meet demands inherent in missions in the future.

Once the task of appropriately educated and trained personnel is solved, military management is faced with the next, and that is **-motivation**. Motivation field still has not been searched out, despite the many theories that exist on it. Are motives inherent in military personnel (soldiers, officers, NCOs) or they are to be found in the community, unit or command? Is it the material factor that influences the decision to join a particular mission or organization? Does the education or intelligence play a role in one's motivation? We are expecting some of the questions to be discussed at this international symposium too.

Next field in the line is that of **attitudes**, bringing on new problems. In what way will an individual react to various incitements from his environment? What attitude is he/she going to take towards other members of the unit and what towards local residents in the deployment area? How will he/she take different situations such as wounding or death of a peer, or of a subordinate individual or of a superior? How will an individual react to himself/herself, to his/her own acts and characteristics? There is another important problem that decision-makers are faced with. Namely, it is well known that attitudes are resistant to changes, especially if they exist for a longer period. This is the problem faced by the militaries of the countries in transition period from one political system into other.

At this point the author intended to bring forward a few more segments of the desirable profile of future mission personnel, such as biological and physical status, psychological characteristics, combat readiness of a participant, although without engaging to explain or analyse them. Even though desirable characteristics of future missions participants can be defined rather precisely, there still remain some doubts and problems to face in their training; without clear answers.

For instance, is military profession going to disappear due to modified tasks and responsibilities?

How are we to face the discrepancy between the need for trainedness for combat on one hand and dominant Military Operations Other Than War on the other?

What is to be done in case of likely failure of the mission without the support of "classic" military equipment, the use of which is limited or even prohibited?

How are we to solve the real or invisible sources of problems in mission implementation (e. g. control over natural resources, use of water and food, illegal circulation of diamonds or drugs, overcoming religious differences, different types of monopolies)?

In what way are we to establish an optimal co-operation and co-ordination relationship between civilian and military personnel of the mission?

In what way can we get participants of the mission attain the needed level of understanding of international situation critical for its success?

V CONCLUSIONS AND RECOMMENDATIONS

From the discussion we can conclude that Military Operations Other Than War will continue to the dominant type of military missions in the future too. The modalities described explain the nature of the missions only in part, as it is impossible to make a precise and detailed prognosis of all problems and crisis situations that might occur world-wide. However, as "classical" military operations are decreasing in number, new forms of deployment emerge that have to meet the future less familiar demands.

The principles of planning and implementation of missions are growing in number and diversity too. Only a few of them have been discussed in this paper, mostly those shared by many different missions, without engaging in a detailed and a comprehensive review of the principles.

The key issue is that of the type of soldier needed in the missions. Regardless of actual type of mission, as a conclusion future mission participant has to have wide educational background, able to rely on technological achievements, motivated and ready to respond to each situation in a timely and appropriate way. He/she is also expected to have required psychological and physical characteristics, be able to adapt to new situations, and to have understanding of civil-military relations, and the like. Obviously, even when these requirements are met, some problems still remain open, with no precise answers available.

Therefore, military operations in future require consistent and committed preparation for participation in missions of the kind. Lessons learned must be exchanged and supplemented as the conditions vary too. The training system must be improved, which does not necessarily mean complicated, but rather simplified. Focus on mission should be made a priority, as regardless of some shared general principles, each mission is specific in itself. Finally, concrete planning and conduct of a mission must prove precisely that humans make its central concern and condition of success.

THE DEVELOPMENT OF PSYCHOLOGY IN CROATIA AND ITS ROLE IN THE HOMELAND WAR

Vladimir Kolesarić

President of the Croatian Psychological Association

My present task is to show, or briefly sketch, the development and the present situation of Croatian psychology, and, on general level, the development and present situation of military psychology in Croatia.

The course of development of psychology in Croatia was basically the same as the course of psychology development in most European countries. Before the I World War psychology was part of philosophy and pedagogics. Books and papers which according to their content belonged to the field of psychology were written by philosophers or pedagogues. Professional psychology comprised only some information about mental life for children and youth enrolled in schools for teachers or students of educational academies. Nevertheless, it is of interest to note that at the very end of 19th century (1900), two volumes of the book titled "Experimental psychology" were published in Zagreb, and that Elza Kučera got her Ph.D. in Switzerland in 1909, and after her return to Croatia, continued to work in experimental psychology.

Psychology in Croatia, as an independent discipline, in today's sense of the term, was founded after the First World War by Ramiro Bujas. Ramiro Bujas was a student of University of Graz, where he also got his Ph.D. At that time at the University of Graz psychology was taught by Alexius Meinong and Vittorio Benussi, so Croatian psychology originated from the best what European psychology of that time had to offer. Ramiro Bujas founded the Laboratory of Experimental psychology in 1920 at the Institute of Physiology belonging to the Medical School in Zagreb. A few years later (1929.), when the Chair of psychology was opened at the Faculty of Philosophy, the laboratory, already as the Institute of Psychology, joined the chair of psychology at the same faculty.

Ramiro Bujas established psychology as an empirical and experimental science, based on firm, clear and nonspeculative data. Such approach to scientific and professional psychology, implanted by Ramiro Bujas in all of us, was kept during the whole developmental course of Croatian psychology.

The concept of psychologists' education in Croatia, established by Ramiro Bujas, in fact anticipated the later widely accepted model of psychologists' training. This model, conceived by American clinical psychologists after II World War and known as "Boulder model" of psychologists' education, is still considered the best there is. In other words, there is no known model which produces better educational results. This model is actually a scientist-practitioner model, because it offers knowledge and skills necessary for research as well as for professional practice.

The training for a psychologist in Croatia takes four years and can be obtained at three universities - in Zagreb, Zadar and Rijeka. Psychology is at all this three universities organized as an independent department of the Faculty of Philosophy. The diplomma obtained at the end of the studies is at the same time also a license which enables the owner to practice psychology or work as a professional practitioner. This is, of course, an outdated way of getting licensed. We hope that this will be changed for the better by the legislative regulation, i.e. by the law establishing requirements for the practice of psychology which will hopefully be passed by the Croatian Parliament this fall.

The professional training of psychologists at all three already mentioned universities is very similar, so I will illustrate it by presenting the curriculum of the Department of psychology in Zagreb. In the first and second year there are mainly fundamental or general courses, like Perception and memory, Learning, thinking and intelligence, Emotion and motivation, Special practice in experimental psychology, Biological psychology, Statistics for psychologists, Psychometrics etc. The third and the fourth year of study include Developmental psychology, Social psychology, Clinical psychology, Educational psychology, Work psychology, Psychology of children with special needs, Psychopathology. Along with these

obligatory courses, students may choose among some forty elective courses, among which are e.g. Psychological assessment of children, Psychological counseling, Clinical neuropsychology, Psychophysiology of sleep, Psychology of pain, Consumer psychology, Organizational psychology, Ergonomics, Forensic psychology, Applied social psychology, Treatment evaluation, Educational psychology of pupils with learning disabilities, Educational psychology of talented students, Health psychology, Counseling psychology in times of crisis, Clinical interview, Psychological aspects of new technologies, Psychology of persuasion and marketing, Psychology of religiosity, Military psychology, Sport psychology, Social skills in interpersonal relations, Working with alcoholics and other substance abusers, etc.

Thus the training is organized in such a way that the first two years emphasize the general psychological education combined with knowledge and skills in psychological methodology (one of the prominent features of our education in psychology), and the senior years are devoted more to the applied aspects of psychology. The education ends with the degree report presented at the final examination. The degree report is in fact an autonomous empirical research of a problem the student has chosen with the consent of his/her mentor. Each student has to do the research, data analysis and its interpretation by him/herself, and has to write it in the form of a brief dissertation thesis (i.e. it includes *introduction, problem, method, data analysis, discussion, and conclusions*).

Our undergraduate training in psychology (in Croatia) does not include any kind of specialization which is however available at the graduate level. Psychologists may specialize in occupational/organizational psychology, clinical psychology, educational psychology and vocational guidance. Postgraduate studies include a Ph.D. training program too, which is quite new. Postgraduate studies exist only in Zagreb. (Traditionally, one could have obtained his/her Ph.D. degree through a special procedure which included having the MA degree in the first place).

Research activities of Croatian psychologists are mostly concentrated in the departments of psychology at universities (Zagreb, Zadar, Rijeka) and in a couple of institutes employing psychologists as research fellows. I would like to point out that psychologists all over the world are research-oriented, mainly due to the fact that psychology is still a young science with a lot of opportunities for research of all kinds. Croatian psychologists are 'no exception to the rule', so most of them, even the 'hard practitioners", engage themselves in some scientific or professional studies.

As the Department of Psychology in Zagreb was the cradle of scientific work in Croatian psychology, I will try to illustrate this work by means of a short description of the current research activities going on at this Department. There is no doubt, however, that the areas of studies as well as the main approaches used are similar for all Croatian psychologists, which makes this outline more or less representative.

Research activities of Croatian psychologists are carried out in six areas.

1. Psychophysics and psychophysiology of sensation. This is the oldest area of scientific endeavor achieved by Croatian psychologists, introduced by Ramiro Bujas and continued to the present times by Zoran Bujas and many other psychologists. Zoran Bujas did most of his research, and especially the studies by which he became famous worldwide, in the field of taste sensation. Other studies in this domain focus on methodological issues of establishing quantitative attributes of sensation; various measurement problems of intensity of sensation; the possibility of using simple reaction time as an indicator of the intensity of sensation; questions about the stimulus context's influence on the measures of functional level of various sensory systems.

2. Investigation and measurement of human abilities. One of the outstanding research activities of the Department of psychology in Zagreb and many psychologists outside of it is the exploration of the structure and nature of human abilities, and the development, validation and evaluation of ability tests. Zoran Bujas initiated and for many years led the development of numerous cognitive tests, some of which are in standard use all over Croatia, including the Croatian Armed Forces. Mirko Drenovac, psychologist in Croatian Army, has developed a CRD battery which is being used for various purposes, from research to practice. Among other investigations in this field, the study of time-sharing ability, done by members of the Department of psychology, should be pointed out.

3. Studies in personality psychology. Current research in this field focuses mainly on verification and testing of new models and personality theories using correlational, i.e. factorial and similar approaches.

4. Investigations of psychosocial phenomena. Earlier studies in this domain comprised analyses of voters' behavior, exploration of determinants of public opinion, and investigation of sources and distribution of influence in work organizations. But research of traditional issues of experimental social psychology, such as social facilitation, the influence of other persons' dominant thinking, prosocial behavior, change of attitude was not neglected either. There were many studies of psychosocial climate and a lot of elaborate work on development of scales for its measurement and exploration of attributions.

5. Psychology of work and work activities. During the 1950s and 1960s an elaborate project of human work was carried out, led by Zoran Bujas and in collaboration with the Institute of Medical Research in Zagreb. This project, combining behavioral, electrophysiological and phenomenological research methods of outstanding quality, resulted in numerous papers, well received even outside our country.

There have been field studies as well which involved analyses of accident data and job fluctuation, evaluation and validation of numerous assessment tests and questionnaires used in vocational guidance and selection; several surveys of adjustment to night work and air conditioning of working premises; attitudes towards traffic accidents and recently, spurred by transition, studies of work incentives and their alterations in times of social changes.

6. Exploration of psychosocial consequences of war. The suffering and pain of people during and after the Homeland war forced psychologists to venture into a new field of work and investigation. In the first place Croatian psychologists engaged themselves in organizing and offering psychosocial help to war victims and survivors. Whenever possible, they tried to collect data which could lead to some new understanding and would help them as well as other helpers gain some new insights into psychological mechanisms at work. They tried to establish a better foundation for efficacious psychological help applicable not only to war victims, but to victims in general. These efforts have brought about numerous published papers, booklets and books, as well as 4 Ph.D. and 7 MA theses, and 35 degree reports at the Department of Psychology in Zagreb.

Croatian psychologists publish their scientific works in various journals all over the world, and, of course, in a few journals published in Croatia. Since 1994 exists ***Review of Psychology***, a journal with an international Editorial Board, published in English. It is edited by the Croatian Psychological Association and published by "Naklada Slap". *Review of Psychology* publishes semiannually original articles concerning all topics in scientific and applied psychology. The emphasis is on empirically based articles although theoretical, methodological and review papers, critical surveys, as well as open-peers commentaries are also welcome. The articles have to be of interest to the entire psychological community, and especially to the Alps-Adria psychologists' community.

The newest Croatian journal is ***Contemporary psychology***, which is the official edition of Croatian Psychological Association, published also by "Naklada Slap". *Contemporary Psychology* publishes mainly theoretical and empirical psychometric papers. This journal, of course, is published in Croatian language.

Before the II World War there was in Croatia an attempt to apply psychology in practice by establishing Vocational Guidance Counseling Center, which among other professionals also employed psychologists. After the II World War applied psychology in Croatia experienced vigorous growth, especially in clinical and industrial psychology.

Today there are approximately 1500 psychologists in Croatia. Some 80 psychologists are part of psychologists education, i.e. they are working as university teachers (in Zagreb, Zadar and Rijeka). Other 70 are working at different faculties and research institutes. The rest are employed in various settings, as is the case in other parts of the world. Most of them (approximately 600) work as clinical psychologists in medical settings; some 180 are employed in day-care centers, elementary and high schools. Some psychologists work in marketing firms, police forces, penal system, etc., and some have their own, private counseling service. For the time being there are only few industrial psychologists, because most factories and companies are not doing so well, while economically sound enterprises have employed psychologists.

Thus, for example *Pliva*, the leading pharmaceutical industry in Croatia, has about twenty psychologists. Some of our colleagues are still working with war survivors and returnees.

Membership in the professional association of Croatian psychologists - Croatian Psychological Association - is open to every psychologist with a diplomma in psychology. Thanks to the initiative of Ramiro Bujas, Croatian Psychological Association was founded in 1953, and is today an umbrella organization for all psychological associations in the country.

As is the case with other professional organizations, in the organizations where they are employed psychologists are mainly engaged in some professional issues, for the most part in sections organized in various applied domains of psychology. Thus, there is a Section of clinical psychology, Section of educational psychology, Section of pre-school psychology, Section of work and organizational psychologists, Section of forensic psychology, Section of psychologists working in vocational guidance, etc. The section producing and publishing the greatest number of professional and research papers is the Section of military psychologists.

Croatian psychologists organize each year the Conference of Croatian psychologists, which is the place and time where psychologists can present their professional and research activities and their results, as well as discuss their professional and trade issues. The Section of military psychologists has on each Conference a special program within which they present their yearly scientific and professional output (i.e. that which is for public presentation).

Figure 1: an example of program at the symposium of Croatian military psychologists (at the 6th Conference of Croatian Psychological Association).

VI CROATIAN PSYCHOLOGISTS CONFERENCE - DUBROVNIK 1998
VI MILITARY PSYCHOLOGIST SYMPOSIUM

PROGRAMME

Thursday 3 pm, 19 November 1998
Hotel "Excelsior", hall B
moderator: Želimir Pavlina

OPENING SPEECH

Asssessment of Psychosocial Climate in Military Units, by Zlatko Jeličić and Boris Milavić, Department of Military Psychology, Public Affairs and Information Division, Ministry of Defence of the Republic of Croatia, Zagreb; Croatian Navy, Split

Examining Psychosocial Climate in Professional Brigades Commands - by Jadranka Sekula Golubiček. Darko Horvat and Boris Hudina, Armed Forces of the Republic of Croatia - 1st Army Corps

Metric Properties of Croatian Military Units Working Morale Questionnaire, by Zvonimir Majer and Tomislav Filjak, Recruit Training Centre, Požega; Department of Military Psychology, Public Affairs and Information Division, Ministry of Defence of the Republic of Croatia,

Examining Relationships between Personality Dimensions and Intellectual Abilities of Pilot Candidates in a Selectiom Situation - by Andreja Kus. Marin Aničić and Maja Čepulo-Komar, Aviation Psychology Department, Croatian Air Force Aviation Medicine Institute, Zagreb

Personality Characteristics of Recruits and Success in Training - by Vladimira Becić, Armed Forces of the Republic of Croatia - 1.st Army Corps, Karlovac

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Prevention of Suicide - by Viktor Božičević, Public Affairs and Information Section, Army School "Petar Zrinski" Zagreb

Psychological Warfare against Croatian Words -by Želimir Pavlina, Department of Military Psychology, Army School "Petar Zrinski", Zagreb

Croatian Psychological Association organizes, together with the Department of Psychology in Zagreb, the biannual scientific conference *Ramiro Bujas' Days,* and Department of Psychology in Zadar organizes, also biannually, *Psychology Days* in Zadar.

After this sketchy presentation of Croatian psychology, let me take you nine years back, in the year 1991, at the time of aggression against Croatia - which caught us all unprepared. Croatian psychologist were not specifically trained in psychological assistance to war victims and survivors, they however all engaged themselves very quickly in all kinds of psychosocial aid. With the appearance of the first refugees there were already some psychological actions, even booklets intended to offer the first psychological aid. It has been estimated that during the five years of aggression some 600 Croatian psychologists took active part in various endeavors. Some of them are still working to alleviate the psychological consequences of war and are trying to prepare refugees and displaced persons for their return home. It has to be emphasized that although without special training in this domain, our psychologists managed the critical situations quite well and were very successful in offering psychological help. The main reason for their efficient professional work lies in the basic training of psychologists in Croatia. They leave the university well prepared in all the main domains of psychology, especially in scientific and professional methodology. So, some additional self-education enables them quickly to manage successfully relatively new domains of psychological activities.

Croatian military psychologists went through almost the same process. The armed forces of former Yugoslavia did employ psychologists, but their work was kept secret, in fact, in Yugoslav (then National) Army everything was top secret. What's more, their work was completely centralized, therefore at the outbreak of aggression few psychologists knew what military psychology was about. Our knowledge of military psychology comprised some general principles and facts known to us from the history of psychology. Thus, for example, we knew that the I and II World War had immense influence on development of psychology, especially the development of psychological assessment measures. For all these reasons in Croatia the organization of psychological army work upon the outbreak of war had almost zero to start from.

During the war there were about 200 psychologists engaged in military units. The psychological service in Croatian armed forces had to be organized in a way ensuring accessibility of unit psychologists to as many soldiers and commanding officers as possible. The engagement in military formations enabled Croatian psychologists to acquire some knowledge about the organization and functioning of the military in war, and to get an insight into the possibilities and limitations of psychological work in those conditions. This has a special meaning in the light of the fact that almost all Croatian military psychologists came from civilian institutions or have just finished their studies, and had none professional military experience.

The following year (1992) saw the beginning of systematic psychological education for military purposes of rank-and-file and commanding officers of Croatian Armed Forces. Psychologists initiated survey of psychological combat readiness, and introduced the process of psychological selection and classification, and there were already the beginnings of promotion activities. To enhance and extend the training of military psychologists various professional seminars were organized and held during the war. During the Homeland War military psychologists asked their colleagues for assistance in the form of special materials for military purposes, and they themselves produced a number of booklets and brochures for soldiers, for noncommissioned officers and for commissioned officers.

Croatian psychologists were trained in the European and American tradition of psychology, so in organizing and constituting military psychology they mostly used the Western body of knowledge. But the ongoing war and the sanctions imposed on Croatia directed them towards autonomous development too, thus in their system one can discover some, hopefully useful, specific qualities.

In today's organization of military psychology in the Croatian military the main tasks of the psychologists are:

- the evaluation of combat readiness and factors determining it;
- interpersonal relations in military units and psychology of leadership;
- psychological preparation of soldiers for combat;
- psychological selection and classification of military personnel;
- psychological education for military purposes of rank-and file soldiers and commanding officers;
- training of soldiers in practical skills;
- psychological prevention and psychological support for persons in distress;
- psychosocial care, especially for the injured and families of the killed; and
- promotion activities.

The next figure (figure 2) presents the desirable organization of military psychology in Croatian Armed Forces.

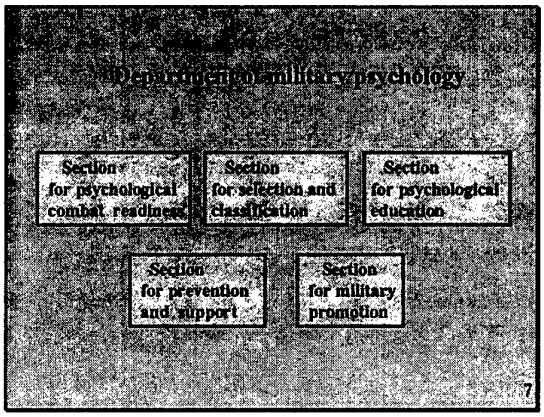
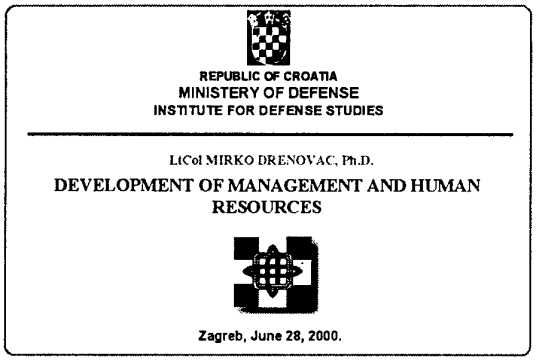


Figure 2. Desirable organization of military psychology in Croatian Armed Forces.

Especially important are inter- and multidisciplinary research projects of the Ministry of Defense, i. e. its special institutions, such as the Institute for Defense Studies, in which psychologists play an essential role (Figure 3: *example of a project by this Institute*).

Figure 3. An example of project of the Institute for Defense Studies.



To summarize the development of military psychology in Croatian Armed Forces, one can state that its successful operations and actions are a result of the following few factors:

First, the quality of basic psychological professional training proved to be very important, because it enabled Croatian military psychologists, even lacking special military knowledge, to quickly adjust themselves to extreme war situations. Basic psychological methods and techniques were quickly and successfully applied in various war situations, and special knowledge and experience were acquired through various forms of intensive training organized during the war.

Second, direct engagement of psychologists in combat units proved justified in several ways. Along with experiencing war activities in the most direct way, psychologists gained respect and trust of soldiers and commanding officers. In order to be able to successfully work and act inside a military unit, the psychologists needed the military, not the civilian status.

Third, creative potentials of military psychologists and their successful functioning in very different fields of professional work (from social, clinical and educational psychology to marketing and psychology of sports) earned them a relatively high degree of professional autonomy.

These conclusions regarding military psychology in Croatia, drawn by one of our major military psychologists (Zoran Komar, MA), generally accord with the statements by Taylor (Henry L. Taylor) and Alluisi (Earl A. Alluisi) contained in their description of psychology in the II World War: "Perhaps even more importantly, military psychologists during World War II applied the methods and knowledge of experimental psychology to military problems of all sorts, and they developed an entirely new technology and field of research and development - human factors engineering, and engineering psychology. The activities and achievements of military psychologists during the war profoundly influenced the rapid expansion and further development of both the science and the profession of psychology in the postwar years and subsequent decades, down to the present day".

These statements justify the notion with which, I hope, all psychologists would agree, that psychology will in an equally successful fashion participate in development of the new role military actions and missions will have in 21st century.

PAPERS

NOTE:

The Proceedings contain papers as handed in by authors themselves and have seen no text intervention whatsoever. They have only undergone changes needed for technical editing of the Proceedings volume (i.e. font, letter size and layout).

US SOLDIER PEACEKEEPING EXPERIENCES AND WELLBEING AFTER RETURNING FROM DEPLOYMENT TO KOSOVO

Amy Adler, Carol Dolan, Robert Bienvenu, Carl A. Castro

The U.S. Army Medical Research Unit-Europe

ABSTRACT

Peacekeeping experiences present both the opportunity for finding meaning in one's Job and the risk for being traumatized. In a study of US soldiers stationed in Germany returning from deployment to Kosovo, soldier experiences with peacekeeping were assessed along with soldier wellbeing. Soldiers (N=1,215) were surveyed using a 15-item peacekeeping experiences scale, the 17-item Post-Traumatic Stress Checklist, a 10-item revised Conflict-Tactics Scale, and three wellness behaviors (alcohol consumption, sick days, and sleep). Findings indicated that soldiers reporting high levels of exposure to peacekeeping experiences reported more post-traumatic symptoms, greater use of conflict-related tactics, more alcohol consumption, more sick days, and less sleep at post-deployment than soldiers with less exposure. Experience with positive aspects of the deployment such as contact with grateful civilians and engaging in community improvement projects, was associated with greater intention to remain m *the military and greater acceptance of the mission's goals. As expected, rank and unit type were key demographic variables in understanding the relationship between experience and wellbeing. The findings suggest the need to target specific units and soldiers for prevention programs.*

Often, post-traumatic stress disorder has been the focus of studies examining the impact of military deployments on soldiers' psychological health (e.g., Wolfe, Erickson, Sharkansky, King, & King, 1999; Flach & Zijlmans, 1997; Litz, King, King, Orsillo, & Friedman, 1997; Lundin & Otto, 1996). Although some studies have addressed other symptom areas (e.g., Johansson, 1997), the link between deployment experience and outcome has primarily focused on post-traumatic stress symtpomatology. The studies that have addressed other symptom categories are inconsistent. Some studies have demonstrated that deployment does not have a significant impact on health outcomes (e.g., Vogelaar, Soeters, & Born, 1997), while others have found that there is indeed an impact (e.g., Deahl, Svirnivasan, Jones, Thomas, Neblett, & Jolly, 2000).

The deployment experience presents soldiers with several different types of stressors (e.g., Ritzer, Campbell, & Valentine, 1999; Bartone, Adler, & Vaitkus, 1998; Vogelaar, et al., 1997). Among the many stressors soldiers may encounter, including separation from family, quality of life reductions, and work relationships, it is the exposure to events encountered during the course of executing the mission (e.g., while on patrol) that are particularly critical for understanding the impact of deployment on peacekeepers. These duties represent not only a potential threat to the psychological wellbeing of peacekeepers, but to their physical wellbeing as well.

In order to better understand the relationship between peacekeeping experiences and soldier adjustment, the present study seeks to identify the kinds of peacekeeping experiences soldiers report on such a deployment and the link between these experiences and various outcome measures. It was expected that elevated exposure to peacekeeping experiences would be associated with higher rates of physical symptoms, greater alcohol use, and less sleep at post deployment.

Method

Procedure

U.S. soldiers from the 1st Infantry Division were surveyed one-to-two months following a six-month deployment to Kosovo in support of NATO's Kosovo Force. Surveys were administered to 1,215 soldiers at their home station, located throughout Germany. Surveys were administered in several company-sized groups. Surveys took about 45 minutes to complete, and participation was voluntary.

In all, 93.3% were male, and 6.7% were female. The sample included 56.5% junior-enlisted soldiers (E1-E4), 35.0% non-commissioned officers (E5-E9), and 7.2% officers. Most of the soldiers were married (53.7%) or single (37.2%); 9.0% were divorced or separated. In terms of unit type, 63.0% were from combat arms units, 28.9% were from combat support, and 7.3% were from combat service support units. Ethnic backgrounds included white (56.7%), African-American/Black (23.7%), Hispanic (10.5%), and other (9.1%).

Survey

Demographics. Several survey items addressed demographic questions, including gender, rank, ethnicity, unit type, and marital status.

Peacekeeping Experiences Scale. The Peacekeeping Experiences Scale (PES) consisted of 20 items describing events that peacekeepers may experience. The events ranged from having to exercise restraint while patrolling to being shot at. Response options for each of the experiences were "no, did not experience it" and "yes, experienced it", with "no impact" "a little impact" "moderate impact" and "extreme impact." The peacekeeping scale was adapted from one used by the US Army Medical Research Unit-Europe during a longitudinal assessment of troops deployed to Bosnia.

Physical Symptoms Scale. The Physical Symptoms Scale (PSS), used in several studies conducted by the Walter Reed Army Institute of Research (e.g., Bliese, Escolas, Christ, Castro, 1998; Halverson, Bliese, Moore, & Castro, 1995) consisted of 22 common physical symptoms (e.g., headaches, intestinal upset, back problems) rated on a 4-point scale (not at all, a little, often, and very often). The PSS sum score was composed of the number of items endorsed as having occurred often or very often.

Wellness Behaviors. Two wellness behaviors addressed the amount of alcoholic drinks consumed in the previous week and the number of hours slept on average per night the previous week.

Results

Peacekeeping Experiences Scale

The dichotomous (i.e. no/yes) responses to the PES were subjected to a 3-factor analysis following a visual examination of the scree plot. A principal component extraction with an oblimin rotation resulted in three factors that explained 58.6% of the variance. The factors were a 5-item factor "body handling and physical devastation," a 6-item factor "threats to self," and a 10-item factor, "peacekeeping patrol." The item loadings on each factor are presented in Table 1.

Table 1

Peacekeeping Experiences Scale Item Loadings on Three Factors

	Factors		
Scale Item	1	2	3
Being in an accident	.57		
Being attacked/ambushed	.74		
Being taken hostage	.77		
Seeing dead or seriously injured Americans	.58		
Having to aid in the removal of unexploded land mines	.62		
Being shot at*	.56		
Seeing the physical devastation	.63		
Seeing dead bodies or body parts		.84	
Handling or uncovering dead bodies or body parts		.76	
Smelling the stench of decomposing bodies		.79	
Witnessing an accident which resulted in serious injury or death	.67		
Witnessing hostility between the former warring factions	.72		
Patrolling areas (or riding in areas) where there were land mines		.66	
Having hostile reactions from civilians you were trying to help		.80	
Disarming civilians			.80
Having contact with traumatized civilians			.82
Witnessing hostility over property or boundary disputes		.84	
Having to exercise restraint while patrolling			.85
Seeing children who were victims of war			.65
Needing to police or manage civilians in chaotic or unpredictable conditions		.85	
Being shot at*			.58

*Item loaded on both factors.

Note: Factor 1 was "Body Handling and Physical Devastation," Factor 2 was "Threat to Self," and Factor 3 was "Peacekeeping Patrol."

There were demographic differences in the way soldiers experienced the various factors. Men reported more exposure on all three factors than women, and soldiers in combat arms reported more exposure on all three factors than soldiers from other units. NCOs reported more exposure to body handling and threats to self than did the other rank groups.

Besides the three factors, the PES was analyzed by creating a group of high-scoring soldiers (defined as experiencing 10 or more of the PES items) and a low-scoring group (defined as experiencing fewer than 10 items). About half the group of soldiers were in each group (52.0% and 48.0%, respectively).

PES and Health

Soldiers who scored high on the PES reported significantly more physical symptoms on the PSS sum scale at post-deployment than those who scored low on the PES (2.4 vs. 1.5,

t(1192)=4.71, p<.001). More soldiers who scored high on the PES also reported getting minimal hours of sleep at post-deployment (defined as 5 hours of sleep or less) than soldiers who scored low on the PES (49.2% vs. 34.2%, χ^2 [1, N=1,165] = 26.68, p<.001). These patterns were consistent for both Combat Arms and non-Combat Arms units. Also, combat arms enlisted soldiers who scored high on the PES reported greater use of alcohol at post-deployment than combat arms enlisted soldiers who scored low on the PES (7.7 drinks in the previous week vs. 4.9, respectively), t(542) = 2.69, p<.01.

Discussion

High numbers of peacekeeping experiences during the Kosovo deployment were associated with decreased physical wellbeing 1 to 2 months following the return of soldiers to home station. These experiences, even when measured in a relatively simple manner, demonstrated a consistent association between greater exposure to experiences encountered on a peacekeeping deployment and decreased wellbeing.

In this study, wellbeing was conceptualized as encompassing physical symptomatology. Both alcohol drinking and minimal sleeping have previously been associated with reduced cognitive reasoning and thus suggest that exposure to peacekeeping experiences is important in understanding not only the health of the soldiers but also military readiness in general.

We recognize that the data analyses reported here are incomplete. For instance, the link between the three subscales of the PES and the psychological and physical health outcomes were not examined. Also, a more detailed analysis of the important demographic variables such as gender, military rank, and unit type should be conducted. These analyses are in progress. One may argue that the findings may not apply to all peacekeeping operations. Further, these findings may not even be relevant for other types of military operations such as humanitarian or combat missions. This limitation, while potentially important, is inherent in all studies of this type.

Furthermore, results suggest that soldiers and units reporting relatively high rates of peacekeeping experiences could be targeted for specific prevention efforts. For example, units with high rates of peacekeeping experiences could receive additional anger control or alcohol awareness courses. The results from the study suggest several points for intervention as well as future research and analyses. These follow-up studies will be a key component to developing a refined understanding of the impact of peacekeeping deployment on soldiers. Such an understanding has the potential not only to help soldiers returning from deployments but also to enhance soldier and unit readiness for future operations.

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MANAGEMENT SELECTION FOR THE STATE BORDER SERVICE FOR BOSNIA AND HERZEGOVINA

Klaus Arndt

Psychological Service of German Armed Forces

ABSTRACT

In Bosnia-Herzegovina, governmental structures are being established with the support of the United Nations (UNMBiH). This includes the formation of a stale border service (SBS) *which is to protect the state border and check freight and passenger traffic to the border. The implementation of the SBS as the state police force took place on 13 January 2000. It is subordinate to the Ministry for Communication and Civil Affairs. The politically appointed leadership is formed by a triple presidency (one director, two deputies) in which the ethnic groups of Bosniacs, Serbs and Croats are represented. At the upper command level, the posts of commissioner, chief of staff; chief of operations and chief of administration had to be filled. The selection and training of the SBS members takes place under the direction of the International Police Task force (CPTF), a UN section. At the initiative of the 1PTF. The psychologist of the GŁCONSFOR (L) supported the planning and execution of the management selection for the upper command level of the SBS. The standards of an assessment centre were taken as a basis for the selection for the positions at the upper command level, although interactive, group-dynamic study situations could not be put into practice due to the language barrier. A multi-stage selection process with a sequential decision strategy was applied. The selection decision was based on the data of the applicant's biography, his/her self-conception and locus of control, intelligence, computer skills, management capability as well as self-presentation. The methods that were applied comprised psychometric tests, standardised questionnaires and interviews as well as samples of the applicant's work.*

The report gives an overview of the assessment schedule, of the procedures that were applied and of the selection criteria. In addition, it presents the empirical results gained in the selection process.

Preliminary Remark

Since the task of ensuring peace in Bosnia-Herzegovina has been transferred to NATO, the German armed forces have been involved in the IFOR/SFOR mission. The German contingents include a troop psychologist who supports the military commanders in all matters concerning leadership and who is mainly occupied with preventing and treating cases of mission-related psychical strain. At the request of the International Police Task Force (IPTF), a UN section, cooperation was established with the psychologist of the 5th German SFOR contingent with regard to the conception and implementation of a personnel selection procedure for the upper management level of the State Border Service of Bosnia-Herzegovina (SBS), which was to be built up.

Introduction

The armed conflict in Bosnia-Herzegovina ceased with the conclusion of the Dayton Agreement (21 November 1995). The principal result was that the parties involved decided that Bosnia-Herzegovina should continue to be a unified state with its current borders and should be internationally recognised. The UN was given a mandate to ensure peace as well as to resettle refugees and build up governmental structures. The organisation carried out this mandate by forming and deploying UNPROFOR and UNMiBiH. In addition to that, other important international organisations (the OSCE, the EU and NATO) have been involved in the reconstruction programme for Bosnia-Herzegovina. The protection of the state border and the control of passenger and goods traffic are of particular importance with respect to the establishment of national sovereignty. The implementation of the measures agreed in the Dayton Agreement is supervised by the High Representative (HR), an official who is appointed by the UN. On the basis of his mandate, the High Representative can, if need be, enforce the fulfilment of the terms of the agreement by issuing directives of his own. After the General Assembly of the Republika Srpska (RS) had repeatedly refused to agree to the formation of a joint border police force, the latter was implemented on 13 January 2000 on the instructions of the High Representative. In contrast to the composition of the SBS directorate, in which the three ethnic groups are each represented by one member, the SBS leadership was to be formed with no consideration for the applicants' ethnic origin and solely on the basis of a selection procedure that met international standards. At the upper management level of the SBS, the four posts of **Commissioner**, **Chief of Staff**, **Chief of Operations** and **Chief of Administration** had to be filled.

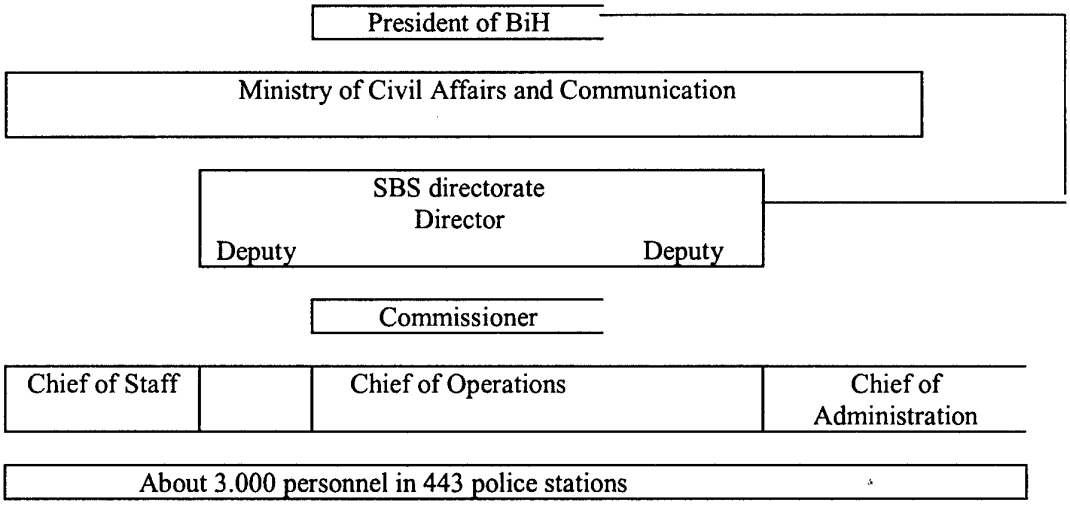

Figure 1: Organigram State Border Service BiH

Owing to the politically explosive nature of the formation of an SBS, it was particularly important to UNMiBiH that the selection of applicants would meet internationally approved standards so that the outcome would stand up to reviews of selection decisions in the event of appeals or complaints.

The method that was applied was a multi-stage selection process which comprised the following phases:

- pre-selection of applicants on the basis of a detailed questionnaire,
- recording of personality traits and capabilities which were relevant for the respective position,
- job interviews conducted by a selection committee.

The positions to be filled had been advertised in three national newspapers over a period of several days. The large-sized advertisements contained detailed descriptions of the jobs and their requirements.

The following qualifications and characteristics had to be proved:

- **university degree,**
- **at least ten years police work or public administration experience,**
- **work experience in management positions,**
- **Bosnia-Herzegovina citizenship holder,**
- active member or hold office without any political party/ impartiality,
- **no criminal record**
- have no debts,
- **received IPTF non-compliance notification,**
- subject of internal investigation,
- willingness to work countrywide,
- ownership of a real estate,
- knowledge of foreign languages,
- computer skills.

If no proof was furnished with regard to the requirements **printed in bold**, the applicant was excluded from the selection process.

In the wake of the advertisement, the Office of the IPTF Commissioner received 78 applications. The following table gives an overview of the applicants' ethnic origin, sex and average age.

Table 1: demographic characteristics of the applicants

	Ethnic Group			
	Bosniacs	**Croats**	**Serbs**	**total**
male	39	14	16	69
female	5	2	2	9
age	41,9	43,7	41,5	42,2
total	44 (56,4 %)	16 (20,5 %)	18 (23,1 %)	78

After the application documents had been looked through, 24 of the 78 applicants were admitted to the next stage of the selection process. In this connection, it was to be noted that due to the pre-selection procedure the Serb proportion in the group of applicants had increased considerably.

Independently of each other, two IPTF members (from Germany and Denmark) evaluated the application documents on the basis of a checklist. In the event of divergent assessments, the decision was taken by the chairman of the selection committee.

Stage 2 of the Selection Process (Written Part)

In addition to requiring the applicants for the SBS management positions to furnish proof of their job-specific training and work experience, information was obtained with respect to the applicants' personality traits – traits that had been derived from the job requirements. These traits were **self-perception and self-conception, capability to act as leader** and **leadership responsibility** as well as **social skills** (ability to guide personnel, negotiation skills). Although the required university degrees went to prove that the applicants' intellectual capacity was in accordance with the requirements, proof of analytical intelligence was demanded so that the applicants could be differentiated objectively.

When the decision was made as to what methods were to be used at stage 2 of the selection process, allowances had to be made for the language barriers which made group discussions, planning games or group work impossible. Instead, characteristics were to be assessed on the basis of the information that the applicants provided in the questionnaires.

Examination at stage 2 comprised the following test procedures:

1 – Questionnaire on Self-Conception and Locus of Control (KRAMPEN 1982)

The questionnaire records a person's generalised self-conception of his/her own capabilities as well as his/her convictions with regard to the control of his/her actions. It is based on ROTTER's "locus of control" concept and is made up of four sections each of which consists of eight questions.

Scale 1 – "Internal Control"

- the control the examinee perceives with regard to events that affect him and with respect to his/her own life

Scale 2 – "External Control"

- generalised expectation that important events in life depend on the influence of other people

Scale 3 – "Fatalistic External Control"

- generalised expectation that important events in life depend on fate, good luck, bad luck or chance

Scale 4 – "Self-Conception of One's Own Capabilities"

- generalised expectation that one has a scope of action in decision situations

The following quality criteria underlie the questionnaire:
reliability: CRONBACH Alpha = .89; split-Half = .83; retest (after 12 weeks) = .87
structural validity: correlation with the scales of other personality invertories
EYSENK Personality Inventory (EPI): neuroticism = -.29 extraversion = .37

Freiburg Personality Inventory (FPI): inhibition = -.26 satisfaction with life = .39
depressivity = -.40
emotionality = -.41

2 – "Progressive Matrices" Intelligence Test (RAVEN, version: 1969)

This well-known, language-free test is a particularly suitable means of recording intellectual performance in the area of logical and analytical thinking, which was deemed to be relevant to SBS management positions.
Reliabilty: r = .86 to .91
Validity: empirical results for differential validity

3 – "Royal Ulster Constabulary Questionnaire" for determining management capabilities

The determination of the required aptitude for being a leader and superior played a central role in the written part of the selection process. The method that was available for this was a questionnaire which had proved worthwhile in the selection of **British police officers**. By making the applicants give a self-assessment, this questionnaire allows to gain information as to the fulfilment of job requirements. In the questionnaire, one has to comment - in free writing - on concrete conflict or decision situations which can occur at the upper management level. For evaluation, it is important to establish whether the questions were understood in terms of content, whether adequate solutions were worked out and whether the examinee was able to give examples from previous work experience. The applicants had to comment on the following job-specific leadership capabilities: **communication skills, interpersonal skills, ability to solve problems, ability to make decisions, creativity/flexibility, drive and determination, ability to cope with pressure, ability to represent the organisation**.

The answers given were rated by two IPTF members who were familiar with the questionnaires. The answers also served as preparatory material for the job interviews in the decisive phase of the selection process.

4 - Computer Test

The computer skills which were required for all the posts - in particular for that of Chief of Administration - were determined by means of 24 multiple-choice questions about PC technology and by way of two assignments to format a text and draw up a table (MS Word, MS Excel). The quantitative assessment of the applicants' answers and results was based on the percentage of correct solutions.

Results at Stage 2

The distribution statistics of the performance scores of the applied test procedures are shown in the following table. Owing to the small sample survey, the statistical findings - especially with respect to significant differences in interference-related statistical calculations - should be assessed with certain reservation. They may be used for stating a trend, though.

parameter	Progressiv Matrices	Self-conception/ locus of control	RUCQ	computer-test
mean	17,3	29,3	54,8	48,3
median	18,0	27,5	54,0	53,0
standard deviation	5,1	10,7	13,0	28,5
range	24,0	43,0	51,0	97,0
minimum	7,0	12,0	25,0	0,0
maximum	31,0	55,0	76,0	97,0
Kolgomorov-Smirnov Z	.737	.594	.497	.794

Table 2: statistical parameters for the test procedures at stage 2 (N = 24)

As can be gathered from the standard deviation and the range, the applied methods form a suitable means of differentiating the applicants. A review of the distribution of relative scores by way of the Kolgomorov-Smirnov test (K-S) shows that the applied test procedures are compatible with the assumption of normal distribution.

The objective behind stage 2 was to single out those applicants who - at stage 3 - were to be presented to the committee as candidates for the four management positions that had to be filled.

To this end, quartile intervals were specified for the distribution of the individual test procedures, and the individual scores were converted into corresponding performance points (1-4). The total performance points of the applied test procedures determined the performance value of the respective applicant at stage 2. The applicants with the highest totals were allowed to remain in the selection process. For each of the four positions that were to be filled, the best four candidates were admitted to the oral test. Thus, 16 of the 24 applicants got through to the final stage of the selection process.

As you can gather from the following table, the comparison between the successful and the unsuccessful applicants shows a substantial difference only with regard to the RUCQ and shows considerably higher values for the personality questionnaire.

tests	group	average	standard deviation	significance
intelligence	unsuccessful	17,0	7,0	
	successful	17,4	4,1	.875
personality	unsuccessful	25,4	13,6	
	successful	31,3	8,7	.292
management skills	unsuccessful	46,4	13,8	
	successful	58,9	10,7	.044*
computer skills	unsucessful	45,3	28,8	
	successful	49,9	29,2	.717

Table 3: comparison (T test) of the test results of successful (n = 16) and unsuccessful (n = 8)

(n = 8) applicants at stage 2

As for the group of successful candidates, the selection strategy that was taken as a basis resulted in an improvement in leadership capability, internal control and self-confidence. In the areas of intelligence and computer skills, enhancement was insignificant. With the exception of the computer test, a considerably reduced standard deviation in the test results of the successful group is to be noted. This points to more homogenous performance.
As is shown by the following table, the finding from the pre-selection procedure with regard to the applicants' ethnic origin continued with a further increase in the proportion of Serbs.

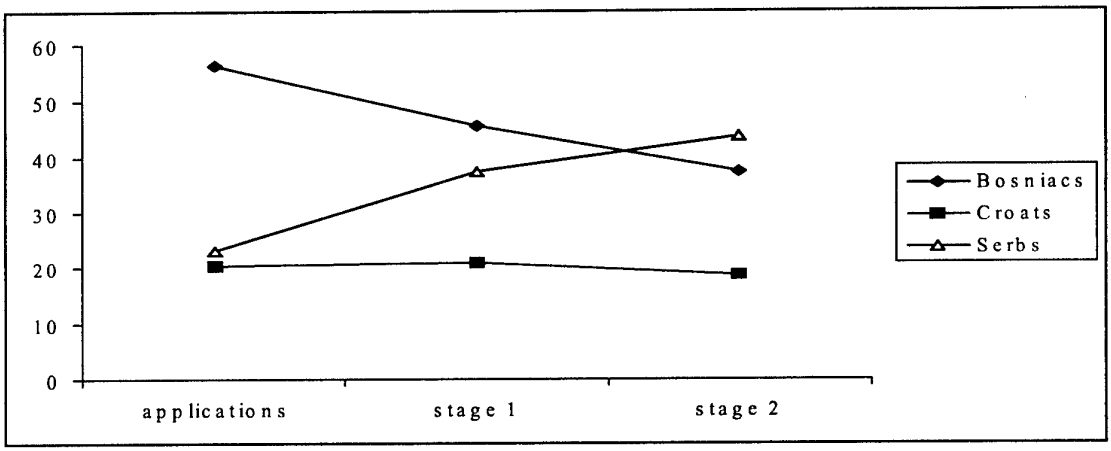

Figure 2: ethnic composition (in %) of the group of applicants at the individual stages of the selection process

Stage 3 (Oral Part)

In the oral part of the selection process, the applicants had to appear before a selection committee. The committee was made up of a chairman, three IPTF monitors and the psychologist of the 5th German Contingent SFOR, who were all entitled to vote. In addition to that, the director of the SBS sat in on the job interviews as an observer. His detailed knowledge of governmental organisations, responsibilities and areas of work was very useful when it came to assessing the particulars given in the application documents and evaluating statements given in the interviews. The director's knowledge also made it possible to precisely ask about details when necessary.

The findings and observations required for an assessment of the respective applicant ensued from the short lecture he was required to hold, from the reasons the applicant gave for being qualified for the job he was striving for, from intensive questioning about the particulars in the application documents on hand as well from the RUCQ. Each member of the committee gave an evaluation to what extent the applicants displayed the defined qualification features. The qualification features had been assigned weightiness factors by which the average values of the applicants' individual ratings were multiplied. The total of the feature points that were

calculated in this way constituted the individual, normally distributed interview scores (K-S Z= .869).

Given to a theoretical range from 55 to 155, the average was 130.5. After the quartiles of the interview scores had been calculated, the scores were converted into performance values (1-4).

To cover to the greatest possible extent the qualification spectra of the management positions that were to be filled, the selection of the test procedures was based on the postulate that the methods would largely be independent of each another. The correlation coefficients which are listed in the following table show that this assumption proved true to a great extent.

	intelligence test	personality test	management test	computer test	interview	final-score
intelligence test	–	.106	-.098	.676**	.047	.604**
personality test		–	.595**	-.028	-.029	.385*
managem. test			–	-.203	.172	.335*
computer test				–	.258	.680**
interview					–	.573*

Table 4: coefficients of intercorrelation for the test procedures and final-score (n = 16)

The fact that the final score depended on the results of the individual test procedures can be gathered from the beta-weights which were determined by means of multiple regression. As is shown by table 5, the performance in the intelligence test, in the RUCQ and in the interview indicate significant functional relations to the final score. The personality questionnaire on self-conception and locus of control as well as the computer test only make a minor contribution towards increasing the multiple regression coefficient R. The significant correlation between the intelligence test as well as between the personality questionnaire and the RUCQ explains the small share of one's own determination of variance in the final score.

model	included variables	R	beta	α	model	included variables	R	beta	α
	interview		.625	.00		interview		.650	.00
1	personality test		-.087	.45	2	intelligence test		.642	.00
dependent	intelligence test		.629	.00	dependent	managem. test	.969	.172	.06
variable:	managem. test		.239	.07	variable:	excluded variables			
final-score	computer test		.064	.73	final-score	personality test		-.086	.44
		.952				computer test		-.041	.75

Table 5: coefficients of multiple regression/ beta-weights for test procedures

Result of Stage 3

For each of the 16 applicants, the total of the performance values achieved at stage 2 and at stage 3 was calculated. Then, the applicants rank on the eligibility scale was established on the basis of this final score. Choosing from the six applicants who occupied the ranks 1 to 4, the selection board by majority decision made its recommendations as to who should occupy the management positions. This filling list was then submitted to the IPTF Commissioner for decision and appointment.

Except for one post (that of Chief of Staff), the results of the selection process were adopted.

Each of the candidates who were invited to the oral test had been checked by the "Certification Unit" and the "Background Unit" for involvement in war crimes in Bosnia-Herzegovina. No incriminating facts were discovered in any of the cases.

Three weeks later, on 06 June 2000, the first border police station at Sarajevo Airport was officially handed over. The event met with great interest on the part of prominent members of the international organisations, of local politicians and of the press. Three more border police stations have followed so far.

PROCEDURE OF PSYCHOLOGICAL AUTOPSY IN SUICIDE CASES IN THE ARMED FORCES OF REPUBLIC OF CROATIA

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ABSTRACT

Unfrequent, unusual and often unfathomable ending of life as they are, suicides have since ever roused attention and debate, implying as they do many moral and ethic issues.

Suicide cases are no organization-specific, and neither the military is immune; it is just that their incidence varies. Croatian military psychologists have from the early days of the Croatian Armed Forces taken on the duty of studying suicides that occur.

This paper presents the methodology of psychological autopsies designed to determine the true nature of the death (whether accidental or suicidal), and also to determine the motive of a suicide.

Psychological autopsy as practiced in Croatian military includes the following:

1. structured interview with individuals who were close to the deceased person (family members, peers, commanders)

2. PSS questionnaire, integration all data available on the deceased person (heteroamnestic data, data collected from family members and friends, official data and the like)

3. other documents available (police reports, medical documents, farewell letters, results of previously conducted psychological procedures and the like)

Collecting of all data available and interviews with individuals who were close to the suicidant are followed by psychological report integrating all data collected and the assessment of motives of suicide is drawn, including also the evaluation on whether the case in question is a suicide or another cause of death.

However, as it was developed and applied in war and post-war-time conditions, the methodology as described is to undergo changes in the time ahead, dictated by the need of adjustment to peace-time conditions.

INTRODUCTORY REMARKS

Unnatural, uncommon and often striking ending of life as it is, suicide has made a centuries-long controversy, raising moral and ethical issues. While modern suicidology insists on differentiation of suicidal behaviours, this paper will only address suicides, i.e. fatal suicidal acts and terms related to this form of suicidal behaviour.

DEVELOPMENT AND APPLICATION OF PSYCHOLOGICAL AUTOPSY

Studying fatal suicide cases retrospectively called for adequate methodology too. Before methods were available to establish the nature the motives of the act, conclusions had been based on analysis of attempted suicides, thereby reinforcing the incorrect theory of uniformity of suicidal behaviour (Biro, 1982). The new methods included the ***residuum method***, developed by Farberow and Schneidman (1970), that consists in gathering all suicide data available (medical documentation, psychological examination records, police records, personal documents, letters, diaries - all essential information for posthumous analysis of the suicide's psychological structure). Lack or inavailability of the documents makes the sole and main deficiency of the method.

The two authors approached the problem with a new method in 1970ies - the ***psychological autopsy*** method, combining the residuum method with active search for other relevant data by interviewing people close to suicides to delineate the psychological background of the act.

The method has found wide administration in research and in practical (primarily forensic) purposes. The police and legal practice often face fatal cases of ambiguous nature (suicide or accident). Psychological autopsy in today's terms is applied following unclear death cases (Litman, 1984; Schneidman, 1981), traffic accidents (Kuroda, Pounder, Litman, 1984, 1989; Schneidman, 1981), suicide and parasuicide cases (Runeson and Beskow, 1991), and in psychiatric clinics to investigate patient suicide. The method has also been recommended for homicide investigation (Danto, 1979, 1994).

Psychological autopsy methodology, therefore, serves to determine posthumously the motives of suicide, presence (or absence) of "presuicidal syndrome" (Ringel, 1983) and the suicide background. Where a suicide cannot be confirmed by posthumous analysis, and the police or court investigation, it is fairly attributable to an accident.

The psychological autopsy model has advantages and deficiencies:

ADVANTAGES	DEFICIENCIES
active search for all information available by interviewing persons close to the suicide	general interview deficiencies
acceptable reliability of methodology determined through correlation between the pre-suicide and the post-suicide psychiatric diagnosis conducted through psychological autopsy by "uninvolved assessors" (Brent, 1993)	minimally interviews with 4 close persons for satisfactory information reliability (Beskow, 1990)
"affective symptomatology" or suicide-coping strategy by the deceased, and the time elapse from suicide act and their interview not found to affect information reliability	close persons manifesting PTSD symptoms and those in crisis provide less reliable information (Runeson & Beskow, 1991)
following the suicide, close persons are faced with an array of tabooised emotions (guilt, anger), and feel the need to explain the motives 4% of the suicide (Sanborm &Sanborn, 1975). Psy-aut. experts help those people face violent emotions and "reach some answers"	some persons can be hurt by the interview. Studies, and our experience too, revealed such reactions in some interviewees (4% predicted) (Runeson & Beskow, 1991)

PSYCHOLOGICAL AUTOPSY METHOD PRACTICE IN CROATIAN ARMED FORCES

The foundations of today's psychological autopsy methodology are contained in research efforts by Doris Grgurin in 1992-1993. Ensuing modifications were based on statistical significance of differences among suicides groups established by social and psychological factors and characteristics of suicides (Grgurin, 1993). The methodology presented in this paper has itself seen some modifications, and more are due, as a result of efforts and remarks by military psychologists of the Croatian Armed Forces conducting psychological autopsy.

Segments of psychological autopsy

1. structured interview with persons close to the deceased person (suicide)
2. PSS questionnaire filing verified data on the deceased person (suicide)
3. other available documentation
4. final psychological report

Structured interview with persons close to the suicide - at least 4 persons are interviewed in a case (2 coworkers from the military and 2 persons from the civilian circle) to minimise subjectivity and possible distorsion of data obtained, as suggested by the reference too. The interview applied currently comprises 46 questions classified into 4 units:

1. adapted form of Watson PTSD questionnaire - administered to establish posthumously the presence of PTSD symptoms (or syndrome). Although correlation between PTSD and suicides still remains obscure, war experience of many Armed Forces members, and the epidemiological findings in reference (e.g. higher incidence of violent deaths in PTSD-affected Vietnam veterans; Segal, 1976; cit. Davidson and Foa, 1992) justify incorporation of this questionnaire into autopsy. All the more so there is no other way to detect whether war trauma was among the factors leading to suicide.

2. the *interpersonal relationships segment* - serving to reconstruct family and intimate relationships (friendships too) and the interpersonal problems coping style. A number of studies revealed disrupted, ill-oriented and deficient relationships (especially family relationships) as possible "trigger" towards suicide (Dobranović, MOD, 1993)

3. *the segment covering the time spent in the AF* - focused on determining the suicide's satisfaction with his/her formal (and non-formal too) status, interpersonal relationships quality and job problem-coping style

4. *risk factors and/or psychopathological behaviours* - serving to detect psychopathological behaviours manifested by the suicide as observed by the persons interviewed. Indeed, there have been a number of studies and case studies undertaken to ascertain retrospectively psychopathological behaviour or psychiatric disorder. Rather than on detecting psychological disorders posthumously, the emphasis here is on tracing possible behavioural, thinking or emotional disorders noticed by the suicides' environment that were not formally diagnosed and treated during his/her life.

The interview is administered by military psychologists; interviewees give quantitative (on the 5-point Likert scale) and descriptive answers to items, and psychologist files all answers and clarify the questions (e.g. by posing additional questions) to interviewees. While interviewing, psychologists make observation of non-verbal behaviour, and if necessary (e.g. if the interviewee is in crisis or denying the event) assess answer validity and reliability.

The PSS questionnaire was constructed based on data from reference and experience, and intended to cover most of the factors assumably correlating with suicide. Suicides are generally associated with individual i.e. endogenous factors (personality factors, emotional maturity, hazardous behaviour etc) and environmental i. e. exogenous factors (primarily socio-cultural factors).

The PSS questionnaire serves to determine (non)existence of suicide-related factors in a given case; it is therefore focused on "objective" risk factors, while the interview helps get

insight into psychological condition of the suicide. The questionnaire consists of 63 multiple choice items categorized into 8 units:

1. general data
2. socio-demographic and socio-pathological data of the suicide
3. socio-demographic and socio-pathological data of the suicide's family
4. engagement in Homeland Defence War
5. career path and behaviour while in the Armed Forces
6. risk factors observed prior to the suicide
7. hazardous behaviours history
8. available psychological examinations results and records, psychodiagnostic report

Military psychologists conducting psychological autopsy gather the necessary data primarily from relevant services of the Armed Forces and civilian institutions and file them into the questionnaire. The answers are mostly based on data from the available documentation on the suicide, and if they are missing, on statements by persons close to him/her (taking care though to check data thoroughly).

Other available documentation

Other available documentation on the suicide has to be enclosed to the autopsy too, including military police report, legal documentation containing event account, witness statements, autopsy report, toxicologic reports etc., and, if available, farewell letter, medical documentation, a diary and letters by the suicide.

Final psychological assessment encompasses:

- general socio-demographic data of the suicide
- suicide's psychological condition anamnesis
- suicide's behaviour dynamics account (in both civilian and military setting)
- family conditions account
- "presuicidal syndrome" diagnosis (Ringel, 1983) "recent stress" diagnosis (Litman, 1989),"depression history" (Litman, 1989), self-destructive behaviour history (suicide threats)
- conclusion - addressing two aspects
  - determine the motives and the psychological background of suicide, or "reenactment of the possible course of events leading to suicide" (Litman, 1989)
  - resolving the "suicide or accident" suspicion (the common forensic practice)

GOALS OF PSYCHOLOGICAL AUTOPSY

Psychological autopsy of suicides committed by the AF members is then a comprehensive and demanding task. What are its goals? Military psychology is, among other things, expected to research the suicide phenomenon with emphasis on motives and consenquences in the military. In the Croatian Armed Forces the psychological autopsy methodology has triple goal:

- **analyse each individual case** this goal is most concisely articulated in final psychological assessment that aims to resolve the suicide-accident doubt and determine motives; military practice requires forwarding of the assessment to military authorities
- **provide psychological support** to suicide's family, friends, and military environment. With ethical standards and appropriate trainedness of psychologists conducting the procedure met, the autopsy procedure may have therapeutical effect (Sanborn and Sanborn, 1975). Suicide leaves persons that were close to the deceased faced with different emotions, and it is through the interview that they get the best opportunity to talk about him/her, about his/her emotions, needs etc. The debriefing effect is also expected, although autopsy is not referred to as a therapeutical procedure. Psychological autopsy provides additional support and encouragement for healthy coping with the situation. Studies indeed reveal only some 4% persons having lost someone to a suicide to find themselves hurt to have to talk about him/her. Moreover, suicide being a grave stressor for the military environment too, psychological autopsy, combined with the obligatory debriefing, makes an additional source of support in healthy coping with tragic loss of a peer.

- **add to research** - a study by Štefan, Bender Horvat and Filjak (1997), based on psychological autopsy, set out to examine the relation between the suicide problem in the Armed Forces and war trauma experienced, i.e. to determine whether individuals in the given sample differed among themselves in socio-demographic features and hazardous behaviour, especially with respect to traumatic experience. The sample comprised suicides in Armed Forces up to 1996, and was categorised as follows (based on the final psychological assessment):

group 1 - war-traumatised individuals (N=23)
group 2 - war trauma combined with other aggravating factors (N=36)
group 3 - no war trauma (N=24)

Statistical analysis covered 22 variables from psychological autopsy reflecting different behaviours, socio-demographic features and living conditions of the suicide. Simple variance analysis was conducted to find statistically significant differences among the groups.

The following 10 variables

1.age
2.criminal offense history
3.financial problems
4 altered health condition
5.education level
6. drug use
7. residence
8. marital status
9. number of children
10.present housing situation

showed no statistically significant variables related to war trauma.

Statistically significant differences were found related to suicide motives with the following 11 variables:

11. present financial situation
12. housing problems
13. birth place
14. criminal offense history of family members
15. alcohol addiction history in the family
16. loss of a close person to war
17. material damage suffered to war
18. outclinic or hospital treatment in war
19. illness during the war
20. suicidal self-wounding
21. violation of driving speed limit
22.impulsive reactions and hazardous behaviour non-related to combat

1. suicides with no traumatic war experience (group 3) came (variable 13) from bigger towns than the traumatised
2. the frequency of prior suicidal self-woundings (variable 20) was the highest in the non-traumatised group (group 2)
3. loss of close persons (variable 16) and substantial material damage suffered to war (variable 17) was mostly the experience of the trauma-driven suicides (group 1)
4. the war-traumatised group and the group with trauma combined with other aggravating factors (groups 1 and 2) lived in much poorer conditions (var. 11), including poorer housing conditions (var. 12) compared to the non-traumatised
5. suicides induced by combined war trauma and other aggravating factors (group 2) showed more suicidal behaviours -
   - breeching driving speed limits (variable 21) - compared to the non-traumatised group
   - impulsive reacting and running into perilous situations other than combat (variable 22) -compared to the traumatised (group 1)
6. suicides attributable to war trauma combined with other aggravating factors (group 2) had taken more sick leaves (variable 19) compared to group 1 and 3. Also, group 2 (war-trauma combined with other aggravating factors) used more outpatient and hospital treatment (variable 18).
7. criminal offense history of family members (variable 14) and alcohol addiction problem in the family (variable 15) was more common in group 2 (war trauma combined with other aggravating factors) than in both group 1 and group 3

To conclude, the results of psychological autopsy methodology (presented here is only a part) justify its administration. Risk factors definition is expected to further improve prevention of suicides. The methodology will however have to see some modifications in the future - e.g. adjustment to peacetime conditions and gathering data on suicides by all military profiles.

PSYCHOSOCIAL CONDITIONS OF CZECH SOLDIERS IN KFQR

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ABSTRACT

The activity of Czech soldiers in the peacekeeping mission, KFOR, is an important demonstration of the successful collaboration between the Czech Army and our alliance partners.

During the latter part of April 2000 a psychosocial research experiment was undertaken with members of a Czech unit participating in KFOR. Many important facts were ascertained from the findings of this research. Three time blocks were established and named: "before mission", "during mission" and "after return." We learned that each time block required better psychosocial preparation and support for' the soldiers. The list below gives an overview and description of each of the time blocks.

The "before mission" category is characterized by the soldiery uncertainty. A large-scale strategic cultural plan (both political and military) is essential to prepare soldiers for a variety of potential problems during the mission. This preparation allows the soldiers to deal with such issues as xenophobia, dehumanization or the stress that accompanies missions.

The "during mission" time segment is fraught with physical and mental hardships. The daily routine of a mission, however, caused many soldiers to become complacent in a potentially dangerous environment Several methods of combating this problem include relaxation time for the soldiers both on and away from the mission area and correspondence with the soldiers families.

The "after return" portion of the mission is best illustrated by the difficulties soldiers encounter in their personal lives. Research shows that many soldiers harbor images of a better life for themselves upon their return from a mission. The potential backlash that the soldiers may exhibit when their expectations are not met is of great concern. Psychosocial therapy for the soldiers before their departure from the mission as well as during their return home is one method of counteracting these feelings of disappointment.

This kind of challenging situation affects everybody involved in the mission to some degree. The soldiers learn to become confident with their ability to be flexible in any given situation- The emotional aspect of their personalities enables the soldiers to adapt to many rapidly changing scenarios.

Military psychologists, who work with soldiers, must deal with a multitude of topics that affect- the overall performance of the soldiers, Comfort and discomfort of the soldiers, actual mental conditions, potential causes of stress, and a variety of other mission-related issues are all factors that influence the mental makeup of the soldiers both on and off the job.

The results of the psychosocial research of the members of the Czech unit, KFOR, definitely show the difficulties of this experience, and moreover, this research, has provided the groundwork for future solutions to the issues raised by this study.

Ladies &Gentlemen,

KFOR is the most recent foreign action of the Czech Army which has been actively engaged in the military operations of UN and NATO since the beginning of the 90's; the participation of our chemical unit in the Persian Gulf was the first mission. This distinctly wartime operation was later exchanged for peacekeeping missions on the territory of former Yugoslavia, which is why our army had sufficient experience with this kind of military actions when it joined KFOR.

Despite researches conducted during the last two years which were focused on the psycho-social conditions of our soldiers in the SFOR missions (Bosnia and Herzegovina), the study of KFOR from the spring of this year brought to light much new data which is relevant not only to this action, but also to other foreign missions of the Czech soldiers.

This challenging kind of situation affects to a greater or lesser extent the structure of personality, the dynamics of perception, the behavior of everybody involved in the mission to some degree as well as influencing the value system in the deepest part of the personality. The soldiers learn to become confident of their ability to be flexible in any given situation. The emotional aspect of their personalities enables the soldiers to adapt to many rapidly changing scenarios. They also have to cope additionally with their personal and interpersonal problems.

It is necessary to deal with a multitude of topics that affect the overall performance of the soldiers. The comfort and discomfort of the soldiers, specific mental conditions, the structure of relationships and the quality of communication must be observed. The personal benefit of the mission for a soldier, material and social conditions and a variety of other mission-related issues are all factors that influence the mental makeup of the soldiers both on and off the job. Potential causes of stress must be found for maintaining low potential impact.

It is not important which specific factors affect a soldier to a greater or lesser extent - e.g. separation from his home, temporary or permanent loss of a close individual, family conflicts, difficulty of tasks, discomfort, monotonous activity, isolation, loss of privacy or loud noise. ADAPTATION to their new life determines the LEVEL of their SATISFACTION, and how it is expressed in their actual mental condition.

Psycho-social research among members of the Czech KFOR unit arises from the need of the Chief of the General Staff and the headquarters of the army of the Czech Republic to obtain and evaluate concrete information from the area of the mission and to compare these results with those from previous researches. Some types of problems regularly occur in all missions. It is not a question of elimination local problems, but of key issues, the repetition of which causes fundamental problems. For example the influence of the selection of some negative phenomenon reappear later, during the mission, affecting relationships between headquarters and staff and impacting logistical problems, etc.

The research study of the Czech KFOR unit is established according to the main purpose mentioned above. The Czech Army base is located in the mountains, difficult, inaccessible terrain, in the north part of Kosovo, close to the village of Gornji Sibovac, about twenty kilometers from Pristina. About 180 Czech soldiers operate under the British army command there. They are made up mostly of members of the special forces trained to operate in the rearguard of military action, in activities like pyrotechnics, logistics and as members of CIMIC center, engineers, communicators, members of the intelligence service, physicians and medics.

Their remit is to guard about 48 kilometers of the Kosovo/ Serbian border, where there are many illegal crossings. Native Serbians live there and their security is highly endangered. Their lives depend on the protection of our soldiers. Czech soldiers have to monitor the day-to-day situation, to mediate between different ethnic groups and to accompany military and humanitarian convoys.

This project is focused on obtaining a complete summary of information demonstrating potential risks. Clear indications of significant frustration among the members of the KFOR unit may lead to the proposal of equal socio - technic arrangement that diminishes pressure or eliminates risks and causes.

The goals of this study arise from the need of the Chief of the General Staff and Headquarters of the Peace Forces of our army to be continually informed for analysis of the situation and for proposed short and long - term solutions.

A group of approximately 100 people was selected for our research to cover horizontally all occupations of the soldiers and vertically every level from command to the staff.

The sample drawn from 44,4% of the whole team, which was 80 people. Our collection of the data was carried out in the mission area.

The research is divided into three parts

- before mission
- during mission
- after return

The structure and the dynamics of the mental condition and feelings was checked in all the three parts by the SUPOS 7 test, in respect to the interaction of the individual with his social and work environment. Psycho-social screening during the mission is moreover focused on the personal profile of the members of the mission, based on screening, a psycho-diagnostic test battery and a questionnaire by the Czech authors.

The questionnaire that was created for use in the military area was administered for the screening of the psychosocial conditions of the Czech soldiers. Directed interviews were obviously part of our research.

The opening part of the research - before mission - is focused first initially on discovering the level of the socio-cultural preparation and motivation factors. Almost two thirds of the respondents were satisfied with the mission preparation and they understand the meaning of it very clearly.

On the other hand the results demonstrate insufficient information regarding the specific circumstances in the mission area, the history of the conflict, the character of the local people, etc. The majority of the soldiers' information came from the mass media. This lack of information led consequently to the occurrence of xenophobic and dehumanizing attitudes.

Despite the linguistic and cultural relationship which exists between Serbians and Czechs, these kinds of attitudes are more prevalent among our soldiers in Kosovo than among the soldiers serving in Bosnia and Herzegovina. The Muslim-Albanian population presents greater diversity in social customs, value systems etc. Problems with recognition of the civilian population and paramilitary units may support these tendencies which occurred among approximately over a third of the responders. Soldiers with university education demonstrated lower levels of this kind of attitude.

The attitude of the local people towards our soldiers is evaluated as good, even friendly by two thirds of the respondents.

The importance and consequences of the socio-cultural preparation of the soldiers are obvious and the Army of the Czech Republic takes account of this as part of before-mission training.

The Czech soldiers give the impression of being communicative and cooperative people. Their standing is raised by the definitely positive rating of their relationship with the other armies included in KFOR. A high level of confidence, positive self-evaluation, self-criticism, professional abilities and neutrality were also noted.

Responding soldiers mostly feel in good mental condition. This could be evidence of the quality of the personal selection of the staff. They are able to maintain good mental condition despite difficult life-circumstances. These subjective reports are confirmed by diagnostic screening of the actual mental condition as well.

Despite the low number of women in the Czech KFOR unit - 1,6% - their presence and positions are well evaluated by more then one third of the respondents. This strengthens opinions about the importance of the female factor in military.

Considering the economical situation of the Czech Republic the financial benefits head the motivation factors. They are important for one third of our respondents. Average income of a member of the Czech KFOR unit is approximately five times higher than his income at home.

Our soldiers often resolve their bad economic situation or that of their families.

Comparing the results of the researches carried out in Bosnia and Herzegovina during the last two years, there is a noticeable increase of patriotic tendencies and factors associated with professional growth. The presence of one hundred professionals in that unit, in contrast to the

missions IFOR or UNPROFOR, where the majority were reservists, may be a reason for this progress.

KFOR is the first foreign mission for more then one half of our respondents; nevertheless it is not possible to say that these soldiers are in worst situation compared to those who have some previous experience with this kind of military operation. This peacekeeping mission is definitely specific, which is why it is a new experience even for the veterans.

Military psychologists function at the level of a battalion or a brigade, which is why there are none in Kosovo throughout the whole mission which comprises only a company. The absence of psychological service in the psycho-diagnostic, psychotherapeutic and counselling areas is seen as a serious problem. This was confirmed by more then three-quarters of our soldiers.

Considering the absence of a psychologist KFOR unit, more than half the soldiers would ask their friends or colleagues for help. The quality of interpersonal relationships is a key factor in the mental condition of our soldiers.

The mission period is mostly described as monotonous, routine activity. This assessment applies especially to the logistics area. Everyday maintenance of motor vehicles, routine repairs of technical equipment, always driving the same routes for the same reasons, creates a highly defined stereotypical situation.

Combat units have more colorful and dynamic activity but even in that sphere there is the appearance of automation and monotony in everyday life. This state may lead to chronic fatigue, a high frequency of errors during duty or increasing dissatisfaction and irritation among the members of KFOR. Here the military psychologist may be present. Contrary to some others armies of NATO, Czech military psychologists have different position. In addition to their other duties, they act as advisers to the commanders. They may help to resolve the monotony and fatigue of the soldiers due to this position. If they detect increasing monotony they can advise, for example, special training that may help to eliminate monotonous activity, the dominant source of stereotype and automation, which means decreasing fatigue as well. Attention and combat readiness of the soldiers increase in this manner.

The results of our research indicate some problems associated to the relationship of the Army of the Czech Republic to the soldier in missions. Some uncertainty concerning the professional future of the soldiers arises from this attitude. After return from the mission one-quarter of them think about leaving the army to return to civilian life.

Strange as it may seem, more then half of our respondents expect an improvement in the quality of their personal or family life. This may be associated with improving their life style, based on saving money. It may signal the presence of soldiers who solve their personal problems by leaving home for a mission. This usually doesn't work. The problems appear after the soldier's return. Almost two thirds of them would ask their relatives or friends for help.
The results of the screening diagnostic of the acute mental condition are more then favorable. They imply a very positive structure of feelings and attitudes of the members of the Czech KFOR unit. This promotes a good reaction to activities and social conditions during the mission. The diagnostic screening was conducted voluntarily on 27% of the unit including the command.

The results of this diagnostic screening detected a good mental state among the soldiers and a high level of activity, initiative, desire for action combined with assertiveness, a feeling of satisfaction, power and energy. Good self-control and self-regulation with a low level of tension and absence of anxiety were also recorded.

Despite higher occurrence of physical (61, 7%) and mental (44, 7%) fatigue, headaches and sleep disorders, positive mental state indicate good mental resistance, adaptability, and a professional approach to the mission.

Drinking coffee (55, 03%), smoking (51,1%), occasional use of alcohol (14,9%) and prescription drugs (59,6%) is in the same range as the average population of the same age.

Several socio-technical arrangements were proposed to the Chief of the General Staff on the basis of the results. They are related to the KFOR unit and also generally to foreign missions. Some of them have been realized. The results of our research imply urgency, justification and usefulness of similar projects in the Army of the Czech Republic.

In this study we tried to show that despite all snags, difficulties and problems with relationships, inner life, and adaptation to hard conditions in the area of logistics and technical security the Czech soldiers are "good guys in the right place".

EXAMINED INTERACTIONS IN A CHANGING MILITARY EDUCATIONAL ENVIRONMENT

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ABSTRACT

Making organizational changes is a serious challenge for everyone who is in one way or another connected with that process. Military education is closely concerned the current reform in Bulgarian army. This paper discusses the ways the Military Academy environment is accepted and also the way the students meet the challenges of the educational process. Using multiple correlation and behavior regressive analysis the tendency of interrelation between the general and component satisfaction with the students' personality traits and academic success is traced. On this reason, some ideas arc suggested for the successful carrying out the purposes of the reform.

INTRODUCTION

Making organizational changes is a serious challenge for everyone who is one way or another connected with that process. The changes brake the equilibrium of the organization in K.Levin's (1951) concept /unfreezing/, which is the reason for many problems in the movement toward a new status and reaching again a new and again stable functioning condition /refreezing/. In analogous cases, the managing body is the factor that has to control the operational efficiency of what is being carried out by stimulating the accelerating forces, minimizing the restrictive ones and keeping the constructive vector of change. This means that the managing of the organization changes requires exact and in-time information about things going on with the people and finding relative approaches to balance the innovation processes when looking for a higher efficiency for the organization.

In this paper we study the interaction and the effect of the personal features on the degree of satisfaction and the academic efficiency of different student categories in a Military academy in a period of organizational and technological changes within the military education system.

FRAMEWORK

In some contemporary researches on organization psychology the behavior mechanism of the individual is shown when the working situation is changing. It turns out that people get too sensitive to changes, especially if not engaged in the process which regulates their attitude towards the organization in either positive or negative direction. From this point of view it is easy to understand why the professional attitude proves to be the main purpose of the organizational changes and why the attempts to work reorganization create principle mechanisms for improving the professional satisfaction. The satisfaction with one's activities will give results if the work helps to form personal values and standards. However, when the work blocks the creation of such personal characteristics, non-satisfaction occurs (Gordon, 1993).

The opinion that satisfaction is a sign of adaptation to the working process and of utilizing the personal potential in the team-work process is worth paying attention to. In certain conditions satisfaction affects the quantitative and qualitative characteristics of performance, responsibility, discipline, innovation abilities and creativity (Radoslavova, 1987).

METHOD/PROCEDURE

146 cadets were surveyed out of three cadet units. They were asked to give an opinion and assessment on the situation and their own behavior and it was explained to them that the research is connected with the reforms carried out at the Military academy. Their current scores were taken as the basic index of the personal academic activity in the Military academy environment.

The data was collected by several methods, one of them being the multidimensional card of satisfaction, the Likert type, our own invention. We used it to measure the following variables: total satisfaction, needs satisfaction, satisfaction from the learning process organization, satisfaction from the internal relations, level of support satisfaction, level of challenges satisfaction, balance level of interaction.

The second part of the scale is built on the principle of the semantic differential and measures the cognitive-emotional attitude towards separate elements of the inside environment of the Military academy. The following subscales are included: acceptance-rejection of the learning process; satisfaction with the management; satisfaction with the commanders; satisfaction with the military lecturers and satisfaction with the civilian lecturers at the Military academy.

The prevailing part of the scales and sub-scales showed from satisfactory to a very high degree of consistent reliability (Alpha from .51 to .96).

Low is the reliability of the needs satisfaction sub-scale (Alpha = .38), the balance sub-scale (Alpha=.40) and the interrelations satisfaction sub-scale (Alpha=.45).

The next empirical information collection method was the multi-measure personality questionnaire. The questionnaire is designed to diagnose personal characteristics and states that

are of primary importance for the social adjustment process and for the behavior control and was adapted to the Bulgarian cultural environment by À.Velichkov. It contains the scales: Neurotism (Alpha=.75), spontaneous aggressiveness (Alpha=.63), lowered self evaluation (Alpha=.78), nervousness (Alpha=.64), sociability (Alpha=.65), stability (Alpha=.55), reactive aggressiveness (Alpha=.58), shyness (Alpha=.64), openness (Alpha=.57), extraversion/introversion (Alpha=.47), emotional liability (Alpha=.48), manhood/womanhood (Alpha=.49).

A scale for measuring the locus of control - an adapted version of the classical test of Rotter with additions from the tri-factor test of Reid - Weir and some items of other improved methods of the construct measuring (Velichkov, Lukarski, Radoslavova, Russeva, Genova, 1987). The test shows a summary of the anticipations of the individuals regarding the exerted personal control over the environment and the situations (Alpha=.73).

RESULTS

Most representative concerning the comprehension of the organizational changes situation are the levels of the general and component satisfaction. This is well illustrated in fig. 1, where five of the variables are in the negative part of the continuance of satisfaction and seven variables are in its positive part, i.e. they have values higher than 3.0. In this sense there is a certain amount of dissatisfaction regarding the general environment parameters (M = .284, SD = .58), with satisfying the basic needs (M = 2.35, SD = .62), with the learning process organization (M = 2.64, SD = .85), the level of challenges (M = 2.64, SD = .85) and the satisfaction with the administrative services (M = 2.85, SD = .83).

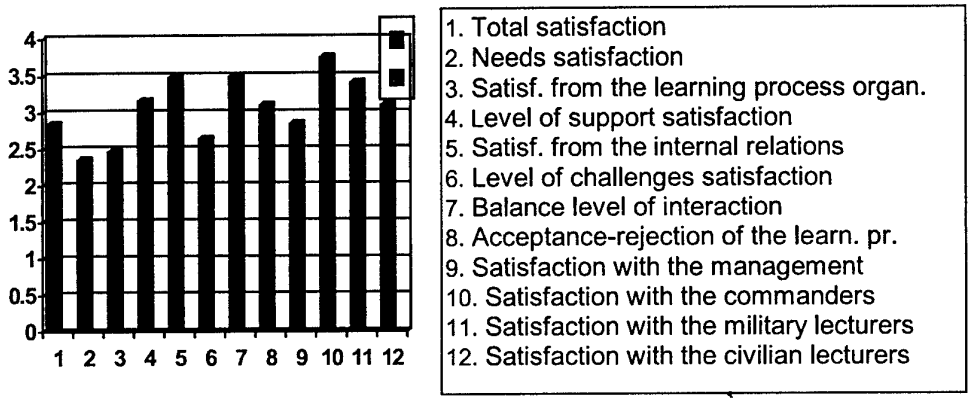

Figure 1. Levels of the cadets' satisfaction with the conditions and the activities at the Military Academies.

The analysis won't be complete if we do not show the dependence of one variable on the other. The general satisfaction correlates weakly and negatively with the neurotism ($r = -.31$, $p < .001$), with the spontaneous aggressiveness ($r = -.25$, $p < .001$), moderately with the depressive's($r = -.42$, $p < .001$), with the nervousness ($r = -.36$, $p < .001$), with the shyness ($r = -.35$, $p < .001$), openness ($r = -.30$, $p < .001$), the emotional liability ($r = -.42$, $p < .001$) and with the locus of control ($r = -.40$, $p < .001$). Positive but weak is the connection between the general satisfaction and the sociability ($r = .36$, $p < .001$), with the stability ($r = -.29$, $p < .001$) and with manhood/womanhood ($r = .41$, $p < .001$).

Similar are the tendencies in the relations between the rest of the satisfaction aspects and the features with the exception of the correlation's between the scoring in class and the personal features, the scoring and the different ways to demonstrate satisfaction ($p > .05$). We found out that the high scores were in a statistically important but still weak correlation only with the balancing ($r = .29$, $p < .001$).

The acts regression analysis shows that the scoring at school is affected only by the balancing ($R^2 = .09$, $T = 3.760$, $p < .001$), and the level of general satisfaction with the cadets is a result of the effect of a number of variables. In the order of importance, they are as follows: in the first place is the basic needs satisfaction in the Military academy environment ($R^2 = .76$, T =

6.162, p< .001), the level of challenges (R^2= .81, T = 5.914, p< .001), the level of support (R^2=.85, T = 3.142, p< .021), the satisfaction with the learning process at the Academy (R^2= .86, T = 4.057, p< .001) and finally the balancing (R^2=.87, T = 2.625, p< .009). The general satisfaction is affected by some personal features, e.g. shyness (R^2= .87, T = - 3.643, p< .001) and emotional liability (R^2= .86, T = 2.541, p< .012). The balancing is under the effect of the general satisfaction (R^2= .13, T = 2.631) and the satisfaction with the civilian lecturers (R^2=.23, T = 2.032, p< .044).

DISCUSSION

The correlation and regression analysis showed connections and tendencies close to the anticipated, found out in other researches of ours. The negative correlations of the satisfaction with personal features like neurotism, spontaneous aggressiveness, depressiveness and nervousness show that in certain conditions the individuals with similar characteristic features are most vulnerable as far as satisfaction is concerned which requires special attention for those people in the process of reforms so that the adjustment is ensured. On the other hand, the positive although weak correlation between satisfaction and sociability, stability and manhood shows that the cadets with higher adjustment potential are inclined to overcome that problem, which is one more argument in favour of the necessity to take into consideration the personal characteristic features when choosing the applicants for the Military academies.

Our expectations that we will find a more profound correlation and interference between the school scoring and satisfaction as well as between the high scoring and personal features were not justified. It turned out that the most important factor for the high scoring at the Military academies is the balance or the cadets' ability to get into efficient and harmonic connections with the environment of the military establishment.

The analysis showed a curious ranging according to the priority degree of the different variables which mostly affect the level of general satisfaction in the military academy environment. All that gives enough information to the administration people about the management of the changes at the military academies who should apply equal care and skills to operate the organizational and environmental as well as the personal characteristics of the students when carrying out the purposes stated.

The analysis pointed out the necessity to assess not only the factors of learning importance but more so of developing the personal potential of the future officers who will then work on solving the problems in the field of national defense as well as participating in the peace-keeping missions in the region and in the world. This requires taking into consideration the traditional national virtues that co-exist in harmony with the contemporary values and attitudes of a NATO person within the Bulgarian officer's personality so that they make and keep the peace and the achievements of the modern civilization.

CONCLUSION

The changes at the military academies and in the military education system are accompanied with a number of problems and all that directly affects the cadets' level of satisfaction with the conditions and, of course, with the activities. This brings us to the conclusion that there would be, in that environment, better learning results and the necessary adjustment comfort with the cadets only in case that their basic needs are satisfied, the work of their immediate commanders is improved as well as a moderate teaching pressure and challenges are imposed on them when learning given programs. Our observations showed that the effect from the innovations and changes at the military academies would be guaranteed to a much higher degree if the managers could put more trust into the services of the specialists on the behaviour applied disciplines and to utilize them with readiness and correctness.

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PSYCHOLOGICAL ASPECTS OF RECRUITMENT: CONCEPTION FOR THE SWISS ARMY XXI

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ABSTRACT

The Swiss Army is currently engaged in a process of reorganisation: "Swiss Army XXI" will start in 2003 with a smaller but more efficient army. For two years now many professional officers and civilians have been working out proposals and solutions for this project. Discussion has also focused on the recruitment process, and the Dept. of Applied Psychology of the University of Zurich was commissioned to draw up a conception concerning the psychological aspects of recruitment. The concept treats three levels: basic recruitment, assessment of leader potential and assessment of high-ranking officers. By using computer-based psychological tests such as personality questionnaires, intelligence tests, psycho-motor test batteries or tests of social competence, the following goals should be attained:

1. *Diminishing the drop-out rate during military basic training by assessing psychological resources.*

2. *Collecting more detailed information on the conscript to establish a well-founded assignment to military functions.*

3. *Obtaining a more homogenous distribution of conscripts with leadership potential across different military functions.*

Support of the decision-making process for the admission to military leadership schools through a detailed leadership-related aptitude clarification.

1. Why does the Swiss Army need a new recruiting procedure?

The Swiss Army is currently engaged in a process of reorganization. In 2003, the "Swiss Army XXI" will start with a smaller but more efficient army. For two years now, many professional officers and civilians have been working out proposals and solutions for this project. Discussion also focused on the recruitment process, and a military commission was constituted to draw up a concept concerning recruitment in the Swiss Army XXI. To work out the psychological aspects of recruitment, the Department of Applied Psychology of the University of Zurich was commissioned. There are three levels that have to be discussed: basic recruitment, assessment of leadership potential, and assessment of high-ranking officers.

2. Today's recruiting procedure

In a first step, the psychologists analyzed the actual recruiting process[1] to discover what psychological tests are already in use and whether any could be used in the future as well. The Swiss Army recruits more than 30'000 conscripts each year, in 8 recruiting zones at a total of 130 non-permanent recruiting facilities. A recruiting officer is responsible for recruitment in each zone. The recruiting officer's staff comprises militia army surgeons, sports experts, and administrative personnel. Per recruiting day, the recruiting officer has to assign as many as 40 to 50 conscripts to a military function. To do so, he has the following information about the conscript:

• fitness for active service	psychological, medical, and physical tests
• abilities, skills, and knowledge	school and job achievement, hobbies
• military interests	preparatory military training, family traditions, requests
• recruiting officer's impression	assignment interview

There have been only two psychological tests in use up to today: a short paper-and-pencil intelligence test (Test 95) and a computer-based test battery for the selection of truck- and tank drivers (EP 95). Thus, current recruitment practice stresses physical aspects and job achievement and does not place primary emphasis on abilities and skills. Compared with procedures used in business personnel selection, recruiting in the Swiss Army today is rather archaic. With the current system, it is not possible to achieve a detailed psychological assessment of conscripts. For that, we conclude that we will need two or three recruiting days, a psychological staff, a computer-based test system, and a few recruiting centers.

3. Basic considerations

As mentioned a moment ago, more accurate psychological assessment requires the implementation of a computerized test system. The question arises as to whether the Swiss Army should use a commercial test system, such as those from Hogrefe or Schuhfried, a test system used by another foreign army, or a new tool constructed for Swiss Army purposes. The following considerations support the construction of a new system and tests:

• specific questions	Military service requires different skills than those required in everyday life. This limits the use of standard tests.
• three languages	There are only a few tests available that provide parallel forms in the three official Swiss languages of German, French, and Italian.
• costs	Licenses for commercial tests are very expensive and would exceed the costs of constructing a new test in a few years' time.
• possibility to practice	If the standard tests used were to become public knowledge, conscripts could practice taking the tests prior to the recruitment process.

[1] This paper does not discuss the selection of military pilots.

- existing test system — The Swiss Army already possesses a test system that works for the three languages, is field-tested, and can be easily adapted.

If a psychological test is used for the recruiting process, it will be essential to employ psychologists with psycho-diagnostic training who are able to explain and discuss the test results with the military recruit. Additional testing assistants and computer network specialists will be needed as well.

4. Suggestions for a new psychological recruitment

As contracted, the psychologists on the project formulated the goals to be accomplished by the new recruitment procedures:

1. Diminish the dropout rate during military basic training by assessing psychological resources.
2. Collect more detailed information on the conscript as the basis for a well-founded assignment to military functions.
3. Obtain a more homogenous distribution of conscripts with leadership potential across different military functions.
4. Support the decision-making process for admission to military leadership schools through detailed clarification of leadership-related aptitude.

4.1. Diminishing the drop-out rate during military basic training by assessing psychological resources

During military basic training, the dropout rate caused by psychological problems is about 7%. In the literature, three dimensions are found to be important for psychological military capableness: intelligence and education, affective stability and maturity, and the ability to establish social relations.

To assess the intelligence of the conscripts, the Swiss Army already uses an intelligence test that can be easily adapted to a computer version. For the assessment of affective stability and the ability to establish social relations, we propose to construct a new questionnaire that taps fears, depression, emotional stability, coping, independence, and social behavior. These assessments belong to the medical part of recruitment. Conscripts who show irregularities have to go to a personal interview with a psychiatrist.

4.2. Collecting more detailed information on the conscript as the basis for a well-founded assignment to military functions

The major question here has to do with the specific abilities and skills that each function demands. Therefore, at the core of making assignments stands a matrix of the different military functions and a list of abilities and skills. As in other personnel selection processes, the Swiss Army has to formulate "job profiles". And because it is impossible to distinguish among 140 different military functions, groups of functions with similar requirements have to be formed, such as the groups transmission soldiers or gunners. Finally, the computer compares the conscript's profile with the function-specific profiles and suggests two or three possible assignments. Thereby, three dimensions are assessed: performance, personality, and some aspects of social competence:

Performance is evaluated using the intelligence test and an adapted version of the test battery EP 95. The sub-dimensions include processing of information, memory, concentration, endurance, stress resistance, vigilance, reaction, visual perception, physical coordination, and others.

A traditional questionnaire is used to assess personality, with the difference that it includes only questions that are relevant to military service. It taps the following dimensions: risk-avoidance, aggression, conscientiousness, flexibility, endurance, self-confidence, cooperation, locus of control, achievement motivation, persistence, and emotional stability.

Social competence as team ability, conflict ability, frustration tolerance, and achievement of dominance is assessed by a test in which the test-taker is presented with various social situations. He has to choose one of a set of possible reactions to each situation.

4.3. Obtaining a more homogenous distribution of conscripts with leadership potential across different military functions.

Today not every branch of military service has enough recruits with leadership potential, because highly educated conscripts typically prefer technical military functions, like transmission. To attain a better distribution, the Swiss Army has to assess leadership potential during basic recruitment. This assessment is a negative-selection: Conscripts should be designated who have no or little potential to fill positions of leadership. To that purpose the same tests are used as for the assignment to military functions, but complemented by some leadership-specific scales, such as leadership motivation or assertion.

4.4. Support of the decision-making process for admission to military leadership schools through detailed clarification of leadership-related aptitude

It is assumed that after six weeks of military basic training, soldiers with leadership potential should be separated out and placed in a military leadership school. To support the selection of future officers, a special test battery is used that assesses the dimensions of planning, logical intellectual power, and leadership-specific social competence.

Planning ability is tested using a version of the well-known assessment center "in-basket" task. The aspirants have to create a military training schedule by integrating lessons in a week's plan. The dimensions rated are planning competence, problem solving, time management, and goal orientation.

Logical intellectual power is assessed using flow-charts that the soldiers have to analyze.

To assess social competence, an adapted version of the test used in basic recruitment will be used. The dimensions measured include team ability, conflict ability, frustration tolerance, achievement of dominance, need for social contact, agreeableness, integrity, self-confidence, responsibility, and leadership motivation. In addition, a leaderless group discussion – again a typical assessment center exercise – is implemented: For 45 minutes, four aspirants have to discuss a problem and write down their outcomes and decisions. Two observers rate the soldiers on the dimensions of discussion behavior, leadership behavior, group integration, cooperation, and conflict management.

5. The next steps

Once a more detailed concept has been worked out and the politicians have accepted the over-all recruiting concept, test construction will begin. At the same time, important theoretical questions, such as the selection ratio or the comparison of the conscripts' profiles with the function profiles, will have to be examined.

When test construction is completed, there will be a test-run of the complete recruiting procedure in order to discover any weak points. Furthermore, a first set of test norms can be calculated.

Because test construction is an ongoing process, the data on the conscripts passing recruitment in the Swiss Army XXI will be used to improve the tests and to calculate more accurate norms.

COPING WITH- STRESS DURING MILITARY BASIC TRAINING

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ABSTRACT

Within the stress and coping theoretical framework the study examines how concepts experience, appraise and deal with various aspects of life during the 'beginning phase of their military service. A set of self-report instruments measuring potential sources of problems during military service, cognitive appraisals and the ways of coping with stressors was administered on the sample of 449 males within first 7-12 days of their service and taken again in the same sample of recruits five weeks later, ***i. e.*** *the last "but one week of their military basic training. Specific sources of problems cited by participants as more or less stressful showed to be relatively similar in two measurement points, although the rank of item average values varied to some extent from the very beginning to the final weeks of basic training. The results point to moderately high level of stress intensity and generally low level of perceived controllability of selected categories of situation reported by conscripts. The study showed that active adjusting and passivity were the most frequently used modes of coping followed by reinterpretation, humor and seeking social support, whereas the least frequently used strategies were expression of emotions and negotiation. Small, but significant changes were observed, as in cognitive appraisals so in the ways of coping with selected stressful situations encountered by recruits during basic training.*

The findings to be presented in this paper are a part of a larger research project[2] aimed at testing the hypotheses derived from the stress and coping theory by Lazarus and colleagues (Lazarus, 1991, 1993; Lazarus & Folkman, 1984, 1987) as applied to the military service context. As numerous empirical data indicate, entering into army and obligatory military service can be rather demanding for recruits, in terms of both physical and psychological requirements placed on the trainees (e.g., Clemons, 1996; Mikulincer & Florian, 1995; Vickers, Kolar & Hervig, 1989). Empirical evidence further suggests that military environment can be particularly stressful in the initial phase of service, that is, during the basic military training period (e.g., Mayseless & Hai, 1998; Mehlum, 1998).

Using the stress and coping theoretical framework, this study thus sought to examine how conscripts experience, appraise and deal with various aspects of life during first two months of their service, i.e., in the course of basic military training. Aside from being theoretically interesting, better understanding of the dynamics and change in the processes of appraisals and coping with specific sources of stress during military can, of course, be valuable from the practical or applied standpoint. The findings are thus expected to be potentially useful in fostering the processes of adjustment to the military environment and improving the training process and performance of recruits in a variety of stressful situations.

As is well known, the theory views processes of appraisals and coping as critical mediators of unfavorable person-environment relationship and various immediate and long-term outcomes. According to authors, *cognitive appraisals* include processes in which people constantly evaluate the significance of what is happening to their personal well-being, whereas *coping* is defined as a person's ongoing efforts in thought and action to manage specific demands appraised as taxing or overwhelming (Lazarus, 1993). The dynamics of adaptation is seen as an unfolding process of causal antecedents (i.e., individual resources and environmental factors), mediators, and effects (psychological, physiological, and behavioral criteria of adjustment).

The present paper was conceived as a preliminary report on some descriptive data on the measures of central constructs of the theory - cognitive appraisals of stressful situations and coping strategies employed by conscripts, as well as changes in their reported level in the course of military basic training.

METHOD

Sample and procedure

The study was conducted in two time points on a sample of males attending military basic training at the Centre of 'Muzil' in Pula, Croatia. 449 recruits participated in the first part of the study which was completed at the very beginning of their military service, i.e. within 7-12 days of their stay in the Centre. Average age of participants was 21 years (SD=2.59), and the dominant education level was complete secondary school (78%). The sole criterion for the selection of subjects was the basic literacy. Out of the total sample, 421 recruits (93.8%) took part in the follow-up 5 weeks later, i.e. in the last but one week of their military basic training. A selected set of instruments was administered in groups of 60-80 subjects. Data gathering procedure was identical in the two measurement points and lasted approximately 90 minutes per group including a short pause.

Instruments

Sources of stress. 43-item self-report **Problem scale** was designed to measure the incidence and the intensity of specific sources of problems during military service. Each item was assessed on a 4-point scale (1 = not at all a problem; 4 = bothers me a lot). In addition, to examine the content of stressful events we administered a list of potential stressors classified into following 6 categories: housing, relationships with other recruits, military regime, relationships with superordinates, disconnection of civilian life, and unclear situations during military service. Subjects were to choose one of the six thoroughly described **categories of**

[2] The research project entitled 'Sources of stress, coping, and adjustment of recruits during military service' is being conducted by the Department of Psychology, University of Zagreb in collaboration with the Department of Military Psychology, MORH.

problems appraised as most stressful during military service, or within the last week, respectively.

Cognitive appraisals: Primary appraisal was defined as the perception of **stress intensity** with reference to the selected category of problems (on a scale from 0 = didn't make me upset at all, to 3 = it disturbed me very much), **suddenness** of the events (0 = not surprised at all, to 3 - I was totally surprised), as well as the appraisals of **loss, threat** and **challenge**, measured by the scales of emotions (with the total range of 0-3 each). Secondary appraisal was defined as the **perception of controllability** of selected category of problems, and assessed by two 4-point scales related to perceived impact on the **occurrence** as well as the **outcome** of stressful event (0 = no impact, 3 = thorough).

Coping. We administered an inventory containing 11 situation-specific 4-item coping scales measuring: **Negotiation** (α_1=.42; α_2=.57) - including active strategies directed to other persons related to the problem; asking for advice, but also confronting; **Planning** (α_1=.60; α_2=.58) - mainly cognitive efforts aimed at finding solution of the problem; **Active accommodation** (α_1=.60; α_2=.59) - taking concrete, practical actions aimed at better handling the situation; **Avoidance** (α_1=.44; α_2=.50) - describing cognitive or behavioral attempts to avoid or escape from the situation;

Passivization (α_1=.41; α_2=.49) - giving up from the attempt to directly resolve the problem, accepting the situation; **Fatalism and religion** (α_1=.57; α_2=.72) - turning to religion, confidence to the Act of God, or fortune; **Reinterpretation** (α_1=.62; α_2=69) - containing efforts directed to create predominantly positive meaning to stressful event; **Expression of emotions** (α_1=57; α_2=.68) - open expression of emotions, venting of feelings; **Wishful thinking** (α_1=.65; α_2=.67) - describing day-dreaming, desires about the change or disappearance of the source of stress; **Humor** (α_1=.78; α_2=.85) - introducing humor, recognizing amusing sides of the situation; **Seeking social support** (α_1=.48; α_2=.54) - turning to other people and close persons, asking for emotional support. Subjects were to appraise how often they used each of presented strategy in previously selected stressful situations (1 = not at all, 4 = often). Scores on each coping scale are computed by summing the answers on corresponding items and vary in theoretical range of 4-16.

RESULTS AND DISCUSSION

Results on the presence of various sources of stress and their appraised severity as measured by the Problem scale showed to be relatively comparable in the two measurement points. Mean item scores for thirteen items with average appraisals of 2.5 (corresponding to the midpoint of the scale) or higher in either of the time points are presented in Table 1.

Table 1. Mean appraisals of problem severity for selected items of Problem scale administered in two measurement points (N=421) with the corresponding values of the Paired-Samples t-test for the significance of change

Item	*Time point I*	*Time point II*	*t*
4. ...missing family and friends.	2.71	2.78	-1.65
9. ...time passes too slowly.	2.68	2.44	4.53***
14...feeling tired, no sleep.	2.77	2.56	4.38***
16...no sex in a while.	2.89	2.95	-1.49
17...losing too much time in forming and waiting.	2.79	2.65	2.80**
18...punishing all due to mistake of just one soldier.	2.73	2.57	2.88**
21...lack of freedom of movement.	2.64	2.49	3.32***
22...problems with maintenance of hygiene.	2.78	2.55	4.40***
30...not enough time for hygiene and meals.	2.69	2.47	4.29***
31...insufficient amount or poor food.	2.20	2.68	-9.09***
38...cannot help the family to overcome problems.	2.42	2.67	-5.29***
40...not enough free time.	2.66	2.57	1.96*
43...poor toilet rooms.	2.85	2.82	0.81

* p<.05; ** p<.01; *** p<.001

For the majority of items of the Problem scale, slight but significant decrease in average problem appraisals was observable from the beginning to the end of the basic training. Two items showing changes in the opposite direction are interesting to note. These are the item 31 - describing problems related to the amount or the quality of food offered, and the item 38 - stating difficulties on how to help one's own family. As shown in Table 1, these problems seem to become significantly more salient in the course of basic training. According to the average appraisals obtained in the second time point, these are among the most bothersome sources of stress for recruits in the final weeks of basic training.

The data on frequencies and proportions of choice of each of the six proposed categories of stressful situations are given in Table 2 for the two measurement points.

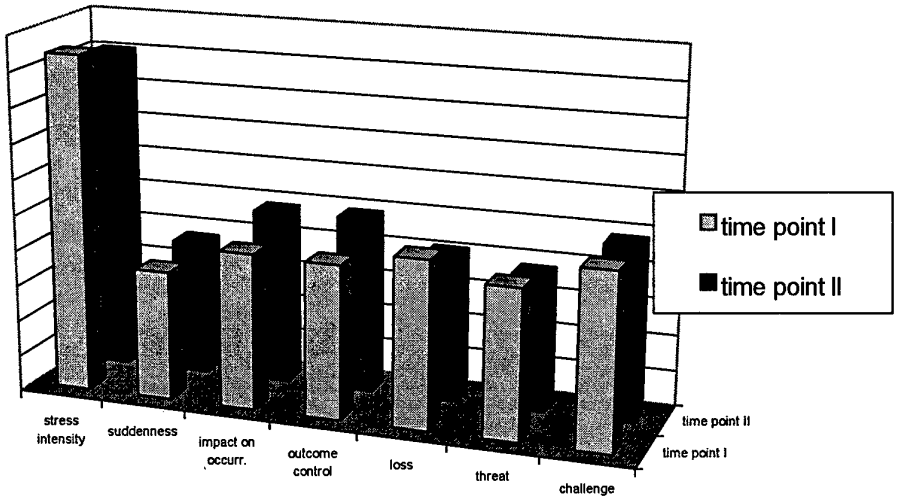
Table 2. Distributions of choice of the proposed categories of stressful situations experienced at the beginning (N=449) and before the end (N=421) of the basic military training

	Measurement point I		*Measurement point II*	
Categories of problems	*N*	*%*	*N*	*%*
Housing	68	15.1	56	13.3
Relationships with other recruits	4	0.9	3	0.7
Military regime	82	18,3	70	16.6
Relationships with superordinates	13	2,9	6	1.4
Disconnection of civilian life	269	59,9	276	65.6
Unclear situations during military service	13	2,9	10	2.4
Total	449		421	

As shown in Table 2, the proportions of choice of particular groups of problems appear to be rather similar in the two measurement points. Problems resulting from *disconnection of civilian life* proved to be the predominant source of adjustment difficulties for the majority of recruits during basic military training. This category was selected as the most stressful noticeably more frequently than all other categories taken together (about 60% and 66% of subjects in the first and second time point respectively). Problems related to adjustment to the *institutional regime* were rated as the most stressful by 18,3% and 16,6% of the sample at the beginning and close to the end of basic training, respectively. Slightly lower percentages apply also for the problems of *housing* in the Centre (15,1% and 13,3%), whereas the number of participants choosing some of the remaining three categories of stressful situations was rather negligible at both measurement points.

Mean values for seven measures of cognitive appraisals with reference to selected categories of stressors, obtained in both time points are presented in Figure 1. Results point to moderately high level of *stress intensity* experienced by the conscripts at the beginning (M=1.89, SD=.73) and before the end (M=1.81, SD=.76) of basic military training. Selected stressful situations were generally appraised as being highly predictable and *expected* (M_I=.72, M_{II}=.75), and the average results on secondary appraisal measures speak of rather low level of *perceived control* over the *occurrence* (M_I=.87, M_{II}=.97) as well as the *outcome* (M_I=.86, M_{II}=.98) of selected categories of problems encountered during basic training. Furthermore, relatively low values were also obtained on the scales of emotions measuring three types of primary appraisals, with mean appraisals of *challenge* (M_I=.98, SD=.64; M_{II}=.97, SD=63) being somewhat higher than those of *threat* (M_I=.84, SD=.61; M_{II}=.76, SD=.64) and *loss* (M_I=.94, SD=.69; M_{II}=.82, SD=.70).

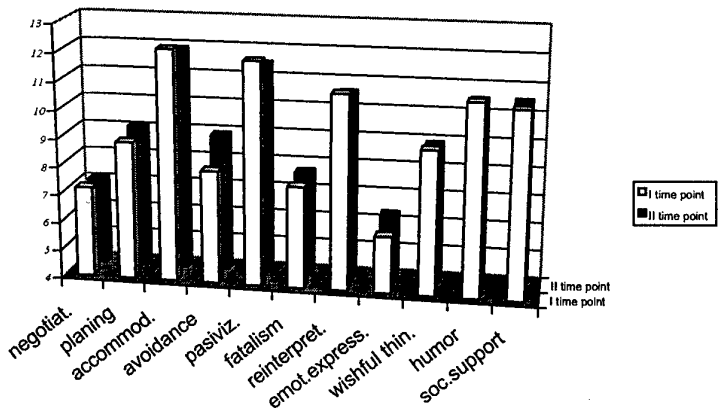
Figure 1. Changes in cognitive appraisals of stressful situations experienced by conscripts during basic training (N=421)



Repeated measures MANOVA revealed significant differences between the results on the set of cognitive appraisals measures obtained in two measurement points ($F=6.08$, $df=7$, $p<.001$). According to results of the univariate tests of significance, observed changes in cognitive appraisals include the perceptions of somewhat higher control over the occurrence ($F=7.78$, $p=.006$) and the outcome ($F=6.83$, $p=.009$) of stressful situations, as well as lower level of threat ($F=13.68$, $p<.001$) and loss ($F=24.03$, $p<.001$) experienced at the end in comparison to the beginning of basic training.

Average profiles of coping with selected stressful situations obtained at the beginning and before the end of basic military training are presented in Figure 2. The most frequently used ways of coping in both measurement points were *active accommodation* ($M_I=12.25$, $M_{II}=11,89$) and *passivization* ($M_I=11.90$, $M_{II}=11.52$), followed by *reinterpretation* ($M_I=10.95$, $M_{II}=10.56$), use of *humor* ($M_I=10.77$, $M_{II}=10.52$) and *seeking social support* ($M_I=10.61$, $M_{II}=10.51$). The lowest means were obtained for *expression of emotions* ($M_I=5.96$, $M_{II}=6.32$) and *negotiation* ($M_I=7.20$, $M_{II}=7.09$).

Figure 2. Coping profiles of recruits in the two measurement points



The differences between the scores on 11 coping scales obtained in two measurement points were tested by repeated measures MANOVA. The analysis yielded significant multivariate differences ($F=9.22$, $df=11$, $p<.001$), and the univariate tests showed that, after the 5-week period, the strategies of active accommodation, passivization and reinterpretation were used somewhat less frequently on the average, and avoidance and expression of emotions significantly more frequently, in comparison with the first measurement point.

As can be seen on Figure 2, no marked differences were found in the general profile of coping between the results obtained at the two measurement points. Nevertheless, the changes observed in the level of usage of particular strategies seem to follow in part the changes found in cognitive appraisals measures. This applies primarily to the observed changes in appraised controllability of selected stressful situation, but also to some objective changes, e.g., in specific situational demands or the amount of restrictions imposed by institutional rules. Thus, for instance, more frequent use of active accommodation strategies at the very beginning of service than at the end of basic training doesn't seem to be surprising. Namely, the content of this scale includes the attempts aimed at fitting into new way of life, learning necessary skills, and the like. Further, the increase in scores on the avoidance scale seems to be attributable to the changes in objective restrictions during basic training, since the real opportunities for positive outcome of some behaviors described by the scale items (e.g., asking for going home, to the city, etc.) prove to be especially low or negligible in the first two weeks of military service.

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WORKING IN THE ZONE: MAINTAINING OPTIMAL READINESS IN U.S SOLDIERS

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ABSTRACT

Soldier readiness is associated with the pace of military operations. For example, in a study of soldiers deployed to Bosnia-Herzegovina, as deployment length increased well being declined. Building on this finding, we hypothesized that there is an ideal zone of operational tempo that maximizes readiness (e.g., performance) for units and soldiers. In order to identify this zone or band of performance, we have begun a two-year study of 10 U.S. Army companies stationed in Europe, representing combat and support units. Pace of operations was viewed as multidimensional and included several measures such as deployment length, work hours, days on training exercises, sleep, and number of workdays per week. Data were gathered using surveys, interviews, and unit records and included issues related to medical readiness, military readiness, and family readiness. Assessments occurred in three environmental contexts: while the soldiers were in garrison, on training exercises, or on deployment to Kosovo or Saudi Arabia. Initial findings revealed that operational tempo measures such as work hours, working on days off, losing leave time, and predictability were important in determining a band of optimal soldier performance. The environmental context, however, was critical in understanding these relationships. For instance, while both training and deployed environments produced an increase in work hours, soldiers assessed in the training environment reported increased military readiness, whereas deployed soldiers reported a decrease in military readiness This emerging model highlights the complexity of identifying a set of predictors for maintaining soldiers and units in an optimal zone of readiness.

The operations tempo (OPTEMPO) readiness model predicts that the pace of military operations affects soldier and unit performance (Castro & Adler, 1997, 1999). The nature of these affects, however, may be non-linear when the pace of operations are examined at both of the extremes (see Figure 1). When the pace of operations are either very low or very high, soldier and unit performance suffers. For instance, if soldiers or units never or seldom conduct training, then overall readiness will decline. Conversely, if soldiers or units are required to work extremely long hours, without time off for recovery, then fatigue may occur, thereby affecting performance.

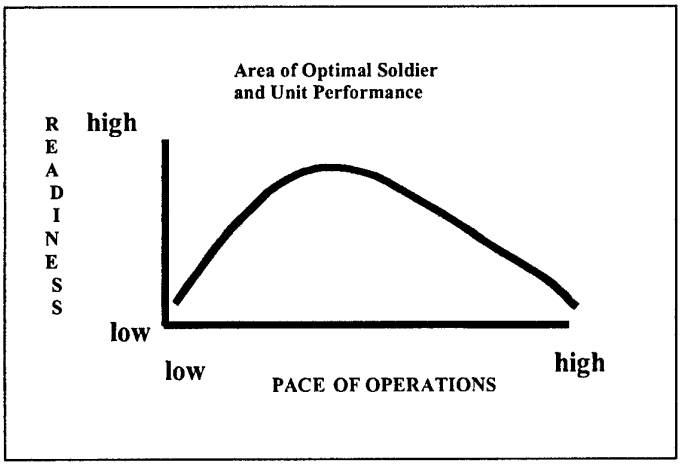

Figure 1. **OPTEMPO Readiness Model**

There are several additional key features about the OPTEMPO Readiness Model that merit comment. First, the area of optimal soldier and unit performance, in general, is relatively wide. That is, soldiers and units maintain a relatively high level of performance across a broad range of OPTEMPO levels. Thus, from a practical perspective, provided that units and soldiers are properly supported, it should be relatively easy to maintain high levels of readiness.
Second, the initial slope of the readiness curve is relatively steep and short, indicating that as the pace of military operations increases there is an immediate gain in soldier and unit readiness. For instance, a single training exercise that is well planned and executed can immediately move a unit from the low-end on the readiness curve to a point on the readiness curve that is well within the optimal zone of unit and soldier readiness.

Third, at the peak of the readiness curve, the downward slope of the curve is gradual and longer than the initial increase in the readiness curve. It should be noted that a significant portion of this decline of the readiness curve is within the band or zone of optimal soldier and unit readiness. Thus, a decline in readiness along the readiness curve does not necessarily mean that soldier or unit readiness is significantly reduced. Instead, one should only be concerned when readiness levels move outside the zone of optimal performance.

Finally, and perhaps most importantly, movement can occur in both directions along the readiness curve. As the pace of operations increases, and units and soldiers are not given an opportunity to recover, readiness levels will ultimately move outside the optimal zone of readiness and result in a decline in unit and soldier readiness. Conversely, if soldiers and units are given an opportunity to adequately recover from high periods of operations tempo then they will move towards the low end of the readiness curve, thereby remaining in the optimal zone of soldier and unit readiness.

In order to begin to understand the impact of OPTEMPO on soldier and unit readiness, soldiers and units must be studied in their key work environments. These environments include garrison, deployments, and training (see Figure 2). All three of these environments together define OPTEMPO. Further, it is also important to assess soldier and units as they are transition from one phase to another. Assessing these transitions from one phase to another is particularly important for peace support operations when units often move through all three phases, garrison

to training to deployment. This pre-deployment garrison phase is perhaps the most intense OPTEMPO period for units preparing to deploy on peace support operations.

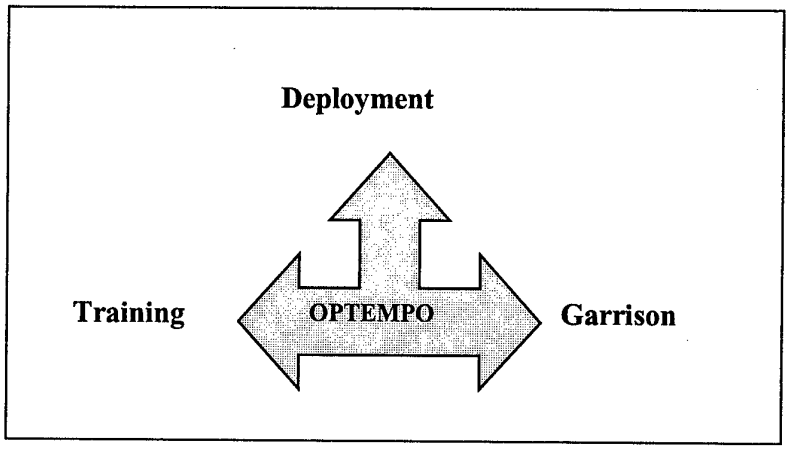

Figure 2. **Key environments encountered by soldiers and units.**

Castro and Adler (p. 87, 1999) defined operations tempo (OPTEMPO) as "the rate of military actions or missions." Thus, OPTEMPO pertains to both individual soldiers and units in all three of the key environments discussed above. In the present paper we define soldier readiness as "the state of being prepared mentally or physically for some experience or action."

An examplar of the utility of the OPTEMPO readiness model is shown in Figure 3. The soldiers in this sample were from the U.S. Army and were stationed in Europe. This sample comprises a subset of soldiers from a larger research program that we are executing in the U.S. Army, Europe to fully examine the impact of OPTEMPO on soldiers, leaders, units, and families. In this garrison example, the measure of OPTEMPO was the number of hours that soldiers reported working during the past week. The readiness indicator selected was the number of alcoholic drinks that soldiers reported having over the past week. In this example, the consumption of large quantities of alcohol was viewed as a decrement to soldier readiness.

As can be seen in Figure 3, and as predicted by the OPTEMPO Readiness Model, when the pace of operations was either very high or very low, the threat to readiness increased. Specifically, when soldiers reported working 7 hours or less or more than 14 hours a day, alcohol consumption significantly increased. In contrast, when work hours ranged from 8 to 13 hours per day, alcohol consumption was relatively stable, with an average of 13-14 alcoholic drinks per week. Thus, in this case, using number of alcoholic drinks consumed per week as the readiness measure (i.e. outcome), we defined the optimal area of soldier and unit performance as including a garrison work schedule that is 8-13 hours per day.

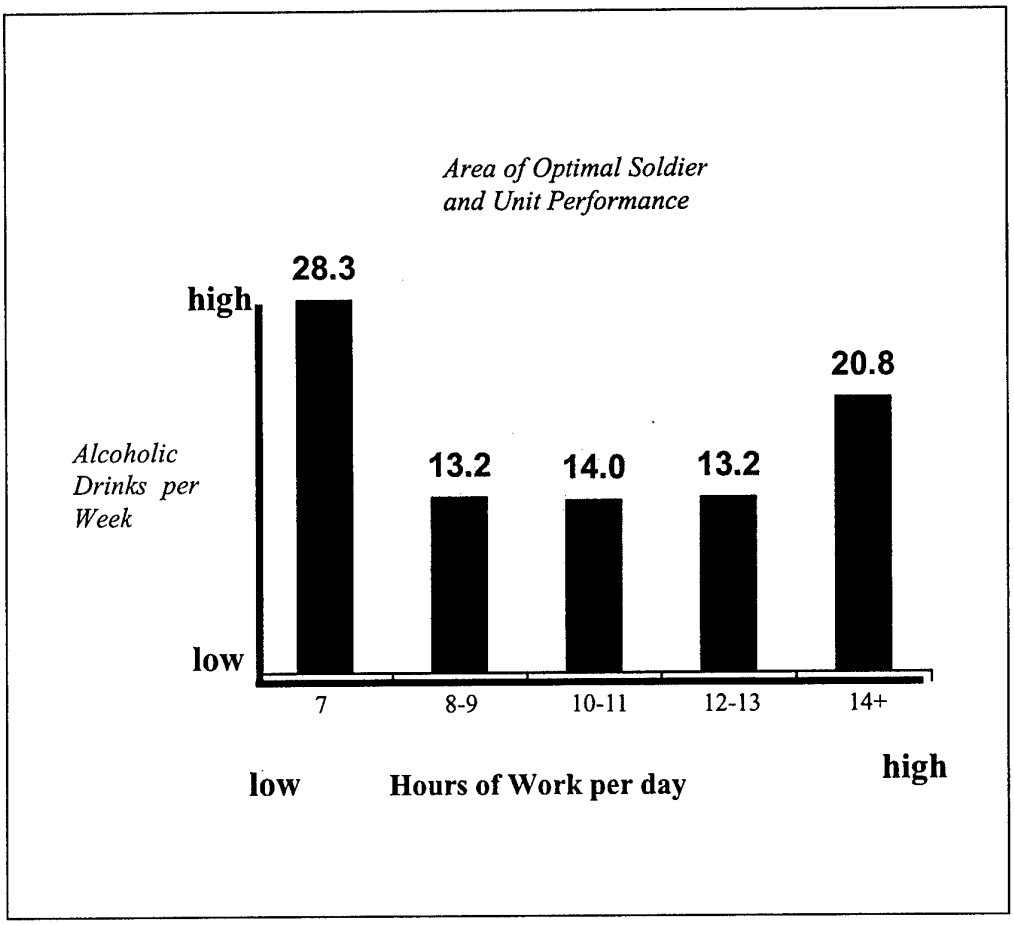

Figure 3. An examplar of the OPTEMPO Readiness Model showing how alcohol consumption and work hours affect optimal soldier and unit readiness.

Figure 3. **An examplar of the OPTEMPO Readiness Model showing how alcohol consumption and work hours affect optimal soldier and unit readiness.**

How military deployments, training events, and garrison activity affect soldier and unit readiness is, of course, very complex. The shape of the readiness curve will depend on a number of important factors: the readiness indicator, the OPTEMPO measure, and the sensitivity of the measuring instruments, to name but a few. And while the OPTEMPO Readiness Model may not capture all of the areas of interest and concern, we do believe that it offers a useful starting point for determining the critical dimensions that are important for ensuring the combat readiness of units, leaders, soldiers, and families.

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SOCIETAL FACTORS, ATTITUDES AND DESIRABLE BEHAVIOURS OF MILITARY PERSONNEL

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ABSTRACT

As with any major organisation, the Royal Air Force must recruit its personnel from a population of young people which has been subject to greater societal changes in recent years than has been the case in the more distant past. Recruits' expectations of what is expected of them and of what they, in turn, expect from their employer are also changing. In particular, we need to be clear about what attitudes and essential/ desirable behaviours we wish our personnel to exhibit. A review of the literature on research into the link between attitudes and behaviours suggested that the most fruitful way ahead would be to concentrate on essential/desirable behaviours and to develop tools to measure them directly. There has been extensive research on work behaviour, much of it focusing on the identification of critical skill areas relevant to collective success in the workplace. How generalisable the findings of these studies are to other organisations, and in particular to the UK military, however remains questionable. This paper will describe our initial study plans to define and measure the essential/desirable behaviours to be exhibited by RAF Personnel. These behaviours are those which should be displayed throughout a successful individual's entire service career, after being inculcated during initial periods of training.

1. The Royal Air Force needs to recruit, train and retain high quality personnel. As such, it must consider both the expectations of its recruits upon joining and, in turn, what it expects of its members. This view was reinforced in the recent Strategic Defence review by the strong commitment to 'people' issues. This paper focuses upon recent and ongoing work in the Command Scientific Support Branch on the elicitation of attitudes and desirable behaviour in the context of a wide range of changing societal factors.

2. The Services must accept that the population from which they recruit is, and has been, subject to a wide range of societal changes over the past 10 to 20 years. There exists a growing culture of individualism, with society being more 'permissible' leading to a far greater emphasis on individual rights, and less on responsibility towards the community or collective organisations. The Services, by contrast, have a ethos based on social cohesion, the supremacy of the group interest, and the values of community and national service. At the same time, we need to encourage individualism in leadership, initiative and self-confidence.

3. Finding the right balance between the rights and expectations of individuals and the collective needs of the Services will be a major challenge as the latter seek to maintain their operational effectiveness. Although some potential recruits will find the ethos of the Services to be incompatible with their individual expectations, there is, on the other hand, evidence that it is the somewhat different ethos and values of the Services which draws many high quality recruits.

4. Life-long learning is a trend, which seems likely to continue with more people pursuing full-time education at some stage in their working life. In general, these trends match the requirements of the Armed Forces for improved cognitive skills and greater individual responsibility, but present the Services with new challenges for meeting increased expectations. To attract and retain high quality recruits, the Services will have to match the career aspirations of an older and better-educated workforce. This in turn will mean the provision of progressive training and career opportunities in competition with other potential employers.

5. In summary, the Services will need to ensure that those values and behaviours which it expects of its personnel are made explicit and inculcated at as early a stage as possible in our recruits' service. This training can only be effective if we understand what attitudes and behaviours are being bought in by our new recruits, in order that essential and desirable behaviours are then acquired and reinforced throughout our personnel's careers.

6. We, therefore, need to assess the attitudes of our new recruits, at an early a stage as possible, to assist our training staff to inculcate the values and ethos which are necessary for an efficient and effective force. Our preliminary research on attitudes and attitude measurement lead us to the conclusion that there are a number of significant problems associated with relating behaviours to attitudes. Although evidence has been found to support a link between attitudes and behaviours, the relationship appeared not to be reliable. The study was therefore refocused to attempt to measure behaviours directly, rather than linking them to specific attitudes. Our task is to identify the core 'essential/desirable' behaviours vital to success, both in initial recruit training and throughout an individual's Service career.

7. Our initial requirement was to develop tools to measure these 'core behaviours'. A wide range of techniques for identifying behavioural dimensions was reviewed and evaluated. Most of these came from job analysis and performance appraisal techniques. Two examples of those reviewed and discarded are:

a. The Position Analysis Questionnaire: a structured job analysis questionnaire. This was rejected since, although it would provide a broad job picture, it was felt inadequate to define specifically effective and ineffective behaviour.

b. The Working Group Technique: this would involve an open discussion, between senior management and other personnel, to arrive at a consensus of which behaviours were considered

to be effective/desirable. This approach was rejected as being unsystematic, and heavily influenced by the seniority of the group members. Further, its output would be unlikely to be based on observable and quantifiable data.

8. The 2 techniques which are being adopted and critical incident and repertory grid. Both seek to identify observable behaviours from individuals who are familiar with the job, and enquire directly about the effectiveness/ineffectiveness of those behaviours. Analysis of the information from the critical incident technique should identify the behaviours which make the difference between success and failure in a particular job setting. The repertory grid technique elicits bi-polar dimensions which are important to an individual's perception of the job. The technique is particularly versatile, for example, it has been used to investigate how a newly introduced organisational culture, aimed to improve the organisation's competiveness shifted values, attitudes, beliefs and behaviours within the work force. It clarified 5 main issues contrasting the established 'old' cud at improving the success of work behaviour can be evaluated and it can also find applicability in both selection and recruitment processes.

10. Our future work programme will take the form of a phased approach, as follows:

a. Initial interviews to explore the effectiveness of both the critical incident and repertory grid techniques in eliciting desirable behaviours for RAF Personnel.

b. The identification of desirable behaviours by extensive interviewing of trade Sponsors, supervisors and staff from both front-line and training units. This should generate a representative view of what are the 'effective/desirable' work behaviours. Once these behaviours have been identified, measurement methods will be investigated and, if necessary, developed.

11. This paper draws heavily on the work of past and present CSSB members. In particular, contributions from Gordon Neil and Karen White are gratefully acknowledged.

AIR FORCE AND WOMEN - A SHORT HISTORIC AND RESEARCH INSIGHT

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ABSTRACT

Women have proved their abilities both as combatants and soldiers, which also applies to women in aircraft, whence banning women from taking part in combat operations means violation of equality and opportunities for gaining military experience as which is a form of gender discrimination.

Women pilots display far superior characteristics compared to general female population, but it is also true that flying, especially military aircraft, considering specific challenges and risks involved, is a far more demanding job compared to most other professions, regardless of the gender performing it.

The author of the article aims to emphasize that, instead of gender criteria, pilots, as well as all other military specialties, should rather be selected primarily on the basis of precise standards of physical and psychological fitness established and valid in the airforce.

Women have taken part in the military in different ways throughout the history of conflict into this day. The example best known to us is women's taking on different duties in Croatian military during the Homeland Defence War.

Since the 1970 the militaries have opened more and more posts to women, although not to all segments. However, except for sporadic cases (such as collective asignment of women in the US Air Force during the WW II), they have not been provided equal systematic guidance and training for the duty. A worthy example of women's engagement in war was that of 1074 women pilots of theWASP , who piloted 12 560 planes of almost all types (smallest and training as well as heavy bomber aircraft), flew over 60 000 000 miles and were instructors for hundreds of other pilots. 38 of them lost their lives while on duty.

They were banned from direct combat deployment, but they were admitted into the military (transport) following the war too.

In the intervention forces deployed in Grenada in 1983 there were also 200 women, among whom 24 pilots, flight engineers and loading supervisors. Women were in crews of air tankers but were also piloting aircraft from the carriers during the counter-terorist intervention campaign in Libya in 1986 (Schneider and Schneider, 1988).

Today in the US military, and some other militaries too, women take part in non-combat military operations (combat support - reconnaissance, transport and training).

Canada in 1987 lifted ban to women in Air Force, and they were sent for combat flight training and included into combat, tactical and anti-submarine helicopter crews (Enloe 1983, Stanley and Segal, 1988).

Norwegian Parliament in 1984 passed the law allowing women into military operations and different specialist duties (either as soldiers, NCOs or officers in the Army, Navy and Air Force). Denmark too in 1988 also lifted all limitations to women in the military.

In Belgium and the Netherlands women are allowed to serve at all duties in the Air Force including combat.

Germany, UK, Greece, Israel and Australia allow women in their military but exclude them from combat (Binkin and Bach, 1977; Enloe, 1988; Stanley and Segal, 1988 - more sources consulted)

Former Soviet Union was among the first countries to have many women in the military - in combat operations and in fighter aircraft regiments too. As many as 91 women earned the title of Heroes of the Soviet Union, among whom 23 women pilots (Griesse & Stites, 1982).

RESEARCH AND EXAMPLES

Research by military psychologists proved women in rear echelons and in combat support services as good soldiers, not a readiness impairing factor (Birkin & Bach, 1977; Johnson et. al. 1978).

In an experimental and controlled initiative in Canada women were assigned to posts in the Army, the Air Force and the Navy, and even in a Canadian base in Africa, which revealed no negative effects on unit effectiveness (Park, 1986). It was followed by a 2-year long controlled research known as "engaging women in combat operations". Very positive experiences in that regard led to lifting ban on deployment of women in combat operations, except for submarines.

Despite psychological studies findings, women in the military have worse prospects for career than men. Promotion demands as a rule are stricter for "female" posts, and exclusion from combat duties is a negative discrimination, as combat-related posts offer quicker promotion and largest compensation (Schneider & Schneider, 1988). In the US military, as in other militaries too, women officers hardly attain senior command levels (colonel rank and beyond).

The same is with the Air Force too. However, more and more research is done on women-pilots:

"Personality and behaviour of female pilots of US Air Force. "Right stuff" or "Pilot personality" refer to male functioning, whereas it is unknown what personality comes into cockpit with a woman-pilot.

Sien and Murray showed that of 5 main characteristics determining successful pilots (neuroticism - emotional stability, extroversion, openness to new experiences, agreement-mindedness and commitment) experienced pilots prioritize commitment or responsibility. The research revealed higher extroversy, agreement-mindedness and commitment, and even more of the positive of "pilot personality" in women. Attitude questionnaire on crew functioning did not detect significant differences between men and women.

Research on cognitive abilities and personality characteristiscs in pilot school attendants - showed women performing well above average on intelligence tests and also better than men on encoding and memory tests, whereas their male colleagues did psychomotor tests too. Women cadets showed more ambition, decisiveness and openness to new experiences, as well as above average intellectual capability than the rest of female population. Gender differences were found to affect performance in cognitive tests and in personality variables too, although the impact on duty performance still is unknown.

4) Research on intellectual abilities of men and women in the US Air Force -
Between intellectual abilities of men and women only moderate differences were found. Men's abilities are variable and hence dense along the IQ distribution. There were no significant differences found between male and female IQ in this research. Pilot population evinces on average high and very high IQ, as a result of manifold selection and self-selection.

- Women pilots in US Air Force - equal or different from men pilots - (King, Collister, Retzhalf, Flyn & James) - according to this research psychological structure of women pilots still has not been studied enough, and for reason of small sample compared to men pilots. Novello & Youssef, however found in their research on 87 women pilots that their psychological characteristics are closer to men pilots' than to the rest of female population. Stress tolerance and emotion control (psychological endurance) make a decisive factor for military pilots, regardless of their gender.

Jerrie (Geraldine) Cobb (7000 flight hours and 3 world records) was the first woman to take all the three stages of the US Mercury astronaute program in 1961. Major Jacquelyn (Jackie) S. Parker was the first American woman member of the F-16 combat squadron. She had dreamed of becoming a pilot, and had learned to pilot aircraft before she passed her driving test, and as a result she made 3000 flight hours on over 25 types of aircraft, encompassing F-16, F-111, F-4, C-141 and KC-135 up to T-38 and UH-60 Blackhawk.

Colonel Patricia (Trish) L. Beckman was the first woman in the world trained and qualified to be a F-15E crew member. By 1999, when she retired, she made a 28-year long career in Air Force and aeronautic industry, with over 3000 flight hours on 66 types of aircraft, the 2-hour supersonic flight episode on F-111 D, and co-piloting the Italian GR-1 Tornado on the honorary flight over Pope's Palace. She wrote in 1995: "Piloting a military aircraft is the most exciting form of aviation. My desire to fly it stemmed from my warrior-like nature".

The name of the first woman selected as a space aircraft member was lieutenant Eileen Marie Collins, previously an Air Force flight instructor on T-38 and commander of C-141. She married a pilot too, and had a daughter.

Asked by a journalist on how she handled being a woman in a prevailingly male surrounding, Diana Doboš, lieutenant and flight instructor on Pilatus PC-9 of the Croatian Air Force, said; "The military maybe isn't a natural setting for a woman, who might deviate from the classical and expected female behaviour seeking male protection. But what a woman can learn in the military is to become independent, to make decisions by herself and to think in a practical and creative way. But she can absolutely learn to do the job equally as well as any male pilot".

People choose pilot training for many reasons, primarily because of inclination towards aviation and the intention to use their talents and be respected for that, but they above all cherish the sense of belonging to the aviation family.

In Croatian Air Force there are five women pilots at the moment, two of them pilot MI-8 and MTV-1 helicopters, and the rest are flight instructors (on U-75 aircraft, on Bell-206 helicopter and on PC-9 Pilatus respectively). There is no restriction in Croatian Armed Forces in engaging women pilots, and female cadets undergo the same selection as male cadets do.

To conclude we may claim that women have during the war too proven to be worthy combatants and soldiers, and that applies to women in the Air Force too. Therefore, to ban women from combat operations means discriminating them in the sense of getting military experience too. Also, women pilots stand out from the general female population, as does flying

(and especially in Air Force) itself stand out from other professions for its specific demands and risks for human organism regardless of gender. The author aimed to suggest that the best practice for each military specialty, and the Air Force too, would be to take established physical and psychological standards and not gender as criteria for selecting pilot candidates.

RESEARCH OF EFFECT OF HYPERBARIC PRESSURE ON DYNAMICS AND EFFICIENCY OF COMPLEX MENTAL PROCESSING

Mirko Drenovac and Nadan M. Petri

Ministry of Defence of the Republic of Croatia

ABSTRACT

The paper presents the experimental plan, methodology and results of research of efficiency and dynamics of complex mental processing in 15 divers (diver demolition specialists) in simulated conditions of diving at the depth not exceeding 30 meters in hyperbaric chamber.

Changes in efficiency (total time) and dynamics (speed, stability and accuracy) of mental processing were determined through 20 measurements (5 measurements per pressure entry ranging from 1- 4 bars) with each examinee, and by means of the following chronometric cognitive tests:

1. test of perception of spatial location of light signal (CRD 311)

2. short-term operational memory test (CRD 324)

3. simple visual orientation test (CRD 21)

4. operational thinking connected with hand and foot coordination (CRD 413)

5. problem solving test (CRD 11)

The research revealed significant changes in processing speed registered at the 2 b pressure (at the simulated 10-m depth) and processing stability at the 4 b pressure (30-m simulated depth) respectively, which affect the mental processing efficiency in general as it decreases abruptly at the 2 b hyperbaric pressure at the simulated 10-m depth, remains unchanged at the 20-m simulated depth and continues to decrease at the 30-m depth.

INTRODUCTORY REMARKS

The study of influence of increased pressure (simulated shallow air-diving) on changes of mental and psychomotoric efficiency of divers and seals is a part of original scientific research within macroproject "Development and Management of Human Resources in the Croatian Military", which has been in progress since 1992 as a part of research of defense strategy of the Republic of Croatia. During thematic workshop "Psychological Functioning Under Extreme Conditions", held during 36th IAMPS, in Split, Croatia, this paper was used to initiate discussion about the problem of influence of extreme conditions, often found in the militaries, on operative capabilities of soldiers, specially on their psychomotoric and mental efficiency.

Nitrogen narcosis is a problem of constant concern for divers and diving physicians. It might seem that really everything has been already said about it, since this phenomenon has been extensively studied, and some extensive reviews are available (1-4). In the diving community it is usually considered that the effects of nitrogen narcosis on performance under the water could be detected at 40 meters and deeper, further impairment occurring with the increase of depth. Behnke and co-workers described performance impairment at 20 meters characterized by euphoria, retardation of the higher mental processes, and impairment of muscular coordination, and at 30 meters as well, characterized by feeling of stimulation, excitement, and euphoria (5). Bennett and co-workers found "...the minimal partial pressure of nitrogen likely to produce an effective deterioration of performance was 3.2 atm (323 kPa), or that in air at 30 m..."(6). Having in mind possible nitrogen narcosis at even shallower depths, Bennett later stated: "No doubt, there are very sensitive tests which, under the right conditions, will show evidence of quantitative narcosis, but it would seem that such evidence is but of academic interest." (1). Since divers, novice and experienced, report from time to time minor psychomotoric problems while air diving in shallow waters, we tested possible nitrogen narcosis effects at 10m, 20m, and 30 m (2.0, 3.0, and 4.0 bars, respectively).

Since most of the similar studies are based on multiple retesting, i.e. on multiple measurement of the same functions the same subjects, in designing such studies special attention should be paid to selection of adequate tests and standardization of experimental conditions, as well as to methodology and analysis of individual differences. There are only few psychological tests applicable for multiple retesting on the same subjects, since the object of measurement changes during the experiment. Many psychological tests that measure capabilities, if used for multiple retesting, become tests of knowledge, thus interindividual and intraindividual variabilities of the results of the measurement diminish.

THE FOCUS OF THIS RESEARCH

The main problem of this research is mental processing efficiency under pressures from 2.0 to 4.0 bars, i.e. understanding changes of total efficiency and dynamical characteristics of mental processing under these circumstances. This makes the frame for the following questions:

- changes of total mental efficiency,
- changes of efficiency of different forms of mental processing, and
- variations of characteristics of dynamics of mental processing,

expressed as indicators of speed, stability, and accuracy of mental processing. Specific objective of this study imposed further problems dealing with the methodology of processing of the obtained data and analysis of the results. Therefore, the paper also deals with the problem of elimination of marked interindividual differences on the level and dynamical characteristics of subjects as well as elimination of effects of exercise in multiple retesting.

METHODS

Subjects

15 healthy male divers, average age of 28.3ą4.6 years, with 5.7ą4.8 years of diving experience, after signing informed consent, participated in the study, previously approved by the appropriate ethical committee.

Apparatus

The experiment was conducted in hyperbaric chamber Draeger-Galeazzi.

Figure 1. Hyperbaric chamber

Performance was tested using battery of computerized tests Complex Reactionmeter Drenovac (CRD-series). Before the experiment, the subjects were trained using CRD-series two hours per day and after three days obtained five results in a row without tendency of improvement. This was considered to be a "stable" result, i.e. "entry level". Amongst hundreds of tests that could be given on CRD-series, only five representative tests (11, 21, 311, 324, and 413) were selected for the study (first digits represent CRD-series instrument number).

Figure 2. Set up of CRD-series instruments inside the chamber.

The sequence of the tests given was from simple to more complicated, i.e. 311, 324, 21, 11, and 413. The goal was to complete any given test as quickly as possible, and with as few errors. Correct hit in every test would automatically results in a new task. We measured total solving time (TT), i.e. total result of mental processing on any given test, minimal single task solving time (TMIN), i.e. maximal speed of mental processing, total "ballast" (TB), i.e. sum of differences between various single task solving times and TMIN, representing "stability" of mental processing, and finally total number of errors (TE), i.e. credibility and accuracy of processing. These parameters could be understood as descriptors of psychomotoric manipulations of certain type or level.

Test 311 was used to measure the ability of visual discrimination of signal localization. This test consists of 60 single tasks. Light-emitting diodes (LEDs) illuminate in random order, and the correct answer is given by pressing the button below the corresponding LED.

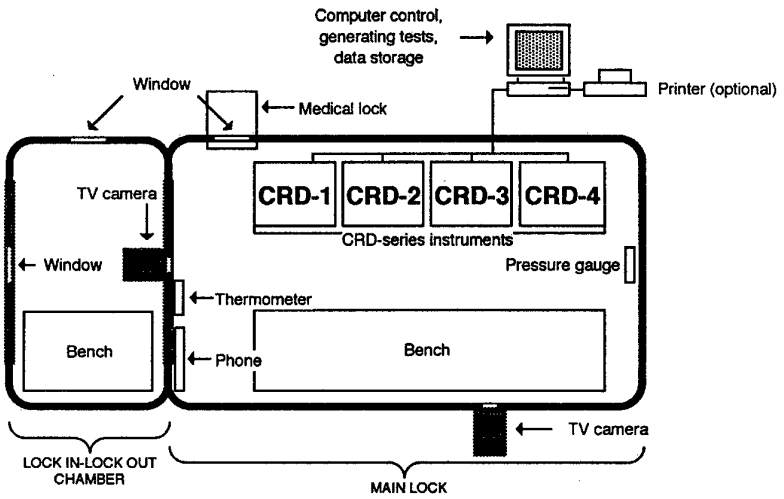
Test 324 was used to measure the ability of actualizing short-term memory. It also consists of 60 single tasks. LEDs illuminate in random order and correct answer is given by pressing the button defined by certain sequence known to the subjects before testing. This position might be left, right or just below the LED. In this experiment the sequence was "left-right-right-below", and the subjects were obliged to actualize this memorized sequence.

Test 21 was used to measure the ability of simple convergent visual orientation. In each of 35 single tasks two LEDs illuminate simultaneously - the first either in the left or in the right column, the second either in the upper or in the lower row. The correct answer is given by pressing the button at the intersection of the two LEDs.

Test 11 was used to measure the ability of convergent thinking, i.e. general ability to perform in problematic situations. This function is provoked by constructing and solving simple mathematical tasks. Out of 35, 18 tasks were addition, 17 subtraction. In each of the tasks two LEDs emit at the same time. One of 12 LEDs positioned in the central part of the instrument indicates which numbers in the upper row and lateral columns should be used to construct mathematical problem. The second LED is one of the two in upper corners, and indicates which operation to use. The correct answer is given by pressing the corresponding button, i.e the result of mathematical operation, in the lower part of the instrument.

Test 413 was used to test the ability of operative thinking or complex psychomotoric coordination (eye-hand). Field "A" of the instrument was used, consisting of four LEDs (upper two for hands, lower two for legs), as well as buttons and pedals. Each of 35 given tasks was a specific command. A combination of two or three LEDs would illuminate at the same time, requiring various combination of hands and legs to be pressed simultaneously for the correct answer.

Figure 3. Hyperbaric chamber and set up of CRD-series instruments inside the chamber (schematic).



Procedure

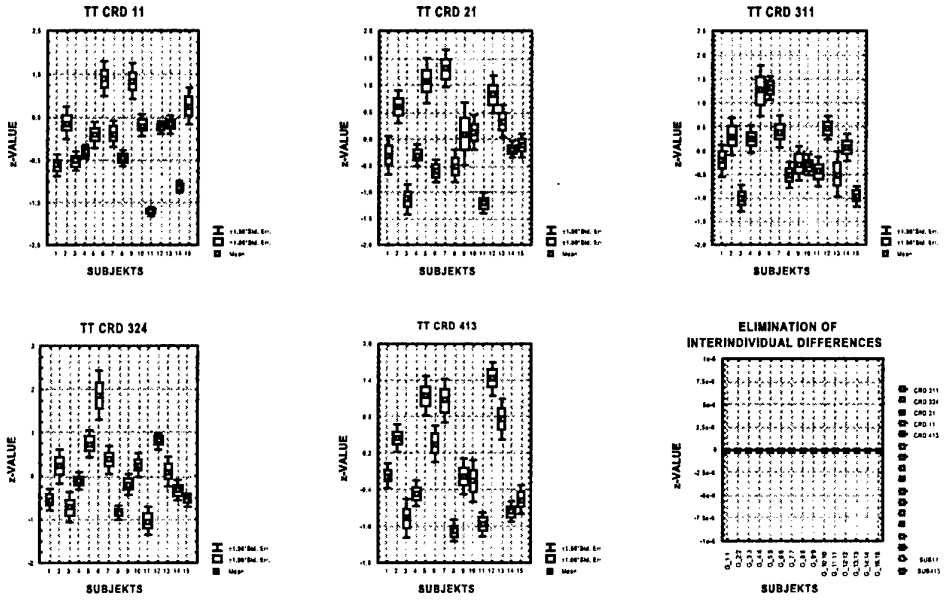
The experiment was conducted in a multiplace hyperbaric chamber (figure 1) by repetitive measuring of the same indicators of mental and psychomotoric functions at 1.0, 2.0, 3.0, and 4.0 bars, respectively, during five consecutive days. The subjects were fully familiarized with the experimental environment during their earlier chamber exposures. During the experiment they were not provided with any feedback about the results of the tests. The testing was commenced five minutes after reaching the pressure. In a group of 8 randomly chosen subjects the testing would begin at the atmospheric pressure, followed by testing at 2.0, 3.0, and 4.0 bars, respectively. Every other day this order was inverted. In the second group consisting of 7 subjects, the subjects were first tested at 4.0 bars, than to 3.0, 2.0, and finally at the atmospheric pressure. Every other day this order was inverted in this group, too. In statistical analysis ANOVA and MANOVA procedures, Median-test, and Kruskal-Wallis test were used. P-values less than 5% were considered significant.

PROCESSING AND ANALYSIS OF RESULTS

Processing of the obtained data was done in three steps. In the first step preliminary analysis of interindividual differences of levels and functional characteristics of mental processing was done, as well as the analysis of changes of these parameters as a function of the experiment.

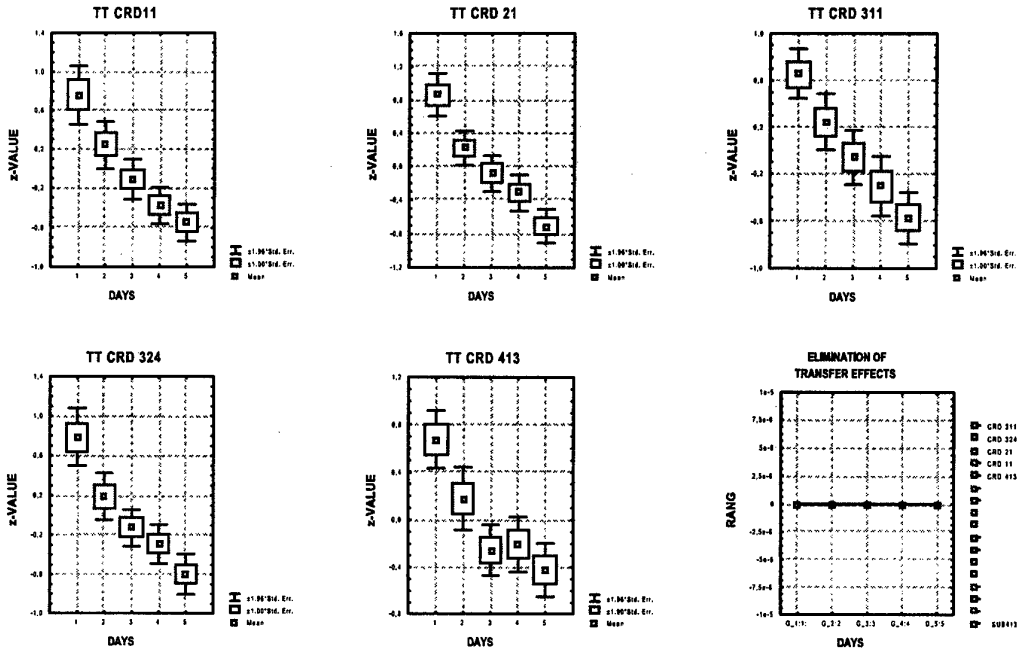
Since significant interindividual differences and significant changes of efficiency and dynamical characteristics of mental processing as a function of duration of the experiment (days) were found, the second step included sorting and transposition of the obtained data, i.e. transposition into standard z-values and sorting into relative rankings. Transformation of the original values into standard z-values was done for every subject individually, and transposition of the original values into relative rankings was done for every subject according to the cycles of the measurement (4 measurements for every "dive"). The effects of these transformations is presented in figures 4 and 5.

Figure 4. Elimination of interindividual differences



Great interindividual differences were noticed in all 5 tests. By transposition into standard z-values, the differences were leveled to "0" (zero).

Figure 5. Elimination of transfer effects.



By transforming the original results into relative rankings significant transfer of experience in solving test problems during the days of the experiment was leveled to "0" (zero).

Only after the elimination of these factors, in the third step non-parametric and parametric statistical procedures were applied in order to analyze the influence of increased pressure on the efficiency and dynamics of mental processing. ANOVA procedures were used to test the significance of differences while solving problems on various CRD-series instruments under various pressures. The results are presented in Table 1.

Table 1. Efficiency of different forms of mental processing under increased pressure.

(ANVAR)	*TESTS*				
	CRD311	**CRD324**	**CRD21**	**CRD11**	**CRD413**
F - test	**4.630**	**.498**	**6.934**	**3.738**	**5.817**
p - level	.004	**.684**	.000	.012	.001
BARS:					
1:2	.014	**.337**	.000	**.164**	**.408**
1:3	.002	**.681**	.018	**.995**	**.138**
1:4	.002	**.286**	**.814**	.054	.015

The function of actual signal localization (CRD-311) changes significantly at 2.0 bars, there are no significant changes in operative memory (CRD-324), simple visual orientation (CRD-21) is significantly changed at 2.0 and 3.0 bars, while more complex mental functions of problem solving (CRD-11) and operative reasoning are significantly changed only at 4.0 bars.

MANOVA procedures were applied to test the significance of changes of mental processing at 2.0, 3.0, and 4.0 bars, respectively, compared to the atmospheric pressure (1.0 bar).

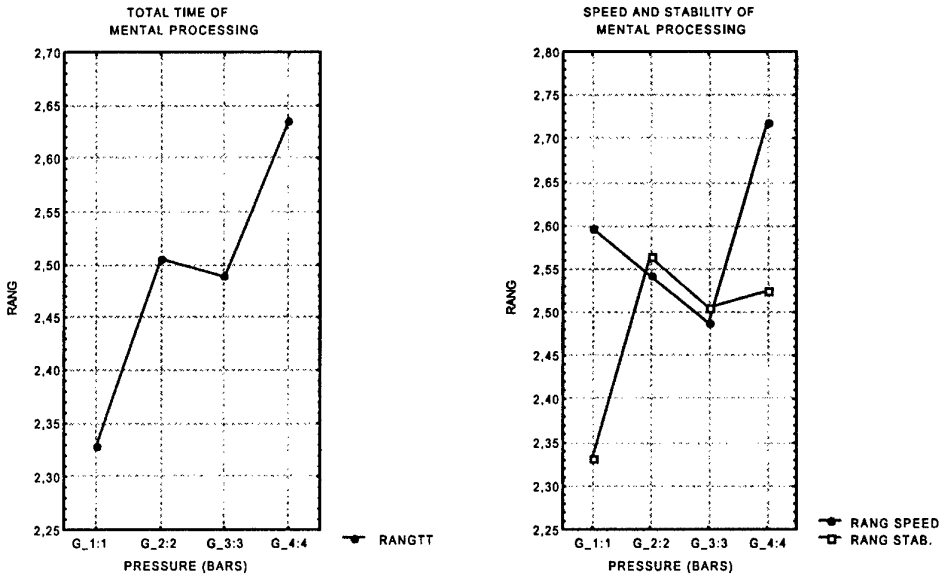
Table 2. Significance of changes of total efficiency of mental processing under various pressures.

(MANOVA)

WILKS LAMBDA	*Rao s R*	*df 1*	*df 2*	*p - level*
.808606	3.8953	15	723	.00000

All the changes were statistically significant. For the further analysis of the relationship between increased pressure and mental processing, additional adaptations of the original data were done. Individual z-values in all 5 CRD-tests were summarized after EVERY sequence of the testing in order to obtain new variables of total mental efficiency (TT) and dynamics of mental processing (TMIN, TB). Also, a new variable of total number of errors was created (TE). Variations of these parameters under various pressures are presented in Figure 6.

Figure 6. Total efficacy and dynamics of mental processing under various pressures



On the graph presented are averages of variations of total mental efficiency expressed as total test solving time of all the tests. This parameter showed deterioration at 2.0 bars already, remained at the same level at 3.0 bars, and was further deteriorated at 4.0 bars. Personal strategy in solving various problems influenced these changes. This is manifested as trend of changing speed (TMIN) and stability (TB) of mental processing.

The deterioration of stability of mental processing was clearly seen at 2.0 bars already, and remained practically unchanged at 3.0 and 4.0 bars. Speed of mental processing was first

increased at the pressures of 2.0 and 3.0 bars, then finally decreased at 4.0 bars. Total number of errors was constantly increasing over the range of pressures, although these changes were not statistically significant.

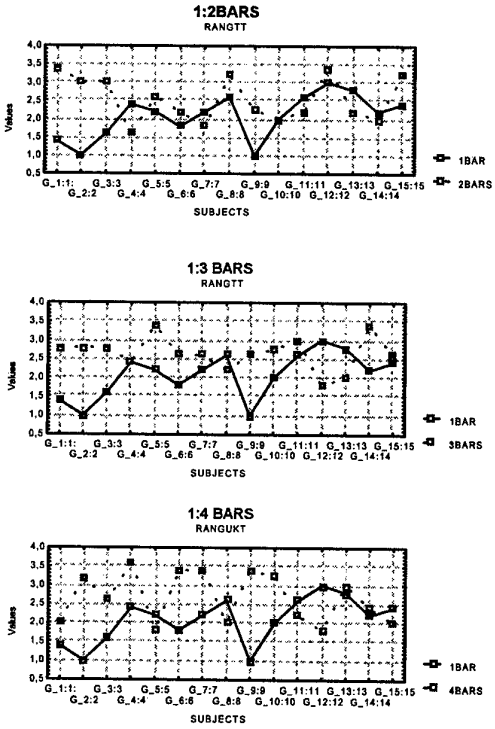
In Table 3 presented are indicators of significance of total mental efficiency and of dynamical characteristics of mental processing as obtained at 2.0, 3.0, and 4.0 bars, respectively, in relation to the same indicators at 1.0 bar.

Table 3. Analysis of total efficiency and dynamics of mental processing under various pressures

(ANVAR)	*INDICATORS* TT	TMIN	TB	TE
F - test	**4.543**	**2.970**	**3.119**	**.982**
p - level	.004	.031	.025	**.400**
BARS:				
1:2	.035	**.500**	.005	**.731**
1:3	.055	**.177**	.034	**.268**
1:4	.000	**.135**	.019	**.124**

Figure 7 presents differences in individual reacting as changes of total mental efficiency under various pressures for every of 15 subjects.

Figure 7. Comparative presentation of individual mental efficiency under various pressures.



Total mental efficiency varies individually under various pressures, but it is clear that the increase of pressure causes deterioration of mental processing in the majority of the subjects.

Table 4 presents the changes of efficiency of various forms of mental activity and of total mental activity in every subject under the pressure of 4.0 bars compared to 1.0 bar.

Table 4. Efficiency of mental processing at 4.0 bars.
(0 - EQUAL, 1 - BETTER, 2 - WORSE)

SUBJECT	311	324	21	11	413	TOTAL E.M.P.	# FUNKCIONS, DECAY
1	2	2	2	0	0	2	3
2	2	0	1	2	2	2	3
3	2	2	0	1	1	2	2
4	2	1	1	2	1	2	2
5	1	1	2	1	2	2	2
6	2	2	2	2	2	2	5
7	2	2	1	2	0	2	3
8	1	2	2	2	2	2	4
9	2	2	2	2	0	2	4
10	2	2	2	2	2	2	5
11	1	1	1	2	1	1	1
12	1	1	1	1	1	0	0
13	2	2	2	2	0	2	4
14	2	2	2	2	2	2	5
15	1	1	1	1	2	1	1
BETTER	5	5	6	4	4	2	
EQUAL	-	1	1	1	4	1	
WORSE	10	9	8	10	7	12	

The changes of mental activity are presented in this table by the following symbols: "0" - if no changes at 4.0 bars in comparison to 1.0 bar were noticed, "1" - if mental efficiency was better under 4.0 bars compared to 1.0 bar, and "2" - if mental efficiency deteriorated at 4.0 bars compared to 1.0 bar.

In the columns marked with numbers 311, 324, 21, 11, and 413, respectively, indicated is the number of such changes. Changes of total efficiency of mental processing are displayed in the column TOTAL DMP, while the last column contains the number of deteriorated mental functions in each of the subjects at 4.0 bars.

In 11 out of 15 subjects deterioration occurred in total mental efficiency, in only one of the subjects mental activity remained unchanged, while in two subjects amelioration was seen in most of the mental activities.

DISCUSSION

The goal of this research was to explain how mental efficiency changes under pressures of 2.0, 3.0, and 4.0 bars. The results offer several answers. Under the experimental conditions total test solving time was significantly prolongued and stability of mental processing deteriorated. However, some other aspects of the problem should also be stressed out, especially the relationship between efficiency and functional characteristics of mental processing and nitrogen narcosis.

Weltman and Egstrom (7) and Weltman, Smith, and Egstrom (8) considered "perceptual narrowing", not nitrogen narcosis, to be the cause of performance decrement at low pressures. We avoided "perceptual narrowing" in our subjects providing full training of the testing procedure before the experiment, and therefore consider that all the changes noticed in this study could be attributed to the increased nitrogen partial pressure effects. In statistical analysis, the results achieved at 1.0 bar were not considered asymptotic. This was based on report by Moeller and co-workers who found their subjects were more engaged under experimental than control conditions (9). The effects of learning were evident, and this is consistent with findings by Synodinos (10), and Moeller and co-workers (9). However, "learning" in this study could not be attributed to "memorizing", because over the days of the experiment the subjects were always assigned with variation of different tests given on the same instrument. This leads to the conclusion that learning is not affected under low air pressures, but also that some adaptation

might have occured over five days of the experiment. However, the evidence for such a conclusion were very weak. According to Franks (11), signal detection tests could be considered the best and the most simple parameters of measuring nitrogen narcosis effect. In our study such a test (311) was the only one showing significant increase ($p<0.001$) of TE over the, but not with pressure increase. We conclude that signal detection tests could not be considered to be the best in describing nitrogen narcosis effects in shallow air diving. Since nitrogen narcotic dose in shallow air diving is definitively very low, more sensitive tests should be used to detect quantitative and qualitative changes of performance. Reports by Whitaker and Findley, about no influence of the order of pressures to which the subjects were exposed to, are consistent with our findings (12). Mathieu and co-workers reported of change in strategy which in their subjects occured at 4.0 bars of simulated air-diving (13). Their subjects had significantly more mistakes on treble crossing test, but the speed was not decreased. On the recognition test, the number of false alarms and correct rejections was unchanged, while the number of hits and misses was significantly decreased. Our results are quite opposite, so some finer evidence of changes in strategy at low air pressures might be necessary in the future. In open water diving there is always negative impact on performance rising from the underwater environment. In hyperbaric chamber, all the changes could be attributed to the increased nitrogen partial pressure effects, provided the subjects were accustomed to the chamber environment and trained to perform in it. We found not only evidence of quantitative narcosis in simulated air-diving to the depths from 10 to 30 meters, but also of changed quality of psychomotoric processing. Therefore, we consider nitrogen narcosis effects at those depths to be not of academic interest only.

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COMMANDING VS LEADING: NEW CHALLENGES IN OUR DAYS

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ABSTRACT

In the 80's, Cold War came to an end. Since then, the military has been called to intervene, with several different kinds of forces and in a wide range of circumstances and places, with the purpose of reducing normative international conflicts borne out of exacerbated nationalisms and cultural identities. Interventions of the kind take place in a multicentric world where the use of authority and dialogue are extremely difficult, and in a time marked by a strong opposition to armed forces.

These premises constitute the guidelines for the reflections presented here. Our aim is to underline the importance of leadership training for future military leaders. Starting with a sample of leadership definitions, which suggest a wide range of different perspectives on this theme, the relevance of leadership research and theories as well as of the most critical aspects for its comprehension and exercise are emphasized.

This presentation ends by highlighting the need of formal education and instruction and training aimed to the development of several skills that will enable the military leader to be a more "humanistic leader", increasing the credibility of their actions.

INTRODUCTION

The correspondence exchanged between Einstein and Freud reveal that even those great men of science did not believe that in the time to come no man would be able to visualize practical and feasible methods to put an end to wars. Distortions of reality, prejudice, discrimination, and victimization processes will always push humankind to conflicts and wars (Blumberg & French, 1990).

After Cold War, the following threats to Peace became evident: a) nuclear, chemical and biological weapons proliferation; and b) within-nations (rather then between-nations) normative conflicts, consequence of exacerbated nationalism's and conflicting cultural identities (Berger, 1999). Military threats are not extinguished, nor is the existence of Armed Forces.

The global order of the world became multicentric, with an infinity of sovereignties and authorities in action (Burk, 1998). One can wonder if the end of Cold War was not the beginning of a new era of conflicts (Dandeker, 1998), in a time when military service tend to be considered a profession.

The object of this presentation is justified for the following reasons: First, we would like to believe that Einstein and Freud are not, anymore, within the reason, and that the nations can solve their internal crises through pacific means; second, it is evident that the use of force to solve within- or between-nations conflicts is in what we can call "order of the day".

Military leaders are in the need of additional skills and capabilities in order to be "good" leaders. This need is more evident nowadays, when the armed forces are "on call" to intervene in sensible areas where the use of dialogue is extremely difficult, and in a time when military profession suffers from, although relative, social devaluation or, in extreme cases, a strong opposition even to its existence.

WHAT IS LEADERSHIP?

Luvaas (1989) suggests that certainly Napoleon Bonaparte would agree with Clausewitz in his assertion of what is a "good" leadership. For Clausewitz, a good leadership emerges when two different kinds of qualities are combined: a) qualities of the intellect, which can be trained and cultivated, and b) qualities of the temperament, which can be improved through determination and self-discipline.

When defining the concept of leadership, academics take into consideration diversified aspects: what a leader actually do; group processes; a mean to exert influence or to persuade; capacity to deal with non-followers. In Table1 we present a pool of definitions.

Table 1 – Definitions of the leadership

ϒ *Leadership is the capacity to lead a man to do what we want him to do, in the way we want it to be done, because he wants to do it* (*).
ϒ *Leadership is vision, motivation, organization and action* (**).
ϒ *Leadership is influencing the others, giving them a goal, a direction, and motivation* (†).
ϒ *Leadership is... to set a good example... to inspire confidence and loyalty... to insist on high standards ... to keep the teams working ...* (††).
ϒ *Leadership is a process depending ultimately on the willingness of the followers to move toward the goal set by the leader* (‡).
ϒ *Leadership is to reach a goal using human aid* (‡‡).
ϒ *Leadership is the process whereby one or more individuals succeed in attempting to frame and define the reality of others* (§).
ϒ *Leadership is a shared responsibility* (§§).

Sources: (*) Gen. Eisenhower, cit. por McNeil & Clemmer, 1988; (**) Brown, 1990; (†) FM 22-100, 1999; (††) Coleman & Barrie, 1990; (‡) Ulmer, 1989. (‡‡) William Prentice, cit. McNeil & Clemmer; 1998; (§) Hunt, 1991; (§§) Kouses & Posner, 1988.

Military leadership is an interpersonal process characterized by affective or personal ties between the leader and his followers. It is the level of exigency and the danger involved that differentiate military from civilian leadership.

Brown (1996) asserts that one of the leadership's functions is to unite people around common goals. Leadership can even be efficacious without the exercise of any of the three well-known sources of power: power of reward; power of coercion; legitimate power (French & Raven, 1959). The possession of all these three sources is not a synonymous of success. While these three sources are attributed by the organization and are related with authority or command (Bull, Bustin, Evans & Gahagan, 1983), other two, referent power and skillfulness, are personal sources to be developed (Ivancevith & Donnelly, 1970; c.f. Gallagher, Rose, McClelland, Reynolds & Tombs, 1997). As a way to have influence, leadership is far above mechanical compliance to customary guidelines that come from the organization superior levels (Katz & Kahn, 1996).

LEADERSHIP AND MANAGEMENT

In the realm of Armed Forces there is more and more an emphasis on modern management over traditional leadership. According to Janovitz (1960), this shift on emphasis occurs when authoritarian domination changes to a greater reliance on manipulation, persuasion and group consensus. The heroic leader will be replaced by the military manager, who is responsible for a more complex military technology (Segal, 1981).

Although management also includes "enterprise spirit", the focus of its orientation is on the individual willingness to maximize results, founding decision making on rational calculus (Mucchielli, 1979). On the contrary, leadership's function is more subtle and pervasive, integrating more and more individual needs with organizational goals. While management is concerned with activities which are aimed to bring consistency and order to the organization, leadership is more concerned with adaptive or constructive change (Kotter, 1990). Maybe why Mintzberg (1973) asserted that the leader role can be seen as the most significant of all management roles (cit. In Broedling, 1981).

The observation of Table 2 allows us to understand the essence of the different meanings that are attributed to the two terms: leadership and management.

Table 2 - Management and Leadership in Word Pictures

Management	Leadership
Path follow (*)	*Path finding (*)*
Not emotional (**)	*Passionate visionary (**)*
Tell (**)	*Ask (**)*
Talk (**)	*Listen (**)*
Has subordinates (**)	*Has followers (**)*
Systems-centered (**)	*People-centered (**)*
Doing things right (*)	*Doing the right things (*)*
Maintains (**)	*Originates (**)*
Controls (**)	*Inspires (**)*
Stands apart (**)	*Seeks company (**)*
Structured (**)	*Flexible (**)*
Accepts the status quo (**)	*Challenges the status quo (**)*

Sources: (*) Adapted from Bain & Mabey (1999); (**) Adapted from Bennis & Nanus (1985)

MILITARY LEADERSHIP AND ETHICS

Leadership is not a value-free enterprise. One can not admit an incompetent or morally insensible military leader. Such a leader could allow unnecessary loss of lives (Wakin, 1981). Much in the same way, personal example from the leader is not enough. According to

Clausewitz (1976), it is only when fatality (or crisis) shows its face that a commander's character is actually put to test. Military leadership is tied not only to the essentials qualities of its efficacy, but also to its moral authority, integrity and credibility (Brown, 1996).

Based upon studies on UU. SS. Army and Air Force officers, conducted at Harvard University, Lewis, Kunhert & Maginnis (1989) describe three stages of development that characterize three kinds of leaders differentiated through several critical character aspects: a) the operator, centered on his goals and agendas; b) the participant, centered on his relationships; and c) the self-determined, defined through his involvement with internalized values and ideals. Most important in this study is not only the need for instruction to focus character development but, as well, the importance of exploring the links between the officer's developmental level and his performance under critical decision-making situations.

Much as the American Manual FM-22-100 (Army Leadership Be, Know, Do), Sorley (1989) asserts that the essence of military leadership is character and courage (e.g., moral courage). Because Armies are more and more professionalized, it is more justified that ethical standard should not be incongruous with the patterns revealed in military life. The leaders have the responsibility to assure that, through:

- their professional and personal behavior examples;
- communication to all subordinates of the standards to be followed;
- measures that assure that the environment encourage and support ethical behavior;
- the commitment to do what is right to do

Starting from the concept of ethics, Buckingham (1985) analyzed some of the resulting tensions of the "use of authority ", the "use of military force", of "loyalty to organization or political guidelines vs. adherence to a personal conviction", or the tension that can arise between "the persons and their missions". The author values, in his analysis, the importance of information diffusion. He ends by suggesting a conscience examination on the achievement of goals and a reflection on actions: do they contribute to national defense? Are they consistent with the protection and enhancement of life?

As we can see in Table 3, there are several traps related to ethical behavior of the leaders (Johnson, 1989). The best way to avoid those traps is to reinforce education, instruction and training, which has to be extended to crisis and potentially unsuccessful situations (Stockdale, 1987).

Table 3 - Ethical Traps and Issues to Military leadership

☞ Danger raised by the acceptance of various forms of **ethical relativism** or the **blurring** of right from wrong. We can not hide the truth and not blame the society
☞ The exaggeration of **loyalty syndrome**, where people are afraid to tell the truth.
☞ The anxious worry over image, where people are not even interested in the truth.
☞ The **drive for success,** in which ethical sensitivity is bought off or sold

Sources: Adapted from *Johnson, 1989.*

TRENDS IN THEORY AND RESEARCH

Trait Theory

TABLE 4 synthesizes the trends in theory and research on leadership

Table 4 - Trends in leadership theory and research

Period	Approach	Core theme
Up to late 1940s	Trait approach	Leadership ability is innate
Late 1940s to late 1960s	Style approach	Leadership effectiveness is to do with how the leader behaves
Late 1960s to early 1980s	Contingency approach	It all depends; effective leadership is affected by the situation
Since early 1980s	New leadership approach (includes charismatic leadership)	Leaders need vision

The trait theory values personal qualities of the leaders, asserting that those qualities are innate, and not acquired. However, the number of qualities referred as characteristics of the "good" leader is enormous.

Based upon several interviews with organizational executives, the Alexander Hamilton Institute (1990), in New Jersey selected the following traits to be considered: energy; perseverance; education and scholarly; intelligence; good judgement; personality; self-confidence; creativity and initiative; objectivity and balance; and enthusiasm and optimism.

According to Stogdill (1974) review, "several lines of evidence show that certain personality dimensions are consistently related to rated leadership effectiveness" (Hogan, Curphy & Hogan, 1994). This is the case with the following personality factors: surgency, emotional stability, conscientiousness, agreeableness and intellectuality. But the effectiveness requires both the presence of these positive characteristics and the absence of what the same authors called the "dark side" of personality characteristics (i. e., personality disorders reporting in DSM-IV). The problem is that frequently the dark side tendencies are difficult to detect (Harris & Hogan, 1992).

As it is referred in FM 22-100 Manual (1999), leaders are, at the same time, subordinates, and they will be all guided by the same set of values. In the same Manual leadership is characterized as a continuous learning process (Bruce, 2000), with the attributes and capability to action (see Table 5)

Table 5 - Attributes, Skills and Actions of the Leader

Attributes "be"			**Actions "Do"**	
Mental	**Physical**	**Emotional**	**Influencing***	**Operating***
Will	Health fitness	Self-control	Communicating	- Planning
Self-discipline	Physical fitness	Balance	Motivating	- Executing
Cultural awareness	Military/professional bearing	Stability	Decision making	**Improving***
Confidence	**Values**	**Skills "Know"**		- Developing
Intelligence	Loyalty; Duty; Honor;	**Interpersonal***	**Conceptual***	- Building
Initiative	Respect; Integrity;	Training; Teaching	**Technical**	- Learning
	Selfless service;	Counseling;	**Tactical***	
	Personal courage	Delegating;		
		Motivating		

* The resulting tactical skills are different for the direct, organizational, and strategic leaders.

The driving forces behind leadership actions are the need for achievement, the search for power, the drive to become wealthy, the desired to be recognized and the urge to attain inner satisfaction (Hamilton, 1990). It is crucial that the leaders have the predisposition to be leaders (Hunt, 1991).

Among the limitations of the trait approach, we can find the difficulty to select leaders and managers (Mitchell & Larson, 1987) and the ignorance of the effects of subordinates upon leaders, the involving environment and the situation itself (Szilagyi & Wallace, 1990).

Leadership Styles

The leadership styles is concerned to what the leader does or allows to be done and how he actually does it (Szilagyi & Wallace, 1990). It is based on the premise that efficient leaders make used of a set of particular behaviors to influence the individual and the group to reach certain goals, resulting in a greater productivity or efficacy, and increased moral (Szilagyi & Wallace, 1990). The style approach suggest that leaders "can learn how to be effective leaders" (Chmiel, 2000). However there is not a single technique that "is the best for every situation" (Hamilton, 1990). The competent leaders show mixed elements from all styles (FM 22-100, 1999).

Based upon several studies (being those carried out at Ohio's and Michigan's Universities the most referred), it is possible to present a synthesis of the most known leadership

styles (see Table 6) (Cf. Hamilton, 1990; FM 22-100, 1999; Szilagyi & Wallace, 1990; Yukl, 1980).

Table 6 - Leadership Styles

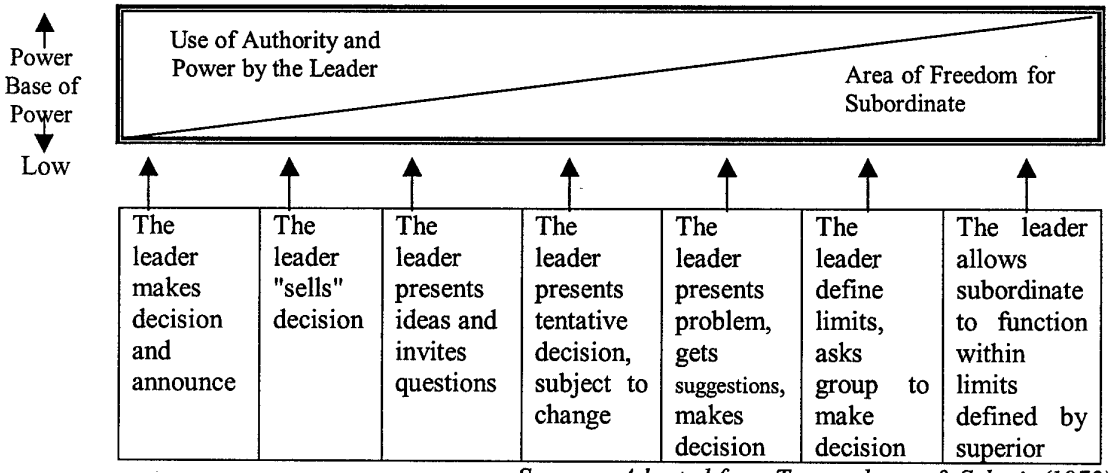
Styles	Most suitable	Least suitable
Autocratic Forceful, directive, commanding	On emerging; when time is critical; with junior leaders in hierarchy.	In emerging, complex, or ambiguous situations.
Participative Involves an exchange leader-follower	In emerging, changing and problem-solving situations.	In structured, rigid and emergency situations. With lowers leaders in hierarchy.
Democratic Between autocratic and participative leadership. The leader takes his employees' views in account.	For situations that are difficult to diagnose; at the beginning of new methods.	In centralized networks and large groups
Task-oriented Similar to the concept of autocratic leadership	Idem autocratic style; when it is possible to make a close supervision.	Idem autocratic style; and with subordinates insufficiently prepared.
Follower-oriented Idem style participative	For short -term projects.	Idem autocratic style; when the environment is not favorable.
Consideration-oriented	In conjunction with task-oriented approaches.	When the confidence is weak, there are time constraints, and the environment is hostile.
Inductive Leaders encourage the work process allowing maximum degree of self-government and self-discipline.	In conjunction with consideration-oriented and task-oriented approaches.	For executives who are autocratic by nature.
Delegate, or management by objectives Freedom to pursue the objectives.	In higher echelons; when there is agreed upon objectives.	With the rank and files employees

Sources: Adapted from Hamilton, 1990; FM 22-100, 1999; Szilagyi & Wallace, 1990; Yukl, 1980.

Contingency Theories

In this approach the goal is to select the leadership style which better fit for the situation. On fig. 1 is presented the model of Tannembaum & Schmit (1973).

Figure 1- Continuous of Leadership Behaviors



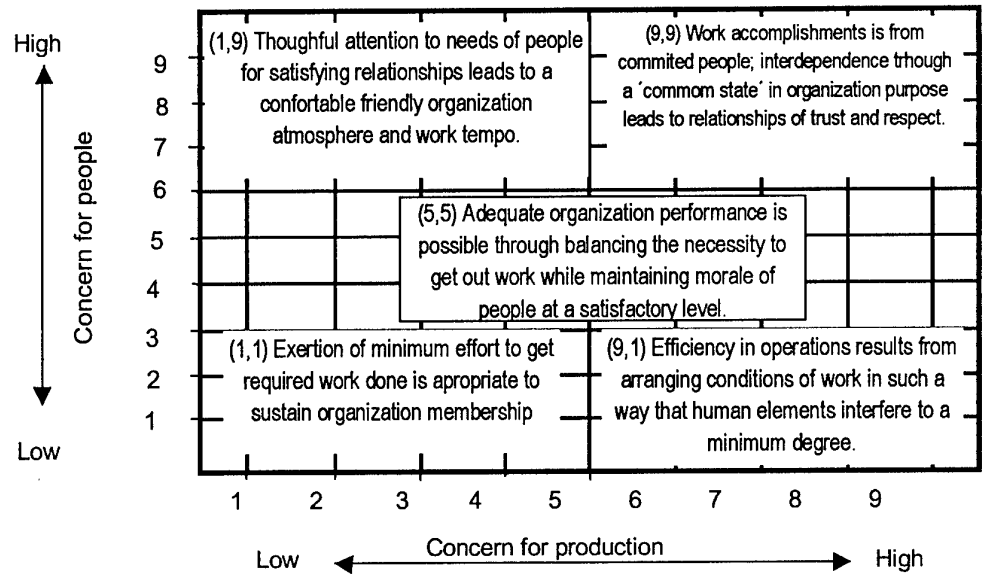
Sources: Adapted from Tannembaum & Schmit (1973).

Within this approach, the leader in order to diagnose a situation has to examine a) situational characteristics of him/herself and of the subordinate; b) group factors; c) organizational factors. Although it offers the leader a range of seven options to choose from

(Bothwell, 1983), this approach has as a disadvantage the fact that it has not taken into account the influence that subordinates' behavior may have upon the leader's (Szilagyi & Wallace, 1990).

Black and Mouton (1968) produced a management grid showing five managerial styles (fig. 2)

Figure 2 - The managerial grid



Source: Adapted from Black & Mouton (1968)

The five "pure" styles the authors identified are the following (cf., Bothwell, 1983):

1.1- Impoverished or laissez-faire.

1.9-Country club management

9,1-Task management or authority/obedience management

5,5-Middle-of-the-road management

9,9-Team management. This balance between personal needs and work musts is highly desirable. It is, however, very difficult to reach this condition (Rees, 1991).

Fidler's contingency model (1967), which defines leadership's efficacy through team's efficacy, is probably the most extensive research program on situations' contingent traits approach. Base on the leader's attitude towards the "least preferred coworker", the "task structure", the "power position" and the "leader-group relations" this model is concerned with two leadership orientations: the task-oriented-style and the relationship-oriented style.

Fiedler's theory received some critics on the account of its simplicity and for being too static. More recently Fiedler & Garcia (1987) introduced three news parameters: cognitive capacities, intelligence and stress.

The Means-End Path-Goal model (House & Mitchell, 1974) and the Situational Leadership model (Vroom & Yetton, 1973) suggest the use of different styles when in different situations or circumstances.

The field of situational theories is extensive (cf. Vroom, 1976; Andrissen & Drenth, 1998; Furnham, 1999). In a given situation, a more efficacious leadership depends upon the way the following factors are mixed and the degree of that mixture (Hamilton, 1990):

- There is a mutual respect between leader and subordinates
- The work process is specified and inflexible
- The power to reward or punish that is inherent to the leader's position

Being this combination relatively rare, research has shown that in most favorable or unfavorable situations, directive or authoritarian leaders are the more successful. In Armed Forces, however, nothing is clearly favorable or unfavorable to the leader. Uncertainty walks

side by side with roles, tasks and goals defined. In those actions, the leader that tries to reduce tensions, conflicts and stress is the more likely to get productive results (Hamilton, 1990).

Each leader must seek for the style that best fits him/herself and to the lived situation, and take in consideration that if in leadership there exists the leader *and* the followers, the leader's image must transmit balance and confidence. The leader's image can change between the following styles:

- φ Active/demonstrative VS. Passive/reserved.
- φ Distant/remote VS. Lose/warm styles.
- φ Status, ceremony, and prerogatives.
- φ Dependence VS. Overdependence
- φ Perfectionism VS. Excellence

New Leadership

The word charisma has been employed to describe someone who is flamboyant, who can persuade others of the importance of his or her message (Bryman, 1992). According to Weber (1962), the charismatic leader is treated as if he/she is endowed with some supernatural qualities or powers or, at least, specifically exceptional, and hostile to the persecution from the self-interest. Opposing to Weber's assertion, which he referred to as extraordinary charisma, Shils (1968) suggest the existence of attenuated charismatic figures, dispersed by all the society, which obey to the law and respect the collective authority.

An objective of who wants to be a leader may be to develop a dynamic and charismatic personality. In Table 7 are presented 10 qualities that any charismatic leader must develop (Brewer & Russel, 1998).

Table 7 - Qualities of a Charismatic leader

🕮 Have a strong sense of humor.
🕮 Build a mystique around yourself.
🕮 Look like a winner and act like one.
🕮 Be committed to what you are doing.
🕮 Be interested in others and show kindness.
🕮 Be known for the strength of your character.
🕮 Prepare and work hard at every task you do.
🕮 Have grace under pressure (J. F. Kennedy).
🕮 Steadily advance in the direction of your goals.
🕮 Have big dreams, a vision and reach for the sky

Sources: Adapted from Brewer & Russel, 1998

Efficacious leaders learn how to elicit the imputation of charisma by their followers. A common dimension for behaviors of charismatic leaders lies on self-denial and self-sacrifice, in a demonstration of their "the commitment to the transcendent values" (Faris, 1981).

A recent trend on leadership studies lies in the distinction between transformational leadership, that focus on the inspiration, the vision and the changing, and transactional leadership, that bring to focus the technical base of accomplishment and of rewards and punishment (Furnham, 1999).

Influence activities of transformational leaders amplifies the impact from transactional leaders (Deluga, 1991). According to FM 22-100 (1999), transformational style allows to take advantage from the use of the skills and know-how of experienced subordinates, whom can produce the best ideas on how to accomplish the mission.

Bain and Mabey (1999) defend the idea of *inspirational* leadership as well as of *checking* leadership. In inspirational leadership, the leader is very much visible and is a role model; checking leadership lies on organizational goals transparency.

Kouses and Posner (1988) identified 5 attitudes, which they called *behavioral methods* or *practices*, and 10 compromises that remarkable leaders have in common. Those attitudes are:

a) to defy the process; b) to inspire a shared vision; c) to prepare the others to act; d) to model the way; and e) to encourage the heart.

Much in the same way, Kinlaw (1989) identified 5 characteristics of *superior* leaders: a) establishing a vision; b) stimulation of new competencies; c) help in overcoming obstacles; d) leadership by example; and e) including others in their successes.

Penteado (1986) asserts that leadership is not teachable but can be stimulated. Much in the same way Linvingstone (1989) underlines how important it is for the leaders to have confidence in their capabilities to help followers to develop. Furnham (1999) considers the *Pygmalion effect* (the capability to develop the potential of followers) as very important. In a similar way Sims and Lorenzi (1992) point out that, in order to be a exceptional leader, one has to built an environment that lead the others to orient themselves. This can be done through self-management practice; by being an example of self-leadership; and by creating positive thinking patterns.

In a connective and interpenetrate era, when the connections between concepts, persons and environment are progressively more stretched, when physical and political barriers no longer protect against external attacks or constitute obstacles to locomotion and when a new sovereignity emerged, environmental sovereignity, Lipman-Blumen (1999) defends the promotion of a *connective leadership*, based upon the paradigmatic changes that, for this author, are now occurring on leadership (see Table 8).

Table 8 -Connective Leadership Model

Direct Group- dominates their own tasks.
Intrinsic style - exceeds.
Competitive style - surpass performance.
Power style - assumes command.
Relational group - contributes to the tasks of others.
Collaborative style - join forces together.
Contributive style - helps.
Vicariate style – mentor
Instrumental group - maximizes interactions.
Personal style - convinces.
Social style - establish nets.
Confident style - give power.

LEADERSHIP AIMING TO THE FUTURE

The journey to understand leadership is a never-ending one (Lipman-Blumen, 1999). According to Fachada (1991), based upon readings on the conclusions extracted from recent studies and research, one has the feeling that efficacy, production and gains are much more valued then persons, values and relationships.

In Portugal, and particularly in the Army, the word "Leader" is not much in use. More commonly it is used the word "Command". In the *Dicionário Universal da Língua Portuguesa*, a major dictionary, the verb "to command" means "to direct, to give orders, to lead, to be at the head of, to dominate". But what I learned through my career is that "to command" is not only "to give orders" but also "to be at the head of with others, with their collaboration and enthusiasm".

The Ayto's Dictionary of Word Origins, (1990) makes clear the subject. *Commandare* is a verb that came from the Latin, formed from the intensive prefix *com* (which means *together, in association, simultaneously*) and from the verb *mandare* /which means *entrust, commit to someone's charge,* and also *order*). *Commandare* is, then, to lead with the others, in the better order and not disorder and against the others. The greater difficulties that a leader faces are raised by human problems resulting from knowledge and from interpersonal relationship

Commandare, in our days, must be acted as a *humanize leadership*, and not only as a defense leadership of human rights or state superior interests, with two different weights and measures. This is extremely important in a time when the internationalization of the military

profession, and the opening of its traditional ethos to the dimension of globalism (Carrilho, 1999) may originate some values confounding.

When a *command* is exercised, humanize leadership is essential, in the words of Gardner and Lasking (1996). There is a need to better understand the arena where leadership occurs, that means, the human mind. The participants have a history, a message, an organization, and a technical knowledge that only is absorbed if credibility is gained and sustained. Leadership is a meaning-management process (Smith and Peterson, 1988).

Being leadership an observable process, constituted by observable techniques that may be learned (Kouses & Posner, 1993), it is important for futures leaders to be trained in several different competencies, taking advantage of Social Psychology, Organizational Psychology and Behavioral and Cognitive approaches (Pamplona, 1987, 1990, 1991, 1992, 1993, 1996; Pamplona & Costa, 1993; Pamplona & Oliveira, 1996), dealing with the art of *delegation,* of carrying on efficacious meetings, of problem-solving, decision making, counseling, assertiveness, anger control, empathy, moral reasoning, cooperation, and so on.

To know how to lead is crucial for the efficacy of all the organization. That is why it is important its identification at the different levels and to improve its potential (Bain & Mbey, 1999).

Leadership is "given" by the followers and the organizations of the future will make an exigency for leadership at all levels, and not only at the top level (Gardner, 1999).

In promoting leadership one can not forget that individuals aspire to be considered and recognized by them. Mentalities of today they do not easily adapt to the more traditional styles of *command* (Peyrelongue, 1993). But constructing leadership does not include only the face-to-face influencing process, but also the indirect influence, which implies education and instruction.

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THE AUSTRIAN MILITARY PSYCHOLOGY DOCTRINE

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ABSTRACT

During the year 1999 the Austrian Military Psychology Service developed a new doctrine.

Contrary to former concepts, which more or less just listed the various tasks of military psychology, the new doctrine approaches the subject from the aspect of the "psychic fitness for duty" of the individual soldier.

The central part deals with

-the generation, development and up-keeping

-the examination and testing and

-(in case of loss) the re-development

of the psychic fitness for military duty of the Austrian soldier.

Since the term "psychology" has lately been frequently used (or should I say misused) for rather weird concepts, and since the necessity for the use of psychology in the military has greatly increased, the Austrian Military Psychology Service had to develop a new doctrine for the deployment of psychology in the Austrian Armed Forces.

It was postulated that psychology should be deployed wherever it can contribute to the effort of the military in fulfilling its constitutional tasks.

The constitutional tasks of the Armed Forces are (in short)

- to defend the country, and, in support of civilian authorities
- to protect the country's constitutional institutions and the democratic rights of its citizens,
- to help uphold law and order, and
- to help in case of natural or man-made disasters.

To fulfil these constitutional tasks, the Armed Forces must meet certain requirements.

Each soldier must be assured that he is taken as an individual worth not only the best equipment and logistics but also optimal placement, training and leadership.

This is where psychology can help, and therefore the general aim of military psychology in the Austrian Armed Forces has been defined as follows:

The general aim of military psychology in the Austrian Armed Forces is to supply and apply scientifically proven psychological methods and means as contribution towards the task of the Austrian Armed Forces.

From this central aim the two main tasks of Austrian military psychology were deduced:

Matters of:

- **Basics of Military Psychology**

This includes development and quality control of psychological methods, opinion polls and applied psychological research

- **Applied Military Psychology**

This field concentrates on the fulfilment of military tasks and therefore includes

- the generation, development and maintenance,
- monitoring and testing, and (in case of loss) the
- re-building

of the soldier's mental fitness for military duty

The two main tasks are broken down into various subtasks:

I) Basics of Military Psychology

a) Methods of psychology applied within the Austrian Armed Forces

1) Development of psychological methods and means
2) Quality control of psychological methods and means
3) General control of psychology in the Austrian Armed Forces

b) Methods of opinion polling in the Austrian Armed Forces

1) Establishing of rules and regulations for the organisation and use of opinion polling
2) Monitoring and advising in opinion polling by other elements of the Austrian Armed Forces
3) Application of opinion polling in feedback systems

c) Research in the field of Applied Military Psychology

1) Application of psychological research for the development, evaluation and improvement of psychological methods in the Austrian Armed Forces
2) Monitoring and, if of advantage, promotion of psychological research outside the Austrian Armed Forces
3) Monitoring and counselling of applied psychological research conducted by other elements or experts of the Austrian Armed Forces

II) Applied Military Psychology

a) Generation, development and maintenance of the mental fitness for military duty

1) Providing psychological support for decision-making for military leadership
2) Participation in the selection of personnel: setting up, evaluation, optimisation and maintenance of a psychological aptitude testing system
3) Training matters concerning the psychology of combat
4) Organisation of training in Critical Incident Stress Management
5) Advice in matters of Psychological Warfare

b) Monitoring and testing the mental fitness for military duty

Application or monitoring of periodical feedback by questionnaire about soldiers' opinions, experiences and motivation as information for military leaders
Opinion polling of selected personnel on selected subjects on demand
Survey of the soldiers' morale especially for the psychological situation report
Advising commanding officers about improving the soldiers' morale

c) Re-building of the mental fitness for military duty

1) Establishment, control and application of a Clinical Psychology-system in the military hospitals
2) Establishment, control and application of a Clinical Psychology-system in the reserve-hospitals of the Medical Corps
3) Establishment, control and application of the Helpline-Service, a twenty-four-hour emergency telephone number for members of the Austrian Armed Forces in distress
4) Establishment, control and application of the Critical Incident Stress Management system, including care of Post Traumatic Stress Disorders

To perform the above tasks, the following organisation was developed for the Austrian Military Psychology Service:

Basically it consists of (see also graphic: Austrian Military Psychology Service):

- **a central command and control unit**

and

- **a number of field units**

in various elements of the Austrian Armed Forces

The central command and control unit

The head of this central unit is responsible for all the matters listed above, and also for all other specific psychological matters and activities in the Austrian Armed Forces, and especially for the adherence to a unified standard of military psychology.

He is also responsible for

- the operation of the service according to ethical principles, so that the different needs of service in a military organisation the requirement to fulfil a military task, and the responsibility for the welfare of the individual soldier can be reconciled.
- keeping military psychology within the confines of science, as it must not be influenced by esoteric or superstitious trends on one side or degrading or inhuman practices on the other.
- operation of the service according the federal law for the application of psychology in Austria.

To do this, a number of conditions had to be met:

The central command and control unit of the Military Psychology Service is situated in the Ministry of Defence.

It is organised in subunits for
Administration and co-ordination,
Applied military psychology
Methodology and applied research
Psychological training and care-giving, and
Air- and road traffic psychology

- Its head has, within the responsibility of his unit, the right to issue executive orders on behalf of the minister of defence.
- He supervises the psychological personnel in all matters within his responsibility, e.g. their training (but not disciplinary matters).
- He can, if need be, detach psychologists on short-term assignments from their permanent post to other jobs.
- The head of the Military Psychology Service, as well as the heads of his sub-units must be psychologists by training.

The Field Units

Induction and Recruitment:

- 2 psychologists in each of the Induction Centres

It is planned to take one of the two out of the Induction Centre and place him in the staff of his territorial command as counsellor to the territorial commander and for care-giving duties with the troops within the territorial command area.

- 1 psychologist in the Recruitment Centre

Medical Installations

- 1 clinical psychologist in each of the 3 military hospitals

The military hospital in Vienna needs a second clinical psychologist.

- 3 clinical psychologists in each of the reserve field hospitals

Air & Road Traffic Psychology

- 3 aviation psychologists in the unit for air & road traffic psychology of the army hospital Vienna

a reserve-psychologist should be included in the Operations-Branch of the staff of the air-regiments.

Peace-Keeping

- 3 Psychologists in the Austrian International Peace Support Center

As two of them work in selection, it is difficult to use them for counselling and care-giving activities. That leaves only one psychologist for counselling and care-giving, psychological preparation and training who can join PK-units abroad in case of emergency. At least one additional psychologist is needed.

- Peace Keeping Units abroad

Currently there is one reserve psychologist with the Austrian PK Battalion serving with K-FOR in the KOSOVO.

When a PK-unit is raised, the number of psychologist (one or two) to be included is decided on.

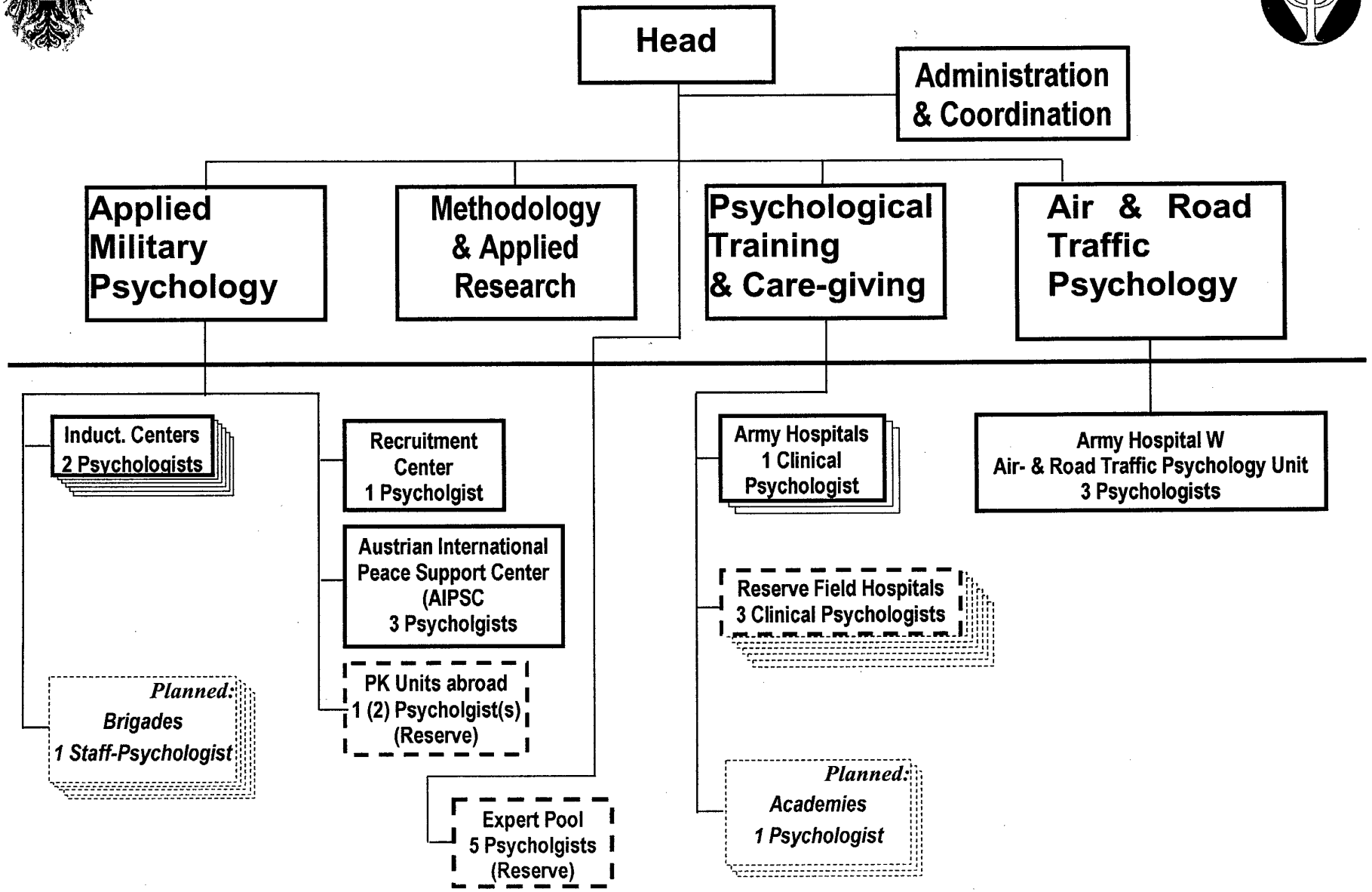
The Academies of the Austrian Armed Forces

In each of the three Academies, National Defence- Academy (higher officer's training), the Theresian Military Academy (officer's training) and the NCO-Academy the faculty should include one Psychologist.

Brigade Staff

As a beginning of applying psychology on troop level a psychologist (active or reserve officer) should be included in the Operations-Branch of the staff of the Brigades.

Austrian Military Psychology service



PSYCHOLOGICAL MODEL OF SOLDIER BRAVERY

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ABSTRACT

The paper contains a psychological model of bravery summarizing the knowledge from reference and from studies and experiences by Croatian psychologists.

Rather than give a thorough explanation of bravery, the model was intended to compare all factors recognised. A well-laid out scheme of factors and the order of their impact might encourage bravery, whereby the model also has instructive importance.

The model recognices three determinating groups of factors: conditions, incitements and circumstances.

Preconditions *primarily concern individual soldiers characteristics presetting them for acts of bravery. Preconditions imply abilities required for the duty. Inefficient behaviour will not lead to bravery, and that factor can be influenced primarily by selection of personnel. Another critical factor is soldier's value system, offering motives for bravery; this implies the importance to attach to value system in the classification process.*

Incitements *refer to factors creating an appropriate setting for bravery. This primarily applies to togetherness (motivating a soldier to go as far as sacrifying for the sake of his fellow-combatants), qualification (which combined with capabilities enables soldier efficiency), command system, affecting the general esprit de corps, and awareness, primarily being informed of the goals of the campaign and the situation in the battlefield. Second in degree, yet important, are discipline and equipment.*

Circumstances - *that is, situation, is a key factor, characterized foremostly by danger. As evidenced from reference, circumstances especially favouring bravery are those of surrounding, rescuing (wounded) fellow combatants, fighting a superior enemy and combat "to the last round".*

Acts of bravery will occur when soldiers display goal-oriented behaviour in extremely dangerous situations, There are situations, unfortunately, when soldiers misjudge the situation and unnecessarily expose themselves or even the whole unit to danger. Those, however, are not instances of bravery but of unnecessary exposure to peril. Soldiers should, therefore, receive instruction on how to behave in dangerous situations as described, and an emphasis should be put on differentiation of true bravery from the aimless or foolhardiness.

INTRODUCTION

Bravery is a phenomenon mostly associated with warfare and the military. Acts of bravery are admired and commended by the military. They make an integral element of the entire pop-culture depicting the military (war films, fiction, feature stories). Classical theorists of war too addressed bravery; cf. von Clausewitz: "... fear looks to physical preservation, courage to the moral preservation. Courage, then, is a nobler instinct. But because it is so, it will not allow itself to be used as a lifeless instrument which produces its effects exactly according to prescribed measure. Courage is therefore no mere counterpoise to danger in order to neutralise the latter in its effects, but a peculiar power in itself" (von Clausewitz, 1997; English translation by Lord Ellesmere), or by Sun Tze "The commander stands for the general's qualities of wisdom, sincerity, benevolence, strictness and courage" (Sun Tze, 1995).

The military itself is interested in understanding the essence of bravery, and the ways to reinforce it. Suggestions concerning bravery as a psychological notion have been sought from psychologists. However, efforts towards a in-depth research into bravery revealed serious reference void in the field, unlike other (military) psychological concepts (e.g. fear, combat stress, leadership...).

The authors of this paper, motivated by training needs also, set to furnish notions and theories on factors favouring bravery to respond to the hard task of exploring soldier bravery. The factors have been mapped into a "model of soldier bravery" for easier reference (Figure 1).

Only the principal sources for the model will be listed here.

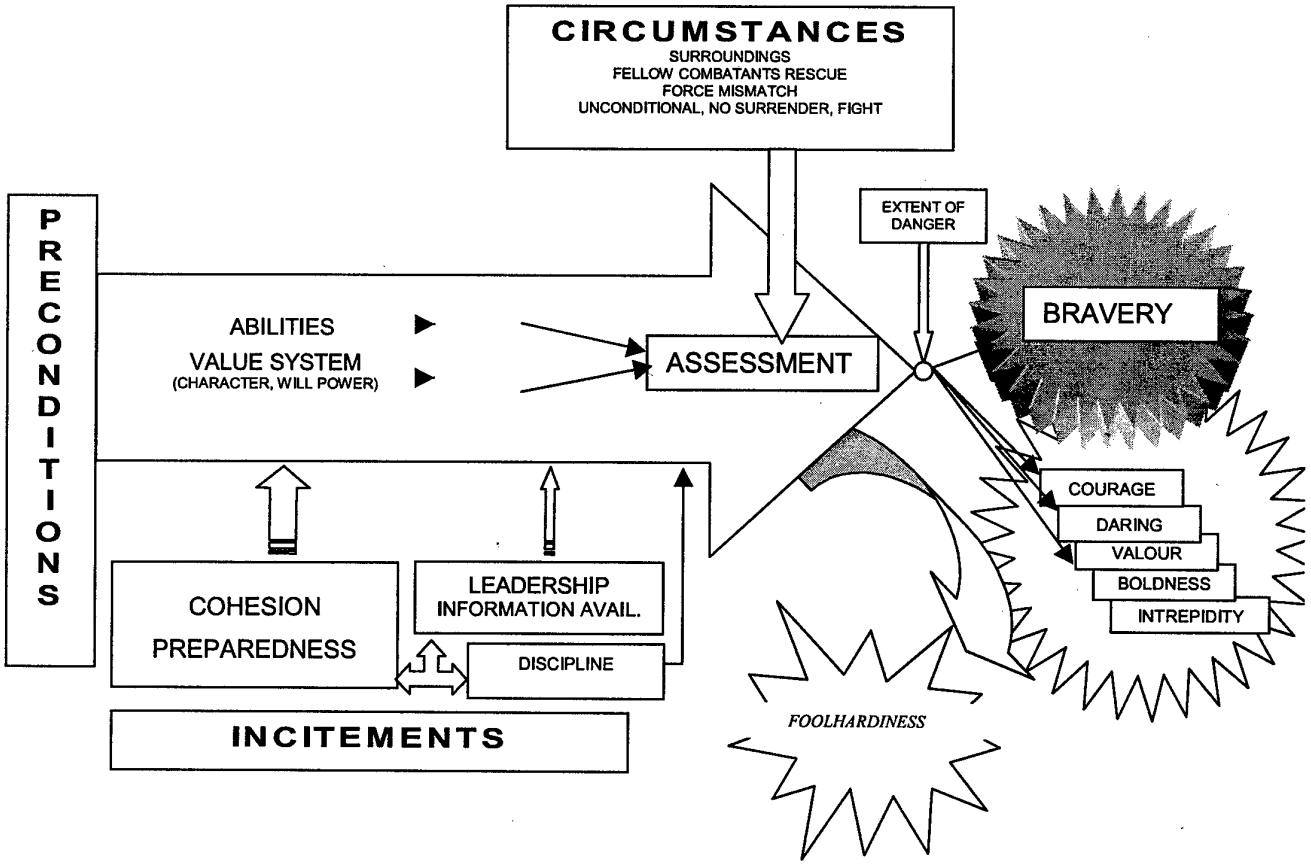


Figure 1: PSYCHOLOGICAL MODEL OF SOLDIER BRAVERY

HERO IMAGE

The basic question "How do you recognise a hero" still remains a question, on which opinions diverge. Ideals of heros differed across epochs in the history. In Middle Ages, for instance, heros were knights endowed with 7 virtues: faith, hope, mercy, justness, reason, strength (valour) and modesty (Llull, 1995). Modern studies reveal overlapping of the modern perception of a hero with the classical medieval model, allowing us to state features of a hero. According to the research by American psychologist Frank Farley (1995, Psychology today), a true hero displays excellency in five facets - *determinants* (bravery, honesty, generosity, authority, risk acceptance, skill and ability), *depth* (a mythical, timeless, almost otherworldly quality above the hero and his acts), *domain* (the field of bravery), *database* (where we get information about the heros and where heros and their deeds are evaluated) and *distance* (a sense of inaccessibility).

Agree or not with the description, it still does not tell much as to what bravery is conditioned and motivated by.

PRECONDITIONS

"Anatomy of Courage" by Lord Moran (1987) presents a widespread view of psychological structure of bravery, based on the author's experience from the World War I. Lord Moran characterises bravery as will strength overcoming fear, and argues that soldiers displaying modest abilities make "a good warfighter stuff"; the lord goes on to tell about the entire battalions enlisted in remote areas where soldiers "did not seem to think at all", and their strength lay in inability to recognise danger. Briefly, he sees bravery as overcoming of fear and ignorance of danger, implying inferior intellectual capability. Modern studies however, show the contrary.

For instance, Table 1 concisely presents results of a study on fear as experienced by "heros" compared to the rest of soldiers:

TABLE 1.:

Varying fear experience in combat by decorated compared to non-decorated soldiers

Group	Fear experienced in combat	
	Increases	Decreases
Soldiers awarded the "Silver Star"	66%	20%
Comparable group of non-awarded soldiers	55%	32%

(sorted according to Watson, 1978)

The "hero group" consisted of soldiers awarded the "Silver Star" decoration, the most appreciated soldier decoration in US, presented for acts of heroism in combat. Evidently, "heros" experience fear too, and in combat it may even grow, contrary to the belief that a hero ignores fear and that bravery means overcoming the fear.

US studies dating from the end of Korean war (Egbert et al., 1957) revealed individuals viewed as superior fighters (if not heros) as more intelligent, socially and emotionally mature, preferred by the peers and displaying greater leadership potential. Accounts of combat episodes have showed superior combatants more frequently exposing themselves to fire, and to lead and encourage their fellow combatants (e. g. to advance towards the enemy's lines) or to support them (e.g. by fetching ammunition or assisting the wounded), displaying individual responsability (e.g. being the last to leave the combat position) and preserving calmness in combat.

The Israeli study on 283 soldiers decorated for bravery in the Israeli-Arab war in 1973 (Gal, 1978) placed the decorated soldiers in the top quarter on all psychological tests (superior intelligence, motivation, more stable personality). The sociodemographic data revealed more COs and NCOs among the decorated, lower age, single status and fewer children (i.e. minor non-soldier responsibilities). Also, the decorated were good rather than perfect soldiers, with more unallowed absence (AWOL) and minor offences instances than the rest of the soldiers, suggesting a less conventional attitude towards military discipline and, in a way, lasting inclination towards autonomy and initiative.

Next, the decorated performed better in military training, but did not outperform other soldiers in either civilian education or physical preparedness.

The overall results allow us to define "heros" as psychologically and generally superior soldiers with marked value system emphasising individual responsibility.

However, among many soldiers displaying characteristics of the kind heros are hard to distinguish. Combat skills and individual ability and responsibility should therefore be viewed as preconditions of bravery.

SITUATION AND INCITEMENTS

The Israeli study also addressed the very context of bravery. Analysis of acts of bravery allows the following classification of most of the situations:

- acts of bravery demonstrated in breakout from a far stronger enemy encirclement, in cohesive units whose commanders took the lead in bravery
- acts of bravery realised in close combat and in rescue of the wounded; usually by individual soldiers, often isolated (in psychological sense too), and not assisted by commanders
- acts of bravery in small units fighting against a far stronger enemy; the soldier decorated actually died rescuing his fellow combatant
- individual acts of bravery performed in "to the last round" situations, although not in saving oneself or fellow combatants nor obliged by the order

Common to all the categories is heavy fighting. The results of the study reveal the aforecited categories contain greater likelihood of bravery compared to other combat situations, i.e. bravery is highly situational.

Fairly expectably, the description of the categories suggests bravery occuring in highly cohesive units under a superior leader, as military effectiveness always reflects social climate of units.

The correlation between situation in a unit and bravery has also been supported by evaluation by 218 Croatian Army officers, veterans of the Croatian Homeland War 1991-1995, (Filjak and Pavlina, 1998), who credited the situation as the best "bravery inductor", followed by togetherness and trainedness. Quite expectably too, as acts of bravery occur only in extraordinary situations demanding strain and dedication (abovestated). As bravery always implies exposure to danger for others' benefit or sacrifying for a common goal, it is fostered by strong cohesion too. Furthermore, bravery implies military effectiveness, so "heroic" individuals are at the same time skilled combatants too.

Briefly, acts of bravery are anticipable in extraordinary situations by trained soldiers exhortated by togetherness. Less credited, but still significant, were leadership and information availability that directly reflect on the situation in the unit and soldier commitment. Next in line was *discipline*, followed by *logistics*, and last, almost "irrelevant", *enemy weakness*.

The enemy makes the chief "external" factor in a bravery situation. Although a weak enemy might be supposed to induce bravery spirit, the abovecited assessments revealed the incidence of risky enterprises not exceed those performed against an equally strong or superior enemy, at least those who do so are not considered brave.

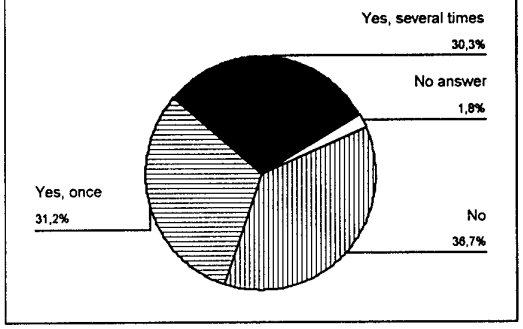
Assumably, fighting against a strong enemy is likely to incite combat spirit and defiance and create situations that favour bravery.

Unit conditions (primarily togetherness and trainedness) are an important incitement to bravery, next in line being leadership and information availability, followed in their turn by other aspects of the situation (e.g. discipline, equipment, provisions).

FOOLHARDINESS

The order of the listed groups of factors is schematised in Figure 1. Briefly, the decision to do a brave act is determined both by one's personal and unit characteristics. Bravery and foolhardiness, which has fatal consenquences, are two different things, however.

FIGURE 2: WITNESSING TO A BRAVERY ACT WITH HARMFUL OR FATAL CONSENQUENCES



Foolhardiness is not uncommon, as evidenced by figure 2. illustrating responses by 218 Croatian Army officers to the question "Have you witnessed to a basically brave act that had harmful or even fatal consenquences (e.g. unnecessary exposure to peril, positions exposure, drawing the enemy fire") (Filjak and Pavlina, 1998). Non-witnessing was reported by a 1/3 of the respondents, while another 1/3 saw it repeatedly. Countermeasure for unreasonable exposure to danger is contained in military discipline, soldier preparedness, sensible leadership, i. e. all factors highlighting reasonable combat behaviour as opposed to jeopardizing bravery that hardly is bravery at all.

BRAVERY "GRADATION"

Finally, along with bravery, there are other terms denoting efficient acting in perilous situations. The abovementioned study (Filjak and Pavlina, 1998) suggests gradation of the terms related to bravery, mostly as a function of the threat to which the "hero" was exposed. Thus, in the Croatian language, outstanding combatant enterprise is implied in "bravery", followed by courage, daring, valour, boldness, intrepidity, although there is some overlapping among the terms, or nuances, allowing their interchange. Very probably this is the case in other languages too.

CONCLUSION

The model could be summed up as follows: well-selected soldiers, highly motivated, trained belonging to cohesive units under a resolute leader in combat are likely to show enterprise which, based on the circumstances and threat degree, will be viewed as courage or bravery, or individual or unit bravery respectively.

The scope of this paper was to enumerate studies that have thrown a new light on the bravery issue and served as a basis of the bravery model presented here, rather than to provide an extensive insight into psychological reference in the field, which, by our assessment, hardly exceeds the reference listed here. It would make an honour to us if this paper incited further discussion, or hopefully research, in this admirable issue.

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QUESTION-DRIVEN EXPLANATORY REASONING ABOUT DEVICES THAT MALFUNCTION

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ABSTRACT

Questions are at the heart of virtually any task an adult performs when using technological artifacts. It could be argued that any given task T can be decomposed into a set of questions that a sailor asks and answers. When a sailor encounters a device that malfunctions, the relevant questions are "What's wrong?" and "How can it be fixed?" . When an officer reads a technical document, the relevant questions are "Why is this important?" and "What should I do about it, if anything?". When a young adult reads Navy recruiting material, the relevant questions are "What's interesting? ", "Do I want to join?", and "What are the perks?". The cognitive mechanisms that trigger question asking, exploration patterns, and question answering strategies need to be understood in order to design the messages and technological artifacts effectively. In turn, these inquiry strategies map onto cognitive components that are familiar to cognitive scientists, such as search, pattern recognition, comparison, case-based analogical reasoning, knowledge construction, and structure mapping.

In projects funded by the Office of Naval Research, we have developed a cognitive computational model of question asking (called PREG) and question answering (called QUEST). Our current ONR grant is investigating relationships among a person's understanding of everyday devices (e.g., dishwasher, cylinder lock), the asking and answering of questions, and general psychometric tests of cognitive abilities. After reading about a device, the participants subsequently receive scenarios in which the device breaks down and they generate questions about the malfunction, eye tracking data are also collected at that time. Adults with high mechanical ability ask good questions that converge on faults. The quality of questions in the center of a breakdown scenario is the fastest way to find out whether an adult has a deep understanding of a device.

Introduction

Questions are at the heart of virtually any task an adult performs. It could be argued that any given task can be decomposed into a set of questions that a person asks and answers. For example, when a sailor in the Navy encounters a device that malfunctions, the relevant questions are "What's wrong?" and How can it be fixed?". When an officer reads a technical document, the relevant questions are "Why is this important?" and "What should I do about it, if anything?". When a young adult reads Navy recruiting material, the relevant questions are "What's interesting?", "Do I want to join?", and "What are the perks?". The cognitive mechanisms that trigger question asking and exploration patterns need to be understood in order to optimize the design of artifacts, whether they be text, visual displays, mechanical devices, electronic equipment, or telecommunication systems.

In a recent project funded by the Office of Naval Research, we developed a cognitive computational model of question asking, called PREG (Graesser, Olde, Pomeroy, Whitten, Lu, & Craig, in press; Otero & Graesser, 1999). According to the PREG model, cognitive disequilibrium drives the asking of genuine information-seeking questions (Berlyne, 1960; Chinn & Brewer, 1993; Collins, 1988; Festinger, 1957; Flammer, 1981; Graesser, Baggett, & Williams, 1996; Graesser & McMahen, 1993; Graesser & Person, 1994; Schank, 1999). Questions are asked when individuals are confronted with obstacles to goals, anomalous events, contradictions, discrepancies, salient contrasts, obvious gaps in knowledge, expectation violations, and decisions that require discrimination among equally attractive alternatives. The answers to such questions are expected to restore equilibrium and homeostatis. It often takes a large among of knowledge to identify such clashes in knowledge. Miyake and Norman (1979) presented the argument 20 years ago that "to ask a question, one must know enough to know what is not known." Otero and Graesser developed a set of production rules that specifies the categories of questions that are asked under particular conditions (i.e., content features of text and knowledge states of individuals).

Questions that tap explanatory reasoning are particularly diagnostic of deep comprehension. Explanations are needed when devices break down, faults are diagnosed, and devices are repaired. The person responsible for a broken piece of equipment needs to construct explanations in the form of causal networks, goal-plan-action hierarchies, and logical justifications. It is well documented that the construction of explanations is an excellent (if not the best) predictor of adults' abilities to learn technical material from written texts (Chi, deLeeuw, Chiu, & LaVancher, 1994; Cote, Goldman, & Saul, 1998).

Question asking tasks have the potential for improving the accuracy of personnel selection and classification. For example, a sailor would ideally be assigned to be a locksmith if the sailor has deep knowledge that explains lock mechanisms, but not if the sailor merely knows the jargon. But how does one know whether a sailor has the talent and the deep knowledge for a task? We know that we will not get much useful information by simply asking the sailor (e.g., "How good are you in operating a lock?"). There are serious limitations in the metacognitive abilities of adults in monitoring the accuracy of their own comprehension (Hacker, Dunlosky, & Graesser, 1998). We know that we will not get much useful information by testing the sailor on inert shallow knowledge, such as a test of vocabulary and technical jargon (e.g., "What is cam?"). We know that it would be impractical to spend several years developing a fully validated, reliable, psychometric test on each device in the military. The device would be outdated by the time the psychometric test was finished.

The present project investigated the questions that college students ask when an everyday device malfunctions. After reading about a device (e.g., cylinder lock, dishwasher), the participants subsequently received scenarios in which the device breaks down (e.g., *the key turns but the bolt doesn't move*, in the context of a cylinder lock) and they generated questions about the malfunction. Eye tracking data were also collected at that time. There were a number of straightforward predictions of the PREG model. First, those participants who have a deep understanding of the device should ask good questions that converge on faults. Second, the eye movements of deep comprehenders should quickly converge on likely faults that explain the breakdown. This paper briefly summarizes the highlights of two studies that confirm these predictions.

Question Asking and Deep Comprehension of Devices

In a recent study by Graesser et al. (in press), college students (N = 108) at the University of Memphis first read an illustrated text, then were given a breakdown scenario, and then generated questions. After completing the question asking task, they are given a comprehension test on the devices. Finally, the participants completed a battery of tests of cognitive ability and personality.

Illustrated Texts and Tasks. The participants read 6 illustrated texts on everyday devices: a cylinder lock, an electronic bell, a car temperature gauge, a clutch, a toaster, and a dishwasher. The device mechanisms were extracted from Macaulay's book with illustrated texts, *The Way Things Work* (Macaulay, 1988). After reading about each device, the participants subsequently received scenarios in which the device breaks down. During this time, the participants were asked either to "think aloud in writing" (which we will call the "write aloud" task) or to generate questions in writing ("question asking" task) for three minutes. The present report focuses exclusively on the question asking data. The participants typically reflected on how to diagnose and repair the malfunctions during the question asking task.

Device Comprehension Test The participants completed an objective test on their deep understanding of the devices. This consisted of six 3-alternative, forced-choice questions about each device (36 total questions across the 6 devices, so scores could vary from 0 to 36). There were 4 test questions per device that tapped explicit information and 2 questions that tapped inferences. An example of an inference question is provided below.

What happens to the pins when the key is turned to unlock the door?

(a) they rise
(b) they drop
(c) they remain stationary (correct answer)

All 36 questions followed a "qualitative physics" framework that was designed to tap deep comprehension. That is, suppose there are N components in the device. If one component C1 is damaged or changed, what is the impact on another component (C2) in the device? A state associated with C2 can either increase, decrease, or stay the same. It takes deep understanding to answer such constraint propagation questions correctly. It should be noted that the scores on the device comprehension test served as the gold standard for deep comprehension in this study. If our PREG model is correct, than the quality of questions asked should predict device comprehension scores.

Battery of Tests of Individual Differences Participants completed a battery of tests that measured their cognitive abilities and personality. The tests of cognitive ability include the ASVAB (the Armed Services Vocational Aptitude Battery, Department of Defense, 1983). This test is administered to over 1 million high schools students each year. There were the following subscales on this test: Mechanical comprehension, electronics, general science, auto & shop, mathematics knowledge, arithmetic reasoning, numerical operations, word knowledge, paragraph comprehension, and coding speed. Five composite variables can be derived from the 10 measured variables on the ASVAB: technical scientific knowledge, verbal ability, numerical ability, coding speed, and general intelligence (g). Additional tests of cognitive ability included working memory span (LaPointe, & Engle, 1990), spatial reasoning (Bennet, Seashore, & Wesman, 1972), and exposure to print (the author recognition test, Stanovich & Cunningham, 1992). A number of noncognitive variables were measured. These included age, gender, and scales on a personality test. The personality test is the NEO inventory (Costa & McCrae, 1991), which measures individuals on the "big five" personality factors: neuroticism, extroversion, openness, agreeableness, and conscientiousness. It took approximately 4 hours to complete the battery of tests, which were completed in two sessions on two different days.

Results.

The most accurate measure of deep comprehension was the device comprehension score. The mean score was 23.5 out of 36 questions (SD = 5.3). According to our hypothesis, we would expect the device comprehension scores to show a high positive correlation with the questions that were asked during the breakdown scenario. We in fact did find a significant

positive correlation between device comprehension and question quality ($r = .51$, $p < .05$). Question quality was defined as the proportion of questions that referred to a plausible malfunction that explained the breakdown. Question quality had a substantially higher correlation than did the mere quantity of questions, the quantity of ideas in the write aloud task, and the quality of ideas generated in the write aloud task.

Question quality compared very well with the general measures of cognitive ability and the noncognitive factors. The bivariate correlations with device comprehension were either small or nonsignificant for the 5 personality measures, age, working memory, exposure to print, and many of the ASVAB measures. The correlations with technical scientific knowledge ($r = .72$, $p < .05$) fared better than question quality, but all other measures of ASVAB (and also spatial reasoning) had approximately the same or lower correlations with device comprehension than did question quality. Males had significantly higher device comprehension scores than females ($r = .40$, $p < .05$), but the correlation was not as high as question quality. When we performed follow-up multiple regression analyses, we found that technical knowledge was the primary predictor of both question quality and of device comprehension; all other cognitive and noncognitive measures were not significant.

Technical scientific knowledge was robustly linked to device comprehension so we examined the differences between the questions that were asked by participants with high versus low technical knowledge. The questions asked by students with high scores had two characteristics: (a) the questions converged on components in the mechanism that are plausible faults and (b) the questions had a more fine-grained elaboration of the parts, processes, and relations that specify how the breakdown occurred. Stated differently, there was high convergence on plausible faults and high mechanistic detail.

We have mapped out conceptual graph structures for the illustrated texts on devices. These structures include component hierarchies, spatial region hierarchies, causal chains/networks, goal/plan/action hierarchies, and property descriptions that are depicted in either text or picture form (Baggett & Graesser, 1995; Graesser et al., 1992). We have identified the content in the conceptual graph structures that is relevant versus irrelevant to the breakdown scenarios. The content of the 108 students' questions have been mapped onto the conceptual graph structures. This has allowed us to assess the extent to which properties of the participants' knowledge representations are predicted by cognitive abilities, personality measures, gender, and device comprehension test scores. However, it is beyond the scope of this paper to discuss what these detailed analyses have revealed.

Eye Movements during Question Asking

At this point, no one has systematically analyzed the relationships between eye movements and the cognitive components in a model of question asking. We conducted a second study that tracked eye movements on college students (N = 28) who asked questions in the context of the breakdown scenarios. The college students first read each illustrated text on everyday devices, followed by a breakdown scenario for 90 seconds (while the illustrated text remained on the screen). The participants generated questions about the breakdown scenario during the 90 seconds and eye movements were recorded by a Model 501 Applied Science Laboratory eye tracker. .

According to the PREG model of question asking, we would expect deep comprehenders to show a high density of eye fixations at words, objects, parts, and processes that are at the source of cognitive disequilibrium (e.g., anomalies, contradictions, broken parts, contrasts, missing components, and so on). It should take a sufficient amount of technical knowledge to detect such irregularities in the system. That is, there should be a correlation between technical knowledge and the proportion of fixations that are on faults that explain the breakdown. An area plot displays the amount of time that the eye fixates at each region in an N x M dimensional grid. The area of interest is the subset of the display that should theoretically receive fixations (e.g., the faults).

Our analysis of the eye tracking data confirmed our expectation. The proportion of fixation time on likely faults (that explained the breakdown) was significantly higher for participants who had a relatively high number of good questions (.13 versus .09 for high versus low), for those who had relatively high device comprehension scores (.13 versus .09), and for those who had high general science scores on ASVAB (.13 versus .08); other measures of individual differences did not significantly predict the proportion of fixation times on faults.

Precisely the same results occurred when measuring the number of fixations on faults. As predicted by PREG, participants with high technical knowledge scores had a higher proportion of good questions. In a follow-up analysis, we discovered that high ability students tended to fixate on faults during the 3-second time span that preceded the question about the fault. So they see the fault and then the question emerges from their linguistic production mechanisms.

In closing it appears that we have two quick tests of whether a sailor has deep knowledge about a particular device. In both tests, we present a breakdown scenario that puts the sailor in cognitive disequilibrium and forces a problem solving mode. One test is that they will generate good questions that tap likely causes of the breakdown. The second test is that their eyes will fixate on the faults. In contrast, the poor comprehenders have questions that are not discriminating and their eyes move all over the display. In less than 2 minutes, we can identify whether a particular sailor has the deep knowledge and talent for understanding a particular device.

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ATTITUDE PATTERNS OF ROYAL AIR FORCE PERSONNEL IN RELATION TO RETENTION

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ABSTRACT

The 1998 Strategic Defence Review aimed to modernise and reshape the British Armed Forces to meet the challenges of the 21st century. Further to this review, the Armed Forces Overarching Personnel Strategy was developed in conjunction with single service personnel strategies. These strategies concentrate on issues relating to military recruiting, training, sustaining and retaining high calibre personnel. Within the strategic context as it relates to the RAF, this paper concentrates on the retention aspects and, in particular, the military psychologist's contribution to the formulation and implementation of the personnel strategy. It is necessary to analyse the past and understand the present in order to have some hope of predicting the future and thus, to take steps to change it to meet the RAF manning requirements. A systematic approach to retention requires an understanding of where problems occur and why personnel opt to leave the RAF prematurely. The military psychology section of the Command Scientific Support Branch at HQ PTC RAF undertake a number of continuous longitudinal attitude and opinion postal surveys. These studies are briefly described and the information obtained from them is related to influences upon Servicemen and women to remain in or leave the Service. The main groups of factors which appear to have the strongest impact are considered. Finally, the paper suggests further ways in which military psychologists can inform and monitor the effectiveness of uniformed personnel retention strategies.

The 1998 Strategic Defence Review aimed to modernise and reshape the British Armed Forces to meet the challenges of the 21st century. With regard to the personnel aspects, this review stated that;

" To have a modern and effective Armed Force, we must recruit and retain our fair share of the best people the country has to offer."

Consequently, the Armed Forces Overarching Personnel Strategy (AFOPS) was developed in conjunction with 3 single Service personnel strategies namely, the Royal Naval Personnel Strategy, the Army Human Resources Strategy and the RAF Strategy for People. All three concentrate on four main aspects: recruiting, training, sustaining, and retaining military personnel. This paper considers the retention issues.

Retention of personnel has increased in importance for two main reasons. First, it was agreed that the trained strength of the RAF should decrease from 70,000 in 1995 to around 52,000 in 2000 despite a non decreasing commitment to the UK, its dependent Territories, NATO and the UN. Second, training of personnel is both expensive and lengthy. For example, it takes on average four years and costs around four million pounds to train one front-line pilot. If that individual chooses to leave the Service earlier than forecast, the only way to replace him/her is to recruit and train another person. It is not possible to recruit qualified, experienced military pilots from the civilian world.

It is obviously necessary to have a systematic approach to retention. One aspect of this issue is to understand where problems occur and why personnel opt to leave the Service prematurely. The military psychology section of the Command Scientific Support Branch at Headquarters, RAF Personnel and Training Command undertakes a number of longitudinal attitude and opinion surveys which contain questions relating to why individuals choose to stay in or to leave the RAF. The main surveys containing these type of questions are:

- the RAF Continuous General Attitude Survey - started in 1988 and sent to 8000 personnel per year who at the time of being surveyed will not be leaving the RAF in the forthcoming twelve months;
- the RAF Families Survey - started in 1996 and sent to 4000 spouses of serving personnel per year;
- the RAF Officers Leavers Survey - started in 1996 and sent to all officers who elect to leave the RAF prematurely, or at a specific option point;
- the Airmen and Airmen Aircrew Leavers Survey - started in 1998 and sent to all airmen/airmen aircrew who choose to leave the Service prematurely, or at the end of their engagement;
- the Personnel Management Agency Feedback Survey - started in 1998 and sent to a representative sample of 10% of officers and 5% of airmen per year.

From these surveys, the factors which seem to influence strongly an individual's decision to remain in or to leave the Service can be grouped into 4 sets as shown in Table 1.

Table 1 -Types of Factor Influencing Retention

Influence towards	Type of Factor	Related to
Remaining in the Service	'Pull-in'	Advantages of remaining in
	'Push-in'	Disadvantages of leaving
Leaving the Service	'Pull-out'	Advantages of leaving
	'Push-out'	Disadvantages of remaining in

Turning first to factors that influence personnel to remain in the Service, the main 'pull in' factors, that is those that are seen as advantages to remaining in the RAF, are:

- with the exception of junior airmen, 'financial reasons' ie pay, allowances etc;
- security ie long term contract of employment;
- challenging work, responsibility and leadership;
- enjoyment of Service life, emotional attachment to the Service and Service camaraderie;
- for junior airmen only, the opportunity for educational/professional development and the opportunity for travel;
- for aircrew, the opportunity to fly.

It should be noted that junior airmen tend, in general, to perceive influential 'pull-in' factors to be less achievable than do their seniors in rank, ie Senior Non-Commissioned Officers and Officers.

Few 'push-in' factors, (that is those that are seen as disadvantages to leaving such as 'inability to get appropriate civilian job') were considered to be influential reasons for either airmen or officers to remain in the RAF. Junior airmen, unlike all the other rank groups, considered financial aspects to be a 'push-in' factor. The surveys' results suggested that some members of this group may be remaining in the Service because they perceive that they would be worse off financially if they left.

Looking now at the factors that influence personnel to leave the RAF, the main 'push out' factors, that is those that are seen as disadvantages to remaining in the Service, are:

- perceived promotion prospects and the promotion system, (it should be noted that the influence of these issues decreases with increasing rank);
- with the exception of junior airmen, changes to Service life and the current state/future of the RAF;
- family related reasons, such as stability, separation from family and spouses' careers.

The most influential 'pull out' factors (that is those that are seen as advantages to leaving) are employment opportunities and career prospects in the civilian world.

In general, therefore, from the data that we have gathered so far the factors that influence retention appear to fall into two main groups. First are those which the RAF needs to continue to focus upon in its Strategy for People. These include the following aspects:

- the ongoing provision of rewarding and well managed career structures offering opportunities for advancement;
- rates of pay for all ranks which are seen as comparable with broadly equivalent civilian occupations (through the independent pay review process);
- family stability (this needs to remain a high profile issue to be addressed pro-actively).

Second are the factors for which well designed internal public relations and communications programmes would play an important part in improving retention. Such programmes will necessarily include elements of 'listening' to personnel as well as 'informing' them. These programmes could address areas of potential discontent through ensuring that individuals' expectations are realistic; that the RAF is precise about what it offers and what it expects; and that there are no mismatches between what the RAF thinks it has delivered and what individuals feel that they have received. One example relates to the promotion and assessment systems. As previously stated, past data has suggested that the promotion system was not perceived to be fair by some personnel. All members of the RAF consider it highly important that promotion should be on the basis of ability. The promotion and assessment systems have recently been subject to radical revision, and there are indications that the changes

are widely regarded to be improvements. It is, therefore, important that the impetus is maintained by continuing to monitor and improve the systems and by publicising and fostering the favourable changes in opinions.

This, then, is a brief overview of the work in which we as military psychologists have been involved to help inform and monitor the RAF's retention strategy. Clearly, lack of time precludes further discussion of specific detailed issues such as differences in attitudes between rank and Branch/Trade groups. In depth analyses of actual and potential reasons for staying/leaving and our attempts to combine these with other relevant information cannot be covered.

For the future, research continues into when and why retention problems occur, and into methods of modelling and predicting retention, with the aim of formulating recommendations for its systematic management.

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SURVEYING PERFORMANCE APPRAISAL ABSTRACT:

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ABSTRACT

In 1976 the Danish Armed Forces set forth a performance appraisal system (FORPUBS) which combined assessment and personnel development, underlining the individual development of personnel as a central element. The system soon became an inspiration for other Danish organizations and business appraisal systems, Now, 25 years later, the Danish Defence Center for Leadership has carried out a survey, trying to establish whether ***FORPUBS*** *meets the standards of the 21th century. Results show an overall positive attitude towards the basic intentions in FORPUBS from the appraiser as well as the appraised. Secondly, the survey shows a tendency in assessment towards inflation, giving better and better ratings. And third, regarding individual development, the results indicates a need to update the tools and guidelines for administering the interviews. The conclusion of the survey is that there is a need for a completely new system containing elements and tools for integrating competencies and personal development in the appraisal system, to optimize the value of appraisals for the organization.*

In 1976 the Danish Armed Forces set forth a new system for performance appraisal – called FORPUBS. It was an integration of performance apraisal and a development dialogue to be used in interviews with the entire personnel. For the first time there was a joint system for the army, navy and air force. The goal was to boost the personnel's development and job satisfaction and increase the efficiancy of personnel administration.

Regarding the appraisal element the personnel is appraised on 23 different areas, such as judgement, responsibility, cooperation and abilities as a leader. On each area the personnel is evaluated on a triple scale, as being "above norm", "norm" or "under norm".

Fig. 1. Example of item in appraisal

Ability to lead: Norm: Can by selfconfidence and personal authority inspire personnel to purposefully and appropiately solve the assignment	No basis for evaluation	Under norm	Norm	Above norm

In addition to this the personnel is evaluated on his or her suitability to the next level of function, in case of a promotion. The suitability evaluation is also done on a tripartition scale between "not suitable", "suitable" and "very suitable".

Embedded in the system is also a development dialogue. At least once a year the personnel is formally invited to a dialogue with his (or her) closest superior. They discuss the daily work, the individuals contribution and developmental needs. The dialogue can contain issues of the utilization of resources in the organization in general and the resources of the individual specifically, possible career opportunities, underlining the individuals' future and wishes for education and other developmental issues brought forth by the personnel or superior. The dialogue is loosely structured to give room for mutual discussion.

The integration of appraisal and development dialogue together makes the Danish Armed Forces' FORPUBS-system. Now the system is 25 years old, and the Danish Armed Forces wish to investigate whether the system meets the standards of the 21th century or need a brush up.

The survey was carried out in 1999/2000 by Psychological Branch, Danish Defence Center for Leadership as a pilot survey. 19 comprehensive qualitative interviews were performed with superiors and personnel administrators regarding their experiences with the system. 112 officers were asked of their experiences being appraised and "developed" through a questionnaire, with a reply rate of 80 %.

Results

In general appraisals and development dialogue seems to be an element, which is emotionally laden in the organization, as well for the appraisor and appraisee. The interviewed superiors and administrators were characterized by being very talkative and the officers who filled out the questionnaire often filled out more than was asked for.

Almost all respondents seem to agree, that the system – in its original thought - is performing, but that there is a need for changing the administration of it. In the past 25 years there has been a displacement in the system, laying more and more weight on the appraisal element and less into the development dialogue.

Table 1

Appraised officers about FORPUBS (N=71)

	Agreement on statement					Total
	++	+	-	- -	?	
It was a good dialogue	28	32	7	3	1	71
My superior listened	26	32	8	3	2	71
Better idea of career	9	30	23	8	1	71
I agree with appraisal	23	39	4	4	1	71
My selfperception has changed	0	6	40	24	1	71

A common experience among the appraisors was of a rising workload of officers to be appraised, and a concern about being able to solve this without lowering the quality. Nevertheless, the survey (table 1) indicates that 89% of the evaluated officers experienced the appraisal to be carried out in a positive and attentive atmosphere. 87% of the officers agreed on the appraisal they were given.

According to the officers only 44% of the interviews contained a development dialogue. Only 8 % of the personnel had – throughout a year – been to a interview reserved only to development as prescribed.

Table 2

Appraised officers about development dialogue (N=49)

	Agreement on statement				Total
	++	+	-	- -	
Superior was well prepared	9	37	3	0	49
Influence on my possibilities for development	3	15	26	5	49
Speak my mind about my superior	14	25	8	2	49
Better acquaintance with superior	4	17	24	4	49
Rewarding discussion	10	28	10	1	49

77% of officers who had had a development dialogue experienced, that they had only little influence on the review, but of those who experienced little influence only, 9% were disagreeing on the review. The developmental dialogue is often done *ad hoc*, often held informally and in between other issues of daily work. 18 % of the personnel said, that the development dialogue gave them greater influence on their possibilities for development, which is a rather low number. But by 78% of the officers the dialogue is seen as a rewarding discussion, where the superior was prepared, and the dialogue was carried out in a way, where 80 % of the officers felt they were able to speak their opinion concerning the superior.

The displacement between appraisal and development seems to be founded in a number of circumstances. In general there seems to be an insecurity in dealing with the developmental element as a concept and the tools connected to it. A high structure in the appraisal element makes this part of the tool more easy to use in daily life, compared to the rather low structured development dialogue. Many of the appraisors and appraisees experienced a tendency to avoid potential conflict. This too can make the superiors prefer to give good reviews above norm and avoid issues in the dialogue, which can provoke conflict, for the benefit of a good daily working relationship. At last the system – as it works today – has an organizational link to appraisals but no link between the organization and the development dialogue. The personnel administrators needs the appraisals concerning officers to secure the proper promotions, but does not in the same way need the results from the development dialogue.

The survey concludes that there is a need for a completely new system. In designing this new system, it seems essential to closely integrate appraisal and development dialogue by letting the one depend on the other. It seems important to embrace the new concept of strategic development of competencies, and thereby reach a balance between the values and needs of the organization and the wishes for and needs of development from the personnel. By doing this, an appraisal and development dialogue tool will be an element of the struggle to attract and retain valuable personnel in the future. In June 2000 the Defence Command Denmark approved of the surveys conclusions and has initiated the development of a new system.

ORGANISATIONAL COMMITMENT AND TURNOVER AMONG MILITARY PERSONNEL

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ABSTRACT

Nowadays in the Netherlands the economy and by that the labour market is picking up. This creates two major problems with regard to the staffing of organisations:

It's getting harder to get sufficient and qualified personnel.

It's getting harder to keep the present personnel.

Because the military personnel system is a closed system, i.e. personnel comes in at the bottom of the organisation and follows a career, unanticipated turnover is a threat for the proper functioning of the organisation.

This study focuses on the second problem, how to keep the present personnel. The leading question is - what can the organisation do to keep the young (younger than 40 years) military personnel.

Central concepts in the study are organisational commitment and intention to leave. The following research questions are answered:

How big is the intention to leave among young military personnel?

How big is the organisational commitment of the young military personnel?

What is the relation between organisational commitment, intention to leave and some personnel characteristics?

What is the relation between organisational commitment and intention to leave?

What (personnel policy) factors affect the organisational commitment and/or intention to leave?

Introduction

Over the past few years the labour market has been booming in the Netherlands. The demand for personnel is increasing, but the number of job seekers is declining. This has made it more difficult for organisations in the Netherlands both to find and retain qualified personnel. As it is easier to find a different (better) job, the turnover of personnel is rising. This is also the case in the Royal Netherlands Army. An additional problem relating to military personnel leaving the organisation is that it is not usual for military personnel to join the organisation at a senior level. Military personnel are brought in at the bottom and then follow a career within the organisation. As an example, if a major of 35 years of age leaves the organisation, it then takes about 15 years until the organisation has trained someone up to the same level.

Turnover is therefore a huge problem for the military organisation. Because turnover has increased over the past few years, the Army Council ordered a study with the aim of reducing the turnover. This paper describes that study.

Problem definition

The objective of the study is:

to give recommendations for reinforcing the bond between young military personnel with indefinite contracts and the Royal Netherlands Army

A strong bond restricts turnover and leads to motivated and satisfied personnel.

The relationship between military personnel and the RNLA can be described as a reciprocal relationship. If the relationship is perceived as negative by the military personnel (is unequal), this will lead to withdrawal behaviour. Military personnel will try to terminate the unequal relationship by redressing the imbalance between their investment and the result. Turnover is one of the methods of redressing the relationship which is perceived as unequal. Absence is an alternative method. The significance of the commitment is therefore greater than simply reducing turnover.

The central concepts in this report are *commitment* and the *intention to leave.*
The intention to leave can be translated into: thinking about leaving, application behaviour and expecting to leave.

When a person enters service, a specific commitment is created with the organisation. This commitment develops over time. It is the result of experience gained in the organisation. Depending on the experience of the individual and the expectations he/she has of the future, this will lead to a strong or less strong desire to remain a member of the organisation. The relationship between military personnel and the organisation may take various forms. A distinction is made between:

1. the *affective* commitment (this refers to the emotional attachment an individual feels towards the organisation, the employee's identification with and involvement in the organisation, i. e . the desire/want to maintain membership);
2. the *normative* commitment (this refers to the individual's feelings of obligation to remain with the organisation, i.e. an obligation to maintain membership);
3. the *continuance* commitment (this refers to the commitment of an individual which is based upon the perceived costs to the person if he were to leave the organisation)

The relationship may vary from purely professional to highly emotional.
A distinction is also made between the commitment to the job, the commitment to colleagues, the commitment to the unit, the commitment to the organisation (the RNLA as a whole) and the commitment to the values and ideals which the RNLA stands for.

The basic study questions were:

1. What is the intention of the young military personnel with respect to leaving the organisation?
2. What is the commitment of the young military personnel with respect to the organisation?
3. How do the intention to leave and the commitment vary with respect to the characteristic features of the tasks of military personnel?
4. What is the link between the commitment and the intention to leave?
5. Which factors influence the commitment and/or the intention to leave of the young military personnel?

The data collected for this study are taken from two sets of telephone surveys. Each time about 300 young indefinite contractors (i.e. younger than 40 years) were questioned.

Results

Intention to leave

The intention to leave was determined by means of three different questions. The respondents were also asked to explain why they might expect to leave the RNLA.

Of those questioned, 57% occasionally *consider* searching for a job outside the RNLA. Almost a quarter (23%) indicate that they have *applied* for a job outside the RNLA within the past year.

Of those questioned, 64% *expect* to still be working for the RNLA in three year's time, 26% do not know and 10% *do not expect* to be working for the RNLA in three year's time.

Actual turnover

In 1998, 270 military personnel left before the end of their contracts out of a total complement of 11,000 military personnel. In 1999, 267 indefinite military contractors left service prematurely. The percentage is particularly high in the age group 30-34 (6% for officers and 7% for non-commissioned officers).

Commitment

The commitment is a major factor in turnover. Work satisfaction and motivation, however, also play an important part. Furthermore, it is a factor which protects against all kinds of escapist behaviour, such as absence through illness.

The commitment is the result of the experience people have of the organisation and of their colleagues during their period of appointment. The respondents in this study were between 18 and 40 years of age, almost no-one was younger than 25. They were all indefinite contractors. This means that most of those questioned had already worked for the RNLA for some time.

Scores for commitment

The commitment of an individual to the organisation in which he or she works may take several forms (simultaneously). We distinguish in this study between three forms of commitment: the *affective, normative* and *continuance* commitment.

The average scores (on a scale from -2 to 2) for these three forms of commitment were as follows:

- affective 0.48
- normative 0.09
- continuance -0.37

These scores indicated that young indefinite contractors do not feel obliged to the RNLA (normative commitment) and see virtually no professional or practical restrictions to leaving the RNLA (continuance). In summary: there are no restrictions on leaving the organisation.

The affective commitment to the RNLA (reason to stay) is poor. This is even the case if a direct question is put about the nature of the commitment (professional or emotional). On a scale of 0 (purely professional) to 100 (emotional), the indefinite contractors rate their own commitment to the RNLA as an average of 64.

The commitment may occur at various levels. Military personnel were asked to indicate how strongly they feel attached to various aspects of the organisation (scale of 0 to 100):

commitment to	score
values/ideals	67
the RNLA as a whole	64
the unit	65
colleagues	77
the job	76

It is not just the past or present situation which is important to the commitment, but also the expectations for the future. For a number of topics, questions were asked about the expectations for the future.

	increase	decrease	same
satisfaction with conditions of employment	8%	57%	35%
satisfaction with career opportunities	13%	43%	44%
satisfaction with content of work	23%	27%	50%
satisfaction with colleagues	8%	14%	79%
satisfaction with managers	9%	20%	71%
satisfaction with lower ranks	12%	20%	67%
pressure of missions abroad	57%	5%	38%

In the first telephone survey, the respondents indicated which factors they felt influenced the commitment. This resulted in a broad range of topics. In order to put these in sequence, in the second survey respondents were asked to indicate for each topic whether something urgently needed to be done about it.

subject	
personnel policy	97%
fulfil promises/agreements	95%
listen to shopfloor	93%
secondary conditions of employment	86%
respect when dealing with personnel	86%
taking the individual into account	85%
career opportunities	85%
function allocation policy	76%
salary	68%
missions abroad	68%
content of job	53%

It is worth noting that the 'interaction topics', the way in which the RNLA deals with personnel, can all be found in the top half of the table.

'Personnel policy' is at the top of the list of priorities among the young personnel.

Of all those questioned, 8.5% named it as a (possible) reason for leaving.

As 'personnel policy' encompasses a great deal, we explicitly asked what they meant by 'do something about the personnel policy'. One third of the young indefinite contractors named the career policy and one quarter asked for a clear, unambiguous and fair policy.

Career

A concrete part of the personnel policy is the career. The career, particularly the lack of prospects, is often *explicitly* named as the reason for wanting to leave the RNLA. Of all the personnel questioned, 13% thought their career a reason to leave. The career is often named by those who expect to leave (15%) and those who are in two minds (22%).

Of those questioned, 43% expect satisfaction with career opportunities to decline in the future, 13% expect an increase in satisfaction.

The indefinite contractors were also asked what should happen about the topic of careers. In addition to creating opportunities, they particularly ask for more tailor-made work. The length of function appointment is too strict (should be possible to stay in a function for longer). Insufficient account is taken of the wishes of the individual for specific functions (no choice, they are posted). There are also renewed pleas for fairness and transparency in the function allocation process.

Dealing with personnel, perceived fairness

Dealing with personnel is often named as a reason for leaving and as a suggestion for reinforcing the commitment. It is also frequently mentioned during explanations of other topics (conditions of employment, missions abroad, personnel policy etc.).

The aim is to take the individual into account, listen to personnel, show respect and appreciation. Personnel also often ask for promises and agreements to be fulfilled.

All these points are high on the list of priorities of young personnel.

Salary and conditions of employment

In particular those who are currently in two minds as to whether they will still be working for the RNLA in three years' time, conditions of employment are often cited as a reason for leaving.

As many as 57% of those questioned expect to be less satisfied in the future with conditions of employment. It is noticeable that they often say that the situation must not get any worse.

For the topic of conditions of employment, too, the respondents were asked to indicate what needed to be done.

Finance, in particular travel allowances and salary, is the most frequently mentioned item.

Missions abroad

Missions abroad are the most often cited reason for leaving. However, missions abroad are not high on the list of priorities about which something needs to be done. It is chiefly those people who are currently in two minds as to whether they will still be working for the RNLA in a few years who name missions abroad as a possible reason for leaving.

More than half of the respondents expect an increase in pressure of missions abroad. This is explained by the reduction in size of the RNLA and an increase in the importance of missions.

Respondents refer to the frequency of missions abroad (too many and too often) in combination with family life as a reason for leaving. Missions abroad are also often named under the topic of personnel policy. People call the division unfair (some personnel never go) and plead for earlier notification of postings (not at the last moment) and attention to aftercare (for example, that there is a function waiting for them on their return and not that they are left out in the cold) and the home front.

Work content

Work content plays a major role in the commitment for the military personnel to the RNLA.

The assessment of the content of the job was also measured by means of closed questions. In general, young indefinite contractors rate their jobs very positively. They are varied, they have sufficient autonomy and clarity about what they have to do and the feedback is more than satisfactory. The job content is a major positive factor for the commitment and restricting turnover. The perception of the work content determines the affective commitment.

Conclusions

Of all those questioned, 10% expect not to be working for the RNLA in three years' time. One quarter is in two minds. There is a strong link between the commitment to the RNLA and the intention to leave.

The emotional bond of the personnel with the RNLA is poor. Young personnel do not perceive any obstacles to leaving the RNLA.

Young personnel feel more strongly bound to the job and to the people in the workplace than to the organisation as a whole.

There is a multitude of reasons at the root of the intention to leave and the commitment. We will confine ourselves here to a few important observations:

The most important point for attention for the young indefinite contractors is dealing with personnel. The organisation is not always a trustworthy contract partner: agreements and promises (explicit or otherwise) are not always fulfilled, and policy (also in the form of promises) is inconsistent. Furthermore, the personnel perceive unfairness in the execution of policy. They also perceive a lack of tailor-made work and respect for the individual.

The perceived unfairness is expressed in the assessment of the (personnel) policy in general and the career (policy and opportunities) in particular, perceived fairness also plays a part in missions abroad.

Missions abroad are a risk factor. It cannot yet be said that negative influences can be observed. The military personnel themselves indicate clearly that missions abroad could be an obvious negative factor (reason for leaving) in the future.

POST-TRAUMATIC STRESS DISORDER IN CROATIAN WAR VETERANS; INCIDENCE AND PSYCHOSOCIAL FEATURES

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ABSTRACT

The paper examines the incidence of post-traumatic stress disorder in a sample of 3217 Croatian war veterans, and the influence of different features of pre-war, wartime and post-war status of the respondents on the onset of the disorder. Based on the results of two different instruments used (Mississippi Combat Scale and Watson PTSD Interview), 25% war veterans were classified in the "partial PTSD" category (the disorder diagnosed on 1 instrument). whereas 16,22% were denoted as "true PTSD" (the disorder diagnosed on both instruments administered.

Although the PTSD incidence in veteran population is primarily ascribed to exposure to war stressors, recent studies highlight the importance of pre-war, war-time and post-war psychosocial features (family stability, family relations, social life, possible alcohol and drug use) in onset and development of the disorder. Therefore, in the second part of the research respondents with comparable number of war stressors experienced were singled out from the basic sample, and categorized into three groups: "no PTSD", "partial PTSD" and "true PTSD". Differences in pre-war, war-time and post-war status features among the three sub-groups were examined by discriminative analysis, which revealed the influence of the pre-war connative status and social functioning of war veterans on the onset of PTSD, as well as on the onset of acute and chronic health problems in veteran population during and after the war.

PTSD is a set of reactions emerging in normal people exposed to abnormal traumatic events and situations. PTSD symptoms are primarily a response to specific trauma experiences and in a first (acute) stage can be considered as part of psychological recovery process. Acute combat stress and post-traumatic distress are by no means sign of weakness or cowardice, as was the dominant belief in the centuries-long history of warfare, but a natural warning that human beings are not robots insensitive towards terrors of war. Events occuring in the battlefield leave trace on their witnesses -regardless of how well they have been selected, trained and motivated, they cannot avoid the shock at the extent and degree of human suffering they witness to or are affected themselves.

The first shock, or acute combat stress, in time may grow into a disorder nowadays known as post-traumatic stress disorder, which is characterized by coexistence of three groups of symptoms: re-experiencing, avoidance and increased arousal. Post-traumatic stress disorder victims are torn between the "shadows of the past" and inability to forget, tension, irritability and violent outbursts of anger, which alternate with periods of exhaustion, dumbness, depressiveness, withdrawal and isolation.

However, PTSD need not necessarily develop in all individuals exposed to a traumatic experience. In peace-time (e.g. cases of sudden death of a close person, rape, terrorist attack, serious accidents, disaster or another traumatic situation) incidence of the disorder ranges between 0,5% and 7%, whereas in combatants it varies from 15 % to up to 50% of cases. Also, progression of the disorder from acute stage, noticeable within first months following the trauma, into chronic form, characterized by extended disturbances, will occur in some individuals, whereas most those affected will recover spontaneously. Whether post-traumatic stress disorder will occur, how severe and whether it will grow into a chronic condition depends on the features of traumatic experience but also on complex interaction of intervening biological, psychological and social factors.

This paper aims to provide answers to two basic questions concerning the problem of the post-traumatic syndrome in Croatian war veterans:

1) what is the incidence of post-traumatic stress disorder in veteran population and

2) what features of psychosocial status of Croatian veterans (pre-war, wartime and post-war status) could have facilitated the onset and development of the disorder regardless of the features of the traumatic experience.

At this occasion we will present only some results of an extensive research on post-traumatic stress disorder in Homeland Defence War veterans.

PROCEDURE

The research was conducted on a sample of 3217 male respondents who were demobilized veterans of the Homeland Defence War. They were asked to fill a comprehensive set of questionnaires. This paper will present results from 4 questionnaires

1) GENERAL DATA QUESTIONNAIRE covering psychosocial features of respondents from pre-war, war-time and post-war period - a total of 69 variables analysed

2) WAR TRAUMATIC EXPERIENCES QUESTIONNAIRE - assessing types and incidence of traumatic war experiences and containing 40 variables in total

3) WATSON PTSD Interview containing 17 items related to PTSD symptoms in accordance with the DSM categorization and

4) M-PTSD QUESTIONNAIRE by Keane et. al., widely known as the Mississippi Combat Scale containing 39 items

Table 1. **In the first part of the research respondents were categorized into three sub-groups, based on the results from two measures of PTSD:**

A - "no PTSD" (below the diagnostic criteria on both questionnaires);
B - "partial PTSD" (meeting the diagnostic criteria on one questionnaire)
C - "PTSD" (meeting the diagnostic criteria on both questionnaires)

In the second part, from the three subgroups the respondents with equal number of traumatic war experiences (based on the TCWE-USTBI - WAR TRAUMATIC EXPERIENCES QUESTIONNAIRE) were isolated. The criterion chosen was the results on the USTBI Questionnaire as a dominant figure in the C subgroup (respondents with PTSD), which was 21 (out of total 40 traumatic experiences listed in the Questionnaire). In this way new three sub-groups were made:

A1 (N=47)

B1 (N=42)

C1 (N=34) equal in number of number of traumatic war situations experienced (21)

Among the groups defined as A1, B1 and C1, by means of simple ANOVA, differences in the pre-war, war-time and post-war status features were examined. The presence of latent dimensions of differences among the groups observed was tested by discriminative analysis, separately within each subgroup of variables as predictive sets.

RESULTS AND DISCUSSION

1. INCIDENCE OF POST-TRAUMATIC STRESS IN HOMELAND DEFENCE WAR VETERANS

In order to obtain as complete and objective answer as possible on the incidence of PTSD in Croatian war veterans, the authors compared results of the research in question with the results of two previously conducted studies. (Table 2).

Table 2. CROATIAN WAR VETERANS UP TO DATE EPIDEMIOLOGICAL PTSD STUDIES

STUDY	N	INSTRUMENTS	PTSP (%) LOWER LIMIT	PARTIAL PTSP (%)	PTSP (%) UPPER LIMIT
Gustović, Komar (1994)	384	PTSD -I	14,0	17,0	31,0
Kušević, Vukušić, Lerotić (1998)	3504	M-PTSD PTSD - I	14,6 16,6	10,4	27,0
Komar, Vukušić (2000)	3217	M-PTSD PTSD - I	16,2	25,5	41,7

The first research on the incidence of PTSD in Croatian war veterans was conducted in 1992 and 1993 on a sample of 384 repondents - professional soldiers, reserve personnel and demobilized; administered was Watson's clinical interview by experts - psychologists and psychiatrists.

The other research involved analysis of results on a sample of a total of 3504 male respondents (demobilized veterans); the instruments administered included the Mississipi Combat Scale (M-PTSD) and Watson PTSD interview. The paper presents the data on the incidence of PTSD on each measure separately.

In the research here discussed, which is the third research of PTSD incidence in our country, the most conservative and the strictest criterion of PTSD diagnosis was used, whereby only veterans showing results above the criteria in both instruments used were singled out.

As noticeable, the percentage of respondents with diagnosed PTSD remained similiar across the three projects (from 14 % to 16,6%). In each project the category "partial PTSD" was included, comprising respondents in a wide range of incidence from 10,4 % to 25,5%. In the first instance in the "partial PTSD" were respondents who missed one symptom to be categorized as "PTSD" by the Watson PTSD Interview criteria. In the second project "partial PTSD" had less strict criteria, therefore it included respondents revealing at least a few signs of the disorder in the interview. In the third project the category "partial PTSD" referred to respondents meeting diagnostic criterion on 1 instrument applied. The Introduction of the category "partial PTSD" is a result of two factors, one consisting in shortcomings of the existing measurement procedures, evinced best by the discrepancy in determining PTSD with two

different instruments on the same sample. The other reason is in the very nature of the disorder, whence in respondents revealing some symptoms at the time of research in time the true disorder may develop.

In conclusion, the results of the existing research on PTSD incidence in Croatian war veterans suggest that at this moment at least 14-16% of population participating in the Croatian Homeland Defence War suffer from post-traumatic stress disorder. This figure is very probably the lower limit of incidence, whereas the upper limit could be inferred ranging from 25 up to over 40%, which, it should be noted, could change or remain at the same level, depending upon the treatment of veterans by social environment, especially on existing programmes of psychosocial assistance as well as on the availability, type and intensity of professional treatment of individuals with psychological disturbances caused by war experience.

2. THE ROLE OF PSYCHOSOCIAL FEATURES IN ONSET AND DEVELOPMENT OF POST-TRAUMATIC STRESS DISORDER

In our attempts to throw light on specific role and significance of psychosocial features of veterans in onset and development of PTSD, in the second part of the research three sub-groups of respondents were formed, differing in current psychological status but comparable in the number of traumatic war experiences. The differences in their pre-war, wartime and post-war psychological status were analysed separately. Earlier studies were set on the association between type and intensity of trauma and disorder, whereas the recent ones increasingly focus on factors preceeding the trauma, the circumstances of the traumatic event as well as on the events following it. The answers to these questions would not only ensure a better insight into the post-traumatic stress disorder, but also have practical value in terms of taking appropriate prevention measures and of a improved organization of therapy.

Statistically significant differences among the three sub-groups were found for 10 out of 28 examined pre-war psychosocial features (Table 3). The respondents with PTSD differed from the "no PTSD" group in coming from large families, in bad relationships with mothers during their adolescence; in fathers prone to alcohol; in lower educational level; in more frequent school drop-outs and part-time student status; in problematic relationship with their environment and in irregular serving in the military. Discriminative analysis of differences among the 3 groups of respondents with respect to pre-war psychosocial status 2 statistically significant discriminative functions were found. By level of projections of some of the variables the first discriminative function was defined as FAMILY PROBLEMS IN ADOLESCENCE FACTOR, and the other as PROBLEMS IN PRE-WAR SOCIAL FUNCTIONING FACTOR. The results obtained agree with the results of the recent studies by King et. al. (1996, 1998), who found significant association between PTSD and the poor pre-war social and economic status, poor relationship with parents, family instability and early traumatic experiences. In general the results obtained support hypotheses on PTSD predisposition resulting from troubled childhood, problematic relationship with the environment and accumulated effect of stressful experiences dating from adolescence.

TABLE 3 DOMINANT PRE-WAR STATUS FEATURES OF VETERANS WITH DIAGNOSED PTSD

FEATURES :	*DISCRIMINANT FUNCTIONS:*
large families	
bad relationship with mother in the adolescence	**FAMILY PROBLEMS**
father prone to alcohol	**IN ADOLESCENCE**
poor family relationships in general	
lower educational level	
frequent drop-outs	**PROBLEMATIC**
frequent history of part-time students	**RELATIONSHIPS WITH**
problems in military term of service	**SOCIAL ENVIRONMENT**
frequent interruptions in military term of service	

The three sub-groups differed only in three variables out of 16 war-time status and behaviour features (Table 4). Veterans with PTSD (C1) were wounded more times and sought medical assistance more often because of psychological and health problems. In other wartime status features no statistically significant changes were found, which could be taken as empirical proof of comparability of the groups examined by the criterion of exposure to war experience. High degree of the exposure seems to have prevailed over those of cofidence in commanders, level of trainedness, volunteering versus mobilized status, and even the time period spent in combat. Discriminative analysis yielded 1 statistically significant function, defined as FACTOR OF ACUTE HEALTH PROBLEMS RESULTING FROM COMBAT DEPLOYMENT. A review of post-war status features in veterans with PTSD reveals a sad situation characterized by deterioration of the disorder accompanied by lack of support in the social environment, proneness to social isolation, alcoholism and drug use and impaired health in general.

TABLE 4 DOMINANT WARTIME STATUS FEATURES OF VETERANS WITH PTSD

FEATURES :	*DISCRIMINANT FUNCTIONS:*
- wounding - sought assistance during the war because of psychological disturbances - sought assistance for other health problems	**ACUTE HEALTH PROBLEMS RESULTING FROM WAR DEPLOYMENT**

TABLE 5 DOMINANT POST-WAR STATUS FEATURES OF VETERANS WITH PTSD

FEATURES :	*DISCRIMINANT FUNCTIONS:*
- specific health consenquences due to wartime deployment **- poor overall health condition** **- seek help from mental health professionals** **- confide war traumas to physicians only** **- re-socialization problems** **- poor social life** **- bad economic status in general** **- war deployment adversely affected family relationships** **- proneness to alcohol following mobilization** **- proneness to drugs following mobilization** **- taking hard losing fellow-combatants to war** **- taking hard deaths of innocent civilians to war** **- more mobilized for illness** **- demobilized unwillingly** **- seeking the Invalid-of-War status**	**CHRONIC HEALTH PROBLEMS**

Among the other results to highlight is the fact that the by pre-war, wartime and post-war features the group of veterans with partial PTSD is much more comparable to the "no PTSD" group than the group with developed PTSD.

Each research of the role of psychosocial features is confronted with limitations in the choice of variables available. In this study too there were not data on the cognitive and emotional pre-war, wartime and post-war status of veterans, and it did not include all conative and social features that can be found in real life. It is our opinion, however, that the results presented in this study are supportive enough of the hypothesised considerable influence of social factors on the onset of post-traumatic stress disorder. Broken family and conflict with the environment in one's adolescence increase the risk of onset of post-traumatic stress disorder later on in life, whereas lack of social support following traumatization opens the door to chronic state and new problems (addiction, impaired health, suicidal ideas). As in wartime

conditions PTSD casualties multiply, so does the entire community become more responsible, all the more so it is about redeeming the people who were ready to risk their life to defend others.

PSYCHOLOGICAL PREVENTION OF DRUG ADDICTION IN THE ARMED FORCES OF THE REPUBLIC OF CROATIA

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ABSTRACT

Dependence problem is becoming increasingly present in Croatian society too. The military is but a segment of it, recruiting civilians, who bring with themselves their habits and attitudes related to drinking and taking stimulants. Dependence prevention in the Armed Forces of the Republic of Croatia includes measures of primary and secondary prevention of excessive drinking and alcoholism and prevention of drug abuse and dependence.

Psychological programme of dependence prevention is based on three areas:

1. working with young servicemen

2. working with active military personnel responsible for young servicemen

3. working with active military personnel and civilian employees in the military

Working with young servicemen is directed towards primary and secondary prevention of drug and alcohol addiction. Primary prevention involves efforts to avert the "healthy", unaffected population from starting taking drugs and alcohol.

Secondary prevention aims at minimizing the risk of onset of addiction with young servicemen who have engaged into experimental use or display symptoms of alcohol abuse but have not developed addiction.

The program for young servicemen is conducted during their basic, specialist and final training, that is throughout their service term.

The program for active personnel responsible for young servicemen is conducted at two levels, the first involving modification of their own attitudes towards alcohol abuse, alcoholism and drug abuse, whereas the second is about training in timely recognition of young servicemen with alcohol and drug problems and in reacting appropriately.

With active military personnel and civilian employees primary and secondary prevention is applied as described, complemented with a special instruction for commanders on drinking and addiction problems.

The prevention programme is in general a continuous one, and it also includes training of military psychologists in institutions in Croatia specialized for dependence and alcoholism treatment.

INTRODUCTION:

The worldwide problem of drug dependence is present in Croatia too, and is growing more and more serious. The World Health Organisation data place alcoholism third on the list of fatal illnesses, preceeded only by coronary diseases and malign tumors. Epidemiological situation is as follows: 15% adult male population affected with alcoholism, another 15% manifest excessive drinking (Hudolin, 1989). Studies revealed drug abuse in 5% urban adolescent population, and 20% population over 16 have tried drugs (Sakoman, 1995).

The situation is scarcely different in the Armed Forces, recruited as they are from civilians, some among whom will bring their drinking and substance use habits to the military. With regard to the alcoholism and other dependence problems, military population can be categorised as follows: young servicemen and active duty personnel. Young servicemen are expectedly more likely to manifest maladaptive behaviour, including alcohol and substance abuse and addiction.

Active duty personnel, on the other hand, displays a wide range of demographic characteristics, which implies different problem distribution as a function of age and customs relating to substance use.

While working on its own Prevention Programme, the Department of Military Psychology sought reference in methodological guidelines, respective reference, and in the National Program for Prevention of Substance Abuse (by Croatian Government Board for Prevention of Substance Abuse, 1955). Substance prevention is guided by the fact that the extent of dependence (number of addicts) is a function of the supply and the interest in taking substance. Therefore, the Prevention Programme by the Department of Military Psychology addresses the demand for substances, and thus the factors of interest in taking them, by means of primary and secondary prevention measures.

Primary prevention of drug and alcohol dependence: conducted to prevent healthy, non-affected population from starting to take substance and excessive drinking. Primary prevention measures shouldn't employ sensationalist approach, but rather

* encourage and support healthy behaviour and life styles, attaining social skills and healthy problem coping strategies
* dispel attitudes and perceptions on addict behaviour as positive and anti-authority and also the non-harmful perception of drugs and alcohol
* provide intimidation-free training containing objective information on hazards and effects of substance and alcohol use on health and on social functioning
*the training should always address hazards of alcohol, substance and nicotine use side by side with the consenquences
*undertake intensive campaigns following the instances of drug use and excessive alcohol among young servicemen

S***econdary prevention*** is focused on minimizing the risk of development of addiction in new, curiosity-driven and regular users, as well as those manifesting symptoms of alcohol abuse, through appropriate intervention and continuous psychological counselling.

PSYCHOLOGICAL PROGRAMME OF PREVENTION OF DEPENDENCE IN THE ARMED FORCES OF THE REPUBLIC OF CROATIA

Psychological prevention programme is based on 3 subprograms; one comprising prevention with young servicemen, and the other two intended for active duty personnel, those interacting with young servicemen, and the general active personnel

Psychological prevention program for young servicemen	Psychological prevention program for active duty personnel	Psychological prevention program for active duty personnel

PSYCHOLOGICAL PREVENTION PROGRAM FOR YOUNG SERVICEMEN

By the time they join the military young servicemen have already built an attitude relating to substance abuse. The 10-month service period, as expected, allows little time for solving the abuse and dependence problem. Psychological prevention programmes for young servicemen address the healthy population, susceptible at this particular age and open to attitude change. The objective of primary and secondary prevention with young servicemen are healthy attitudes on substance and psychoactive drugs healthy and resistent either to persuasion by peers who occasionally take substances, or to ill-conducted prevention programs.

Prevention programme for young servicemen is conducted on several training levels (basic and specialist training) by military psychologists. It involves counselling platoon commanders on watching for risk factors of maladjustment and substance and alcohol abuse symptoms in young servicemen, and also instruction of servicemen on the dependence issue (in compliance with the primary prevention of dependence), and psychological counselling of servicemen manifesting maladaptive behaviour. Organisation of substance-proving tests, when necessary, is a co-work of military psychologists and physicians.

PSYCHOLOGICAL PREVENTION PROGRAM FOR ACTIVE DUTY PERSONNEL INTERACTING WITH YOUNG SERVICEMEN

Prevention of dependence intended for young servicemen comprises specific measures (instruction of young servicemen, attitude altering and psychological counselling of individuals with alcohol or substance abuse problem. Of equal importance are non-specific prevention measures, including improving the relationships and communication among commanders at different levels, the young servicemen-commanders communication, free time organisation, psychological counselling for servicemen manifesting problem or maladaptive behaviour other than substance abuse.

Commanders interacting with young servicemen make a significant factor in prevention of dependence in this population, hence the importance of quality instruction of commanders on effective communication, adolescence, maladaptive behaviour and dependence.

Instruction of commanders on the dependence issue by military psychologists takes place at 2 levels:

level 1: altering the commanders' attitudes on alcohol abuse and alcoholism, substance "experimenting" and abuse, complemented with promotion of healthy life styles and problem coping styles, and at the same time their attitudes on such behaviours among themselves or among young servicemen

level 2: instruction directed at timely perception of servicemen with alcohol and substance problems, and at appropriate responding to such instances (inappropriate "over-responding", namely, can only aggravate the problem, for instance result in labelling somebody "a hero" and hence an identification model, whereas "under-responding" can encourage others to try substances.

Evaluation of the training on dependence is carried out by means of the questionnaires "Attitudes on dependence" and "Dependence information" administered at the beginning and upon completion of the 1-year training cycle.

In addition, suggestions are provided to commanders on how to deal with servicemen manifesting dependence-related symptoms.

PSYCHOLOGICAL PROGRAMME OF PREVENTION OF DEPENDENCE FOR ACTIVE DUTY PERSONNEL

Active duty and civilian personnel is made up mostly of men aged 20-60, and in the dependence regard much reflects the civilian population. which implies the alcohol problem present side by side with the substance problem. The problem is manifested differently across units as a function of age and regional features in this regard, and other factors affecting supply and demand of substances.

Individuals with problem behaviour related to alcohol and other types of dependence that loose soldier efficiency are responsible for increased number of incidents and undermine system safety. The dependence problem thus grows from the individual problem into a public, reflecting on safety, psychological combat readiness and also on the public perception of the Armed Forces.

This population can be approached through specific and non-specific measures of the aforedescribed frame of primary and secondary prevention. Military psychologists will provide semiannual instruction on alcoholism and dependence problem, underlining the hazards and the consenquences involved, and promoting healthy life styles and coping strategies.

Commanders should in addition be counselled on specific topics related to treatment of maladaptive individuals manifesting alcohol or substance use. The counselling should convey a clear and convincing message of non-tollerability of alcohol and substance abuse, and - at worst - dependence.

Following the incidents due to alcohol or substance abuse (dependence), military psychologists conduct individual psychological counselling and observation of the problem individual. They are not commissioned to treat addicts, but to provide counselling within the frame of secondary prevention of dependence, and in a mutual effort with the unit commander and physician to get addicts to treatment.

PROGRAMME EVALUATION

Psychological Programme of Prevention of Dependence is evaluated annually by the Department of Military Psychology, based on reports by military psychologists on activities executed of the Prevention Program, on the results of evaluation questionnaires and on evaluation meetings, if necessary.

CONCLUSION

The critical fact of dependence prevention in the military is that the problem is a general society problem too, and that military programs should follow the national strategy of dependence prevention tailored to the specific military population. Prevention should be conducted by experts trained in the issue, which is why military psychologists in Croatian Armed Forces attend additional training programs presented by experts of the National Centre of Dependence. The Psychological Prevention Program is a result of various incident prevention activities developed by unit psychologists and reflects the commitment to deal more effectively with the alcohol and substance dependence problem. The Program needs continuous evaluation and modification to maintain and improve efficiency.

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RECRUITING FOR THE MILITARY WHEN THE ECONOMY IS BOOMING.

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ABSTRACT

In an increasing number of democracies, the economy is growing rapidly and unemployment rates shrink. Also, many of these countries do no longer feel an immediate military threat. In these circumstances, it becomes more and more challenging to recruit sufficient numbers of appropriate quality for the Military.

This paper analyzes the current situation for the Belgian Armed Forces and develops the strategies that can lead to the improvement of the recruiting. Special attention will be devoted to the methodological and procedural aspects of the selection process.

Introduction

This paper takes a closer look at the recruiting problems that many Armed Forces experience currently. After stating the problem, we try to analyze its underlying causes. In a following section possible actions to address the problem are described. Finally, a discussion puts these measures into perspective and some conclusions are drawn.

Problem definition

In the recent history of Western countries, the first oil crisis at the beginning of the seventies caused a major economic recession characterized by high levels of unemployment. High numbers of jobless youngsters made it relatively easy for the Forces to meet their recruiting goals. As the years went by, the economic situation improved only gradually and unemployment, especially of young people, tended to become structural.

After the fall of the Berlin wall and the end of the cold war, recruiting needs were reduced as a result of the downsizing of the Forces with possible exception of countries such as Belgium, France or the Netherlands where conscription was abandoned and an all volunteer Force had to be manned.

The last few years have been characterized by a fast growing economy in many Western countries. At the same time these countries seem to experience increasing difficulties in enlisting the required numbers for their Military. Although the situation may vary from country to country and for the different categories of personnel that need to be enlisted, one can easily state that the recruiting for the military is currently doing relatively poorly. The U.S. General Accounting Office recently put it in this way: "*The Department of Defense (DoD) faces a significant challenge in recruiting and retaining the hundreds of thousands of new recruits it enlists each year. The last 2 year in particular have been difficult for the military services as they have struggled to meet their recruitment goals. This difficulty, which some believe represents a recruiting crisis, makes the services' problems with first-term attrition rates even more critical.*"[1]

Analysis

The booming economy in these countries creates large numbers of new jobs. This combined with an increase of the average age at which youngsters become available for the labor market and stagnation or decrease in demographic figures causes shortages on the labor market. For many countries, this is a new phenomenon unseen since the sixties. The struggle for attracting and hiring people is fierce. Lots of money is devoted to advertising, head hunting and many incentives to attract and retain people. As a result, youngsters that are interesting for the Services have options. They generally are well informed and willing to negotiate their contract rather than simply accepting it. Governments usually lack the flexibility of private companies and this is a handicap on a dynamic labor market. Many armies fail to keep up the pace of salary increase and become gradually less attractive. The contracts proposed by the Forces lack flexibility and have little or no room for negotiation.

Experiencing recruiting problems leads to the question whether the products we offer are sufficiently valuable. A careful analysis of the perceived positive and negative aspects of the different military jobs must be conducted in order to find ways to increase their overall attractiveness. Of course, financial aspects are an important element of the attractiveness, but it would be foolish to expect to solve all recruiting problems only by a reasonable increase of the salaries.

Traditional aspects of military life that attracted youngsters tend to become available in civilian settings with fewer constraints. Let's name a few. Outdoor activities with a thrill such as survival training, parachuting, diving etc. become more available and affordable to many youngsters. High technology is probably as much present in off the shelf mobile phones,

[1] Military Personnel: Services Need to Assess Efforts to Meet Recruiting Goals and Cut Attrition. Report to the Chairman and Ranking Minority Member, Subcommittee on Personnel, Committee on Armed Services, U.S. Senate. United States General Accounting Office GAO/NSIAD-00-146, June 2000 p.3.

personal computers and gadgets as in modern military equipment. The real feeling of driving a tank or firing life rounds tends to become less present in the Military, due to the extended use of simulators that are often less appealing than video games!

The perceived organization culture is another determinant of the propensity to enlist. Values like discipline, sustained effort, hierarchy and suppression of individuality aren't very motivating for the young generation.

Especially in Europe, the idea of having a lifetime career in the Military was very attractive during the economic crisis. This has changed. In an environment where many good jobs are readily available, the threat of becoming jobless is less frightening. Long-term commitment in the prospective of slowly building a full career and earning an easy retirement, is no longer appealing to youngsters who learned to live fast and expect immediate effect of their work.

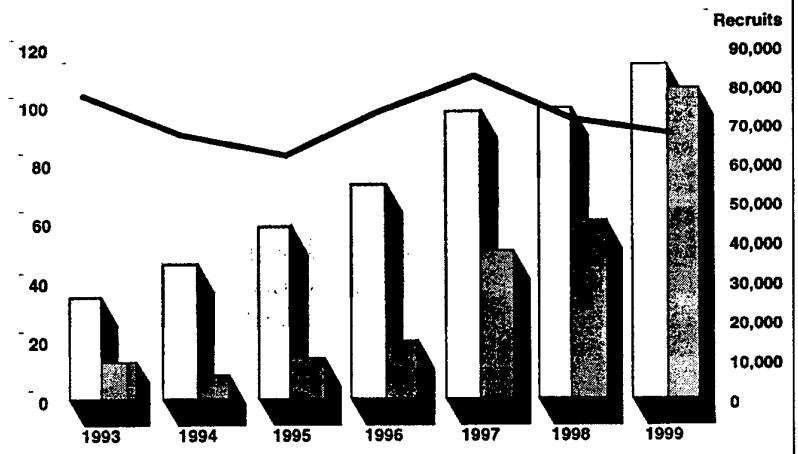
Measures to tackle the problem

Given that the Military cannot meet their annual recruiting goals, what can be done to about it? Different approaches are possible: the recruiting efforts can be increased, the products that are offered can be made more attractive, actions can be undertaken to lower the required numbers or to increase the number of potential applicants and smart selection and allocation systems can diminish the losses during the selection process. Let's look at these options in more detail.

a. Increase the recruiting effort

One of the obvious ways to increase the number of applicants for the Services is to augment advertising, number of recruiters, recruiting stations and enlistment bonuses. The increase of these means as a reaction to difficulties in recruiting the required numbers is well illustrated with the next figure[2].

Figure 1: The Army's Expenditures for Advertising and Enlistment Bonuses (fiscal year 2000 constant dollars in millions)



	1993	1994	1995	1996	1997	1998	1999
Advertising	$34.3	$45.2	$57.4	$72.1	$97.0	$97.8	$112.9
Enlistment bonuses	$12.3	$8.1	$13.6	$19.0	$49.6	$59.7	$105.2
Number of recruits	77,563	68,039	62,929	73,418	82,088	71,752	68,209

Source: DOD.

[2] Military Personnel: Services Need to Assess Efforts to Meet Recruiting Goals and Cut Attrition. o.c. p. 7

From fiscal year 1993 through 1998, the U.S. Army increased its number of recruiters from 4368 to 6331[3].

b. Product enhancement

New careful studies of the perception of the different facets of the military jobs by the youngsters need to be conducted[4]. These studies will identify which elements are attractive and which tend to withhold potential candidates to apply. Older existing studies covering that subject risk to be no longer valid given the fast evolution of the societal values. Such studies must not only lead to improve the advertising but in the first place to modify the content of the military jobs in order to make them more attractive and to reduce the cultural gap between the civilian and military world.

c. Diminishing the required numbers

Another way of resolving the recruiting problem at least partially is to diminish the numbers that have to be enlisted. Given that the Forces want to maintain their level of efficiency, two options are available: choosing for systems requiring fewer personnel and taking actions to reduce attrition.

In the process of developing or acquiring new weapon systems it becomes increasingly important to look for systems requiring few personnel to operate. The firepower of a traditional field artillery battery or a Multiple Launch Rocket System (MLRS) is quite comparable for instance. Yet the personnel needed to operate an MLRS is just a fraction of the people needed in an artillery battery. The US Navy develops 'smart ships' that require less than half of the people needed on board a similar classic ship. Systems requiring less personnel are often more expensive than their traditional counterparts. However, in times of difficult recruiting and retaining personnel, they might turn out to be the cheapest ones in the long run.

Reducing attrition is another way of reducing the need to recruit. Along with the experienced difficulties in recruiting the needed numbers of applicants, many Western Forces face the problem of increasing attrition during first terms. Both have probably the same cause: the youngsters have options. Leaving the Military earlier than planned is not such a big step when one can be confident to find (a more attractive?) job promptly. Reducing early attrition can be achieved by a series of measures.

- Extra attention can be given to recruits struggling during basic training. This can be done by remedial teaching, personalized physical training programs, allowing more time to reach the goals etc.
- Recruits failing to meet the standards during training for the trade they were assigned to, can be reassessed. Depending on the reasons of the failure and the motivation of the applicant, it can be worthwhile to give him or her a second chance in assigning him/her to another trade less demanding for the aspect s/he failed in.
- The transition from a permissive civilian society to boot camp represents a cultural shock causing many enlistees to quit. It's easy to make that transition more progressive.
- Training practice needs to be questioned. Many facets of current practice, especially during boot camp, tend to be obsolete and contrast sharply with the youngster's world and values. Principles such as '*break 'em down to build them up*', formal discipline, rising early without real purpose, lack of privacy and comfort etc. cause trainees to quit.
- Prepare the applicants better. Increased efforts in informing the applicants well will reduce attrition. The use of realistic job previews, familiarization with the military world through open doors, visits etc., providing physical training programs before enlistment and so on, need to be enhanced.

[3] o.c. p. 6

[4] Such as: Jerald G. Bachman, David R. Segal, Peter Freedman-Doan and Patrick M O'Malley, 'Who Chooses Military Service? Correlates of Propensity and Enlistment in the U.S. Armed Forces' in Military Psychology, Volume 12, Number 1, 2000 LEA Publishers, London

- Give the applicants what they look for. By paying more attention to the expressed preferences of the applicants concerning trade and geographic location of his/her unit during the allocation process, one might reduce attrition.

d. Increasing the number of potential applicants

Recruiting problems are partly due to the fact that the number of persons who are allowed to apply is artificially limited. Many countries still require that the applicants have the nationality of the country or that their age is between sharp limits. Moreover many countries restrict the access of women to certain specialties or even require such obsolete things as being unmarried[5]. The question is whether these restrictions that are mostly based on historical grounds have to be kept.

Another way of broadening the segment of the population that can be interested in joining the Forces is the diversification of the proposed jobs. The Belgian example can clarify this point. In Belgium, most of the volunteers sign up for a lifetime career. In order to maintain an acceptable age structure in the combat units, the army decided to enlist soldiers for combat trades only. After a period of approximately 10 years, these soldiers will get the opportunity of a reconversion to physically less demanding jobs. This can be an appropriate plan for personnel management within the army but it also restricts the number of potential applicants to the very small group of youngsters interested in combat trades.

e. Use smart selection and allocation systems

A last major possibility to address the recruiting problem is to optimize the selection and allocation systems. We'll develop three facets: the selection process, the used methodology and the selection burden.

The selection process needs to be a fast one. Many youngsters apply simultaneously for different jobs. The company that is the quickest to process the applicant and eventually hire him/her has a clear advantage over the others since it is reasonable to assume that the applicant is less likely to continue his/her search for a job when s/he has a firm offer.

In times of shortage, selection systems should move from positive selection to negative selection. Positive selection aims at finding the best applicants whereas the focus of negative selection is to reject the weakest candidates. The inherent danger of positive selection systems is the use of multiple cut-off scores rejecting significant numbers of applicants. When the assessed qualities show low intercorrelations, such selection systems end up rejecting too high proportions of the applicant pool. The smart approach consists of assessing the applicant's qualities and rejecting only very few applicants. Once the competency profile of the applicants is determined, they have to be compared to the desired competency profiles for the vacant jobs. Modern classification models allow then capitalizing on the distributed qualities in the applicant group. An example might illustrate this. Imagine a selection system looking for the best ones. That probably will reject all applicants with poor results on physical fitness tests. The proposed approach will recognize the fact that an applicant performs poorly on the physical tests but won't reject him/her. It very well can be that this person performs well on other tasks and turns out to be perfectly eligible for jobs where physical fitness is of minor importance.

In order not to loose applicants, the selection burden mustn't be too high. Actions aimed at the reduction of the selection burden can include reimbursement of travel costs, providing free meals and lodging, reducing the time spent for selection activities, use of computer adaptive testing, use of the Internet, decentralizing the selection centers, opening them when the applicants are available (weekends, evenings, school holidays), not obliging the applicants to get documents for which they have to go to their school, city hall, police station etc. and using a tri-Service selection system.

[5] This is the case for Italian officer applicants.

Discussion

A natural reaction to recruiting problems is to increase advertising, enlistment bonuses and numbers of recruiters. However, the effect of these measures is influenced by similar actions undertaken by other actors on the labor market. If all actors increase their effort in a proportioned way, the augmentation of the recruiting effort risks not paying off. Conversely, keeping the advertising budget constant while the competitors are increasing their effort will result in a loss of applicants. In this matter, the different Services are in competition with each other. In countries where the advertising is organized for each Service separately and not for the Forces as a whole, it is paramount to assess the effects of advertising for one Service on the propensity to apply for the other Services.

In order to react to the recruiting problems, the Armed Forces of many countries implement a number of measures simultaneously. It is of great importance also to monitor the effects of these actions. Their overall effect needs to be assessed but the individual contribution of a specific action also needs to be studied along with possible interaction effects.

All the measures to cope with the recruiting problem that were discussed in this paper intentionally avoided the easiest yet worst solution one can think of, namely lowering the standards. Lowering entry standards indubitably leads to lower personnel quality. In addition to all problems resulting from lower quality personnel within the Military, one has to be aware that the mere fact of having low quality personnel inevitably is perceived by the general public. And that perception refrains more qualified people to apply as they are not attracted to become a part of a 'low quality' organization.

A last remark in this discussion is meant to put things into perspective. This paper dealt with recruiting problems. To our opinion, this is a serious problem but not the most challenging one. Retaining the well-qualified personnel could very well prove to be the hardest mission for the Forces in the next couple of years. Once the personnel will truly understand that there are many attractive options outside the Forces, they will make choices and the Forces might better have convincing arguments why people should stay in the military or they will face a massive brain drain that will need decades to recover from.

Conclusions

The Armed Forces need good men and women to fulfill their mission. The booming economy in many Western countries causes a shortage of resources on the labor market and makes it increasingly difficult for the Forces to recruit the numbers of quality people they need.

This situation constitutes a challenge for the political and military authorities. If they consequently want effective armed forces, they will need to allocate extensive resources promptly to deal with the emerging recruiting problem.

There are no miracle solutions to the problem. Only a coordinated action including most of the enumerated means will be able to limit the damage to the Forces.

MILITARY UNIT EFFECTIVENESS AND READINESS: A THEORETICAL FRAMEWORK AND A PRACTICAL APPLICATION

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Abstract

In this paper, the traditional notion of military effectiveness is reconsidered in the light of a proposed multidimensional model of unit effectiveness, representative of the actual military context define by the changing nature of CF operations and expectations. The presentation of the model will be preceded by an overview of the major contextual factors that initiated the need to revisit the concept of combat effectiveness. One dimension of the effectiveness model is the human readiness dimension. This dimension will be described in relation to an instrument called UCP (Unit Climate Profile) use to measure the climate profile of CF troops in operations. Both academic and applied military sources have been used as resources for the development of the theoretical formulation and application of the military unit effectiveness model in the Canadian Forces (CF).

Introduction

The changing nature of operations

The years 1990's have been resulted in vast changes with regard to the nature of military operations in the CF. A paradigm shift has evolved resulting in an increasing demand for Canadian Forces assistance and intervention on behalf of countries that are involved in situations of internal conflict or natural disaster. To illustrate the increased demand for assistance of the CF soldier one only has to compare the requests received from 1948 to 1989 and those since 1989. From 1948 to 1989, the CF was involved in 25 international operations. Since 1989, the Canadian Forces have been deployed 65 times. This does not include the responses of CF members to the different crises at home (ie.1998 Ice Storm, 1999 Manitoba flood). At any given time during 1999, more than 4,500 men and women were deployed on 23 missions

It is clear that there has been a dramatic increase, from other nations and/or organizations, such as the UN or NATO, requesting the assistance of Canadian troops in what may be termed as non-combat operations (for example, peacekeeping and security operations). These changes have directly impacted the way the CF member performs a task. These operations are complex and the level of unpredictability that face CF members while in the field may be extremely high. Additionally, the rules of engagement that define the nature of the conduct to undertake while on the ground also contribute to increase the complexity of the soldier's task. These non combat operations have resulted in the CF soldier having to acquire an additional set of abilities and skills in order to performs his (her) tasking. This new abilities and skills go beyond the traditional skills needed to be effective in combat. For example, Eyre (1993) argues that, while some tasks of the Canadian Army may be rooted in conventional training, recent events in Somalia, Sarajevo and the Cyprus War of 1974, recent events point to the necessity for today's soldiers to go beyond traditional combat skills. Reports have identified Canadian soldiers are being required to "negotiate," "mediate," "conciliate," and "arbitrate" while on missions. Notably, these observations and the need for ability and skill adjustment is dictated by new alliances, this network of players encompasses both military allies and civilian authorities that act together to coordinate peace enforcement and humanitarian aid.

It appears that the changing nature of military operations described above has necessitated a change in the way effectiveness is defined and subsequently measured. Effectiveness can no longer be assessed using the simplistic notion of whether the battle or war has been won; other considerations must be taken into account. The redefinition process must also take into consideration the changing nature of expectations, emanating from public opinion and government.

The changing nature of expectations

Within the last two decades Western society has changed, with a resultant change in the societal expectations of the military. The CF now exists in a very different socio-political context to that which existed during the reign of the super powers. The CF is answerable to the federal government. As such, the military is under public scrutiny and is required to ensure transparency in regard to management, finance and social policy. Moral and ethical issues involving military professionals have also attracted a great deal of attention from the media. Given this new social contexts in which the CF functions, effectiveness measures must incorporate more dimensions than in the past. An example is seen in the recent implementation of CF policy recognizing issues related to variables of HDO (Human Dimension of Operations) and QOL (Quality of Life) as important modulators that could affect human dimension of effectiveness in any type of operations.

Thus, the changing nature of military operations and expectations resulted in a need to define operational effectiveness in a contemporary way. A new model of effectiveness must be develop to meet the expectations of the people and government. The model must also address the needs of the primary users, the military leaders on the ground whose responsibility is to ensure the success of the operation.

The notion of operational effectiveness

Theoretical confusion exist in the literature with regard to the definition and terminology of the notion of effectiveness. With the aim of introducing a new model of operational effectiveness a sound theoretical foundation must be establish. Therefore, an attempt is made in this section of the paper to briefly clarify the definition and conceptualization of the notion of effectiveness.

Toward an integrated model of operational effectiveness

In the military, effectiveness is frequently discussed as combat effectiveness. The implication is that effectiveness can only be measured when a unit is in combat, which in recent years has become quite uncommon. In the context of the Canadian military, combat operations does not describe the type of engagement that the Canadian Forces are presently facing. The CF member is involved more and more in the unpredictable area of non-combat operations (for example, peacekeeping and security operations). With this in mind, the traditional definition of effectiveness must be revisited.

The diversity of disciplines and the uniqueness of the languages used to describe concepts of effectiveness often leads confusion, incomprehension and limitations in terms of measurement A major breakthrough in the conceptualization of organizational effectiveness was made by Morin, Savoie et Beaudin (1994). Their research resulted in a more representational definition of effectiveness in an organization. This model integrates a diversity of disciplines such as economics, accounting, management and behavioral sciences.. These disciplines have a common goal that is to find indicators of organizational effectiveness.

The review of the literature made by Morin et al (1994) distinguishes four main dimensions of organizational effectiveness: (a) the worth of human resources (psychosocial dimension); (b) economic efficiency (economic dimension); (c) the organization's legitimacy with outside groups (ecological dimension); and (d) the organization's durability (systemic dimension). After a continuous validation of the model with practitioners, the model was slightly modified to better represent the actual reality of the organizational effectiveness (Savoie and Morin, in press). This vision of the organization is multidimensional or, to be more precise, quadripartite. This does not mean that each individual or group assesses the organization's effectiveness through reference to each of the four dimensions – far from it – it means that their evaluations can be situated within one or more of these dimensions. The four dimensions are briefly described and represent in figure 1.

a) The worth of human resources

- Worth of human resources refers to an organization's work force and deals with measures pertaining to an employee's morale, performance, development and motivation. In regard to this dimension, the organization needs to find answers to the following questions: Are the employees committed to their organization? Are the personnel hard-working? Are they competent? Is the morale good?

b) Economic Efficiency

- Economic efficiency relates specifically to the notion of organizational productivity.

The criteria of internal economy (the degree to which an organization reduces the quantity of the resources used while ensuring that the system continues to function smoothly) and productivity (the quantity of goods produced divided by the resources used to produce them) are clearly components of this dimension.

c) Corporate Responsibility

- This dimension refers to assessments made by external constituents of the organization, i.e., regulatory agencies and the community. Any organization has a corporate responsibility. For example it may be judged on its ability to follow regulations or/and on its involvement within the community at large.

d) Durability of the Organization

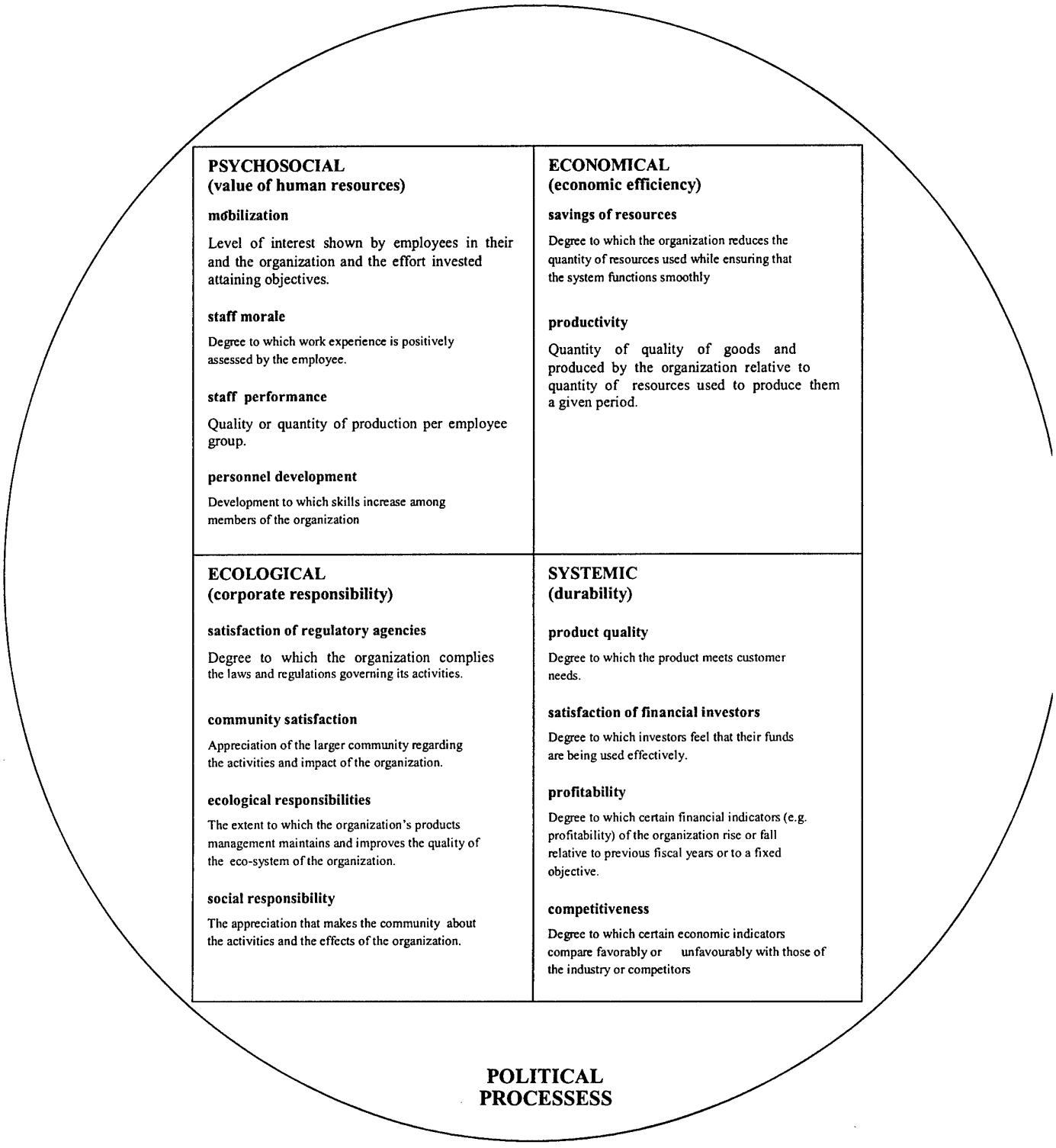
- This is the systemic dimension of organizational effectiveness, which addresses the question of the survival of the organization. Durability reflects the degree to which the stability and the growth of an organization have a chance to survive the test of time. This dimension

deals with the capacity of the organization to adapt to always changing-environment environment (Bakke, 1950, Thompson, 1967; Emery & Trist, 1960; Katz & Kahn, 1978).

e) The Political Processes: Establishing Organizational Criteria

- The political process is related to the decisions made by leaders and is directing the focus on specific dimension of the model instead of others. This process is also function of contingencies as financial constrain and underlying objectives of the organization.

Figure 1



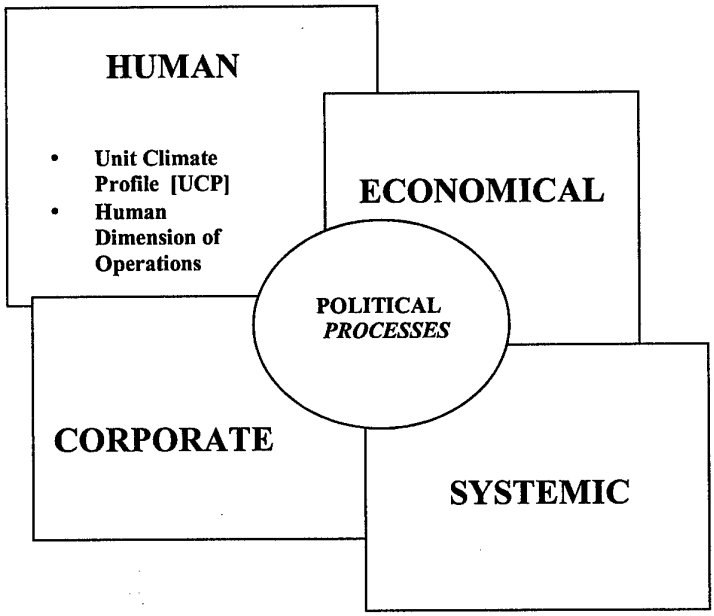
The human readiness dimension of effectiveness

In figure 2, the 4 dimensions of the model are presented and applied to the military context. This adaptation of the model to the CF implied three transformations: first, the dimension called the worth of human resources is analyzed in term of the human readiness dimension. Second, the political process dimension has moved to become more central and third, the four dimensions are interrelated.

First, readiness is an important construct for the military, unfortunately, this concept offered considerable problems in his definition and is presented as both an outcome (e.g., Castro & Adler, 1999; Oliver, Harman, Hoover, Hayes and Pandhi as cited in Mangelsdorff, 1999; Scheflen, 1996) and has a predictor (e.g., Wild, 1988). A promising avenue is to see readiness as a multilevel and multidimensional construct. In this regard, the work of Orlick (1995) in the field of sport psychology is of particular interest. He states that readiness is a multi-dimensional construct and as to be treated as psychological state (outcome) evolving from variables taken from group dynamics and from special cognitive learning attributes. For us, measures of readiness in the military is closely tied to the worth of human resources dimension requesting empirical assessment. In that regard, the CF possess two instruments to assess empirically the human readiness dimension: The Unit Climate Profile (UCP) and the Human Dimension of Operations (HDO).

Second, the application of the model to the military must also imply a change in the way the political process is represented. One reason is because commanders on the ground make use of the political process to integrate dissimilar contingency and this help to maintain priorities associated with a deployment. And third, we recognized that in the military system the dimensions of the model are interrelated. As an example, level of human readiness must certainly have an impact on the level of productivity of the economic dimension of the model.

Figure 2

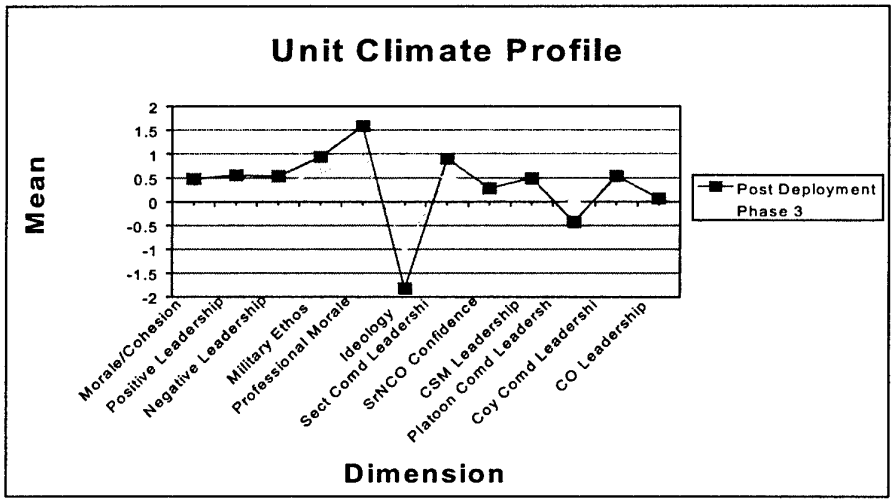


Indicators of military effectiveness: a practical example

In regard to the human readiness dimension of the model, commanders need to possess information concerning the level of effectiveness of his (her) unit either in garrison or in a deployment situation. In that sense, the measures of effectiveness must have the capacity to be applied in a flexible matter and be used at any point in time. This includes before, during and after a specific operational deployment. The measures of operational effectiveness should be designed with consideration to the uniqueness of the unit analysis under study; either the individual, the group (platoon) or the unit level.

The Unit Climate Profile (UCP) is one of the instruments used to measure the indicators of human readiness according to the model of operational effectiveness. This instrument was develop in collaboration with the Chief of Land Staff. Interests have been manifested to adapt this instrument to the Air Force and Navy members. This instrument is applicable in pre deployment, during and post deployment. In terms of the unit of analysis, the unit is the prime target. The actual version of the UCP comprise 62 items and revealed a cluster of 12 human dimensions after factorial analysis procedures. A complete description of the steps toward reliability and validity of the UCP is available (review draft, Dobreva-Martinova; 2000).

The 12 dimensions of the UCP such as morale/cohesion and confidence in the level of command, can be plotted on a graph to form a profile of the readiness component of the unit. The data is collected from a stratified random sample and analyzed by the Operational Effectiveness Section of the Directorate for Human Resources Research and Evaluation (DHRRE). The analysis is completed within a week and a profile of the units are returned and communicated to the commanding officer by the military psychologist deployed with the Canadian contingent. Additionally, the commanding officer is also briefed by the military psychologist on interventions that can be used to improve the level of readiness of his (her) unit. Overall, the UCP is a valid tool that can be to be used in conjunction with other sources of information available to commanders to assess the effectiveness of their unit.
- Below is an example of the UCP of a CF unit surveyed at two phases of a deployment cycle. The range of the values for the climate dimensions is from –2 (very negative) to +2 (very positive), with a middle point of zero (neutral, neither positive nor negative).



Conclusion

The nature of military operations is changing and as a result operators will have to adapt to this reality. In that sense, realistic and practical indicators of military effectiveness must be developed to assist commanders in their decision making. The UCP is presented as a viable tool for determining components of the human readiness dimension of the unit effectiveness model. The unit effectiveness model is a means of addressing the issues of the 21st century within the military context. One of the challenges for researchers at DHRRE will be, to continue developing and validating instruments related to the human readiness dimension, and also, to create indicators related to other dimensions of the unit effectiveness model.

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THE FACTORS OF FORMATION OF PSYCHIC DISORDERS OF COMBATANTS WITH DAMAGES OF LOCOMOTOR SYSTEM

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ABSTRACT

The analysis of modern local conflicts shows that 50-75 % casualties are injuries of the locomotor system. Surgical treatment of their patients is a different topic of discussion. At least two groups of factors evoke phychic changes in injured:

Wound disease is a state of combatant and is accompanied by varying as to its extention and depth, damage to the integrity of human structures, with local, segmentary and system disorders, with a change and disturbance of the body functioning, sharp increase of entropy, hypoxia and energy deficiency, with compensatory processes transient, unstable at first and prolongued, relatively stable later. After somatic clinical recovery the wound disease persists for a long time in the form of posttraumatic stress disorders.

Traumatic disease is a state of combatant with damages of locomotor system and is accompanied by disorders of metabolic processes.

It is possible to form a third group apart from the others - amputation syndrom and psychic changes connected with it.

From the point of view of psycho-physiological correction for the purpose of early rehabilitation and recovery it is desirable the adequate diagnosis of the leading pathogenic mechanisms of wound and traumatic diseases. They are secure inhibition, distribution of blood circulation (brain and extremities), selective transform of energy for physiological functions, selective activation of afferent and efferent flows of motor activity.

The analysis of conceptions of psychological reactions in participants of extreme situations (ES) in the last 30-40 years allowed us to establish the following principles [1-5, 7-9, 12, 14, 15, 20, 21] (Table 1).

Table 1

Chronology of medico-psychological conceptions of ES

(the analysis of literary data)

Years	Conceptions
1952-1968	(DSM I) Gross stress reaction
1968-1980	(DSM II) Transient situational disturbance
70-th	Emotional shocking syndrome
70-80-th	The stress-related emotional lability syndrome
	Traumatic disease
	Post-traumatic stress disorder in Vietnam veterans
1980	Post-traumatic stress disorder (PTSD)
1987	(DSM-III-R) – PTSD
80-90-th	Post-traumatic stress disorder in Afghanistan and Chechnia veterans
	Wound disease

As a rule combatants attend psychologist with formation of actual psychic disorders, or many years later after psychotraumas [1,2,17]. In early periods after combat actions in case of absense of actual psychic symptoms or other dangerous pathology (for example, surgical), the psychological support is provided rarely.

The problem of preventive estimate of the basic and more complex forms of the psychic activity of combatants is significantly increased, because the analysis of modern local conflicts shows that 50-75 % casualties have injuires of the locomotor system [17].

What is the basic psychic functions? The comparative character and hierarchic relationship between the types of psychic activity are shown in Table 2 [18]. The perception with it's subjective character (the sensation) is practically the base for all other forms of psyche. Thus, sensory processes are the base for other psychic phenomenons. Furthermore, the cycle of sleep-activity, the memory, emotions and motivations are also basic mechanisms having their dimensions.

The estimate of mechanisms of somatosensory and visual (invariant image recognition, brief-storage memory) perception in combatants with battle injuries of the locomotor system for study of genesis present (and future) of psychic disorders and creating of the adequate rehabilitation programs was the purpose of this investigations.

Table 2

The basic forms of psychic activity and their brief characteristics

(V.Shostack & S.Lytaev, 1999)

Character of psychic activity	The forms of psychic activity			
	Perception (vi-sual, somatosen-sory etc.)	Cycle of sleep-activity	The Memory	Emotion and motivation
Forms of appearance	The sensation	Sensation &all forms of perception, language, voluntary activity, EEG-parameters	All forms of reproduction of information	All forms of activity (mental, physical, vegetative)
The characteristic	Depends on modality of signals and of sensory system (contrast, colour, tone, etc.)	Levels of sleep & activity	Forms of memory sensory, brief-, long storage	Depends on levels of activity of systems of organism
Dimension	Depends on modality of signals and of sensory system	Depends on forms of sensations & EEG-parameters	Volum - bit, bait; periods, hours, years	Ball, sten
The base for other forms of psychic activity	For all other forms	Attention, language, mentality, consciousness	Learning, language, mentality	Behaviour, temperament

METHODS

72 young adult subjects (male: from 20 to 34 years) with battle injuries of locomotor system were examined. On the basis of the findings of treatment of wounded in Afghanistan (1978-1988) and Chechnia (1994-1996) military campaigns all the casualties of the last campaign (1999-2000) were divided in four groups.

Wounded with multiple trauma (n=7) present the most severe group. Althougth the number of multiple wounds were varied from 5 to 12 %, poor results of treatment with invalidity up to 80 % were registered from this cathegory of patients.

The second group - wounded (n=24) with soft tissue injuries (~50 %). The period of return to the standing army was till 30 days. Provided by special treatment casualties with fractures of plane and some long bones, damage of tendons could be returned to the standing army from 90 to 120 days. The cases with periphery nerves injuries (from this group, n=22) are presented below.

The other two groups - the casualties with multiple and single fractures of long bones (n=41).

The surgical treatment with external or internal osteosynthesis were performed for all patients at the period from few days to 1,5-2 months after injures depending on various reasons.

In the Military Traumatology and Orthopedics Clinic brain evoked potentials (EPs) and ultrasonic dopplerography (USDG) from vessels of the upper and lower extremities were recorded.

The recording of cognitive event-related brain potentials (ERPs) has had a rich history in the psychological investigations [6,11,13,16,19]. In our examinations ERPs were recorded with computer neuromapper "brain surveyor" in the 19th monopolar sites by system 10/20. Visual and electrical stimulation were applied. The amplitude-temporary parameters and succesive cerebral maps were estimated by changing the analyzed epoch at intervals of 10-400 (or 1000) ms, and stepwise discriminant analysis (BMDP 7M) was performed (according to criteria of F statistics, F>4,0).

Somatosensory EPs (SEPs) were recorded by electrical stimulation of periphery (damaged and normal) nerves for diagnostic purposes. The epoch of analysis - 400 ms.

Visual EPs (VEPs) with images as stimuli (ERPs) were recorded for estimate of cognitive processes - invariant evolution of signals and primary memory [10]. The epoch of analysis - 1000 ms. Nine images with incomplete set of signs, consisting of familiar objects - key, spectacles, anchor, balance, nippers, scissors, tea-kettle, electric lamp and trumpet - were presented to examinees under conditions of time deficit (exposition of 10 ms).

RESULTS AND DISCUSSION

In a gunshot wound even without damage of large vessels the development of the typical disorders of blood flow and the hypoxia of tissue take place, forming the "devil" cycle (named as the traumatic disease (TD)) [17]. The TD provokes the activation of katabolism and cyclic changes of peryphery blood flow.

The analysis of USDG data permitted us to establish that shaft fractures of long bones were accompanied with one of possible mechanisms of indirect reactions of vessels. After the fracture of traumatic ethiology the secure mechanism of blood flow reduction in the damaged extremity was provoked, and, by contrast, it increased in normal extremity. The gunshot fractures evoke mechanism of reduction of blood flow in the both lower extremities, when secure reflex of centralisation of blood flow developed.

The dynamic instability of blood flow provide important significance in the modulation of functions of somatosensory systems (motor, pain, temperature etc.). According to this early changes of bases psychic function - of the perception are provoked. These changes are not registered only from periphery nervous system, but and from central regions of nervous system - ponto-geniculo-thalamo-cortical projections.

The results of registration of SEPs and successive brain maps permitted us to establish, that complete damage of nervous fibers (plexus or tracts of spinal cord) are manifested by absence of signals (SEPs) in cortex. Uncomplete damage of this structures is characterized by "partial" response. At the same time SEPs can be absent in the projectional (parietal) cortex, however, be evoked in the associational (frontal) region of the brain. The registered parameters

from the periphery nerve of intact extremity can not be controled, because the parameters are changed by afferent flows on the nervous plexus from the damaged nerve. The threshold of activity of the damaged nerve can be reduced or increased. It depends on the character and period of the damage.

These investigations mainly were performed in wounded with posttraumatic neuropathy of periphery nerves (N=22) for diagnostic purposes. Further, the tasks for SEPs registration were extended. The results of this series of experiments suggest that not only complete anatomic damage of nerve provokes changes in somatosensory processes. Thus, the pattering of blood flow disorders during TD, and also the common state of the patients (according to wound disease, see below) can greatly influence on the somatosensory system.

The possibility that battle injuries of locomotor system might influence somatosensory transmission at the most periphery and central levels suggest that other sensory systems and forms of psychic activity demand investigation also. Accepting to the attention this task we studied mechanisms of invariant recognition of visual images and brief-storage memory by means registration ERPs in casualties.

It was noticed that in the studies of the fragment visual image perception the indication of informativity of an irritant had already begun at the stage of analized period (to 100 ms). It is proved by the changings of the amplitude-time characteristics of ERPs N70 and N150, reflecting the early and intermediate mechanisms of selected attention. The absence of recognition (more than 60 % of wounded) is characterized by decrease of amplitude of ERPs component N150 in the assotiational cortex and general reduction N350. This data we suppose from position of reduction of force inter- and intra- hemispheric interactions provided of memory functions. However, it is accompanied by increase of amplitude of more late waves ERPs. Wave N450 is the most specialized indicator of unidentified visual images perception. The latest negative waves (600-1000 ms) reflect the further processes of the image categorization, that can pass either in inertion, representing the cyclicity and similarity with early and intermediate stages of perception or actively reflect the reverberation of stimulation.

The results of ERPs registration allowed us to speak about two possible mechanisms of activation of the long storage memory. The first of them is characterized by inhibition of frontal cortex in the period of synthesis of informational flows (100-200 ms) with sequential activation of occipital and parietal cortex (200-500 ms). This processes probably provided mechanism of "unlogic" mentality. The second variant of memory activation on the early (to 100 ms) and medial (100-200 ms) periods of perception was connected with activation of the frontal region of the brain with sequential general irritation by mechanisms of "exhaustive search". The use of this paradigm was additionally motivated by the findings in the aging literature [13,16,19] and our results accord to data of others scientists [6,10,19].

Furthermore, psychic and emotional disorders were determined by wound disease (WD). WD is a state of the combatant. It is accompanied by varying as to its extention and depth damage to the integrity of human structures, with local, segmentary and systemic disorders, with a change and disturbance of the body functioning, sharp increase of entropy, hypoxia and energy deficiency, with compensatory processes transient, unstable at first and prolonged, relatively stable, later [17]. After somatic clinical recovery the WD persists for a long time as a form of PTSD.

CONCLUSION

From the position of psychophysiological correction for the purpose of early rehabilitation and recovery the adequate diagnosis of the leading pathogenic mechanisms of wound and traumatic diseases is desirable. They are secure inhibition (Pavlovian law of force), distribution of blood circulation (brain and extremities), selective transforming of energy for physiological functions, selective activation of afferent and efferent flows of motor activity. The state of psyche needs to be estimated from the position of all forms (from multiple reflex activity to any forms of consciousness). Specific and nonspecific disorders of sensory function in wounded with battle injuries of the locomotor system are presented. Nonspecific disorders likely characterize all the combatants, are the factors of PTSD and demand psychological support.

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BUNDESWEHR ABROAD - CONSENQUENCES FOR SOLDIER'S MOTIVATION

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ABSTRACT

The German Armed Forces Institute for Social Research had been charged by the Federal Ministry of Defence to research on the situation of German soldiers within the now enlarged task spectre. A longitudinal survey of the KFOR mission is intended to gather information on the soldier's situation before, during and after an assignment.

In order to ameliorate the measures of leadership and care to be taken, the soldiers' situation during an assignment abroad shall be recorded, and ways shall be explored to keep the theatre stress as low as possible, thus guaranteeing an optimum mission accomplishment.

Following these intentions, the mission commitment and motivation of the soldier is in the focus of our interest. With this study, we try to evaluate assignment motivation and its determinants.

The factors to be mainly surveyed will refer to both the service field and the private sphere. With different importance levels, they determine the soldier's feelings and attitudes on the theatre, i.e. his level of satisfaction and the motivation to accomplish his tasks.

The 'Rational Choice Approach' will constitute the theoretical base to explain changes of the assignment motivation as an outflow of a cost-benefit weighing. Here we start out from the supposition that the soldier's motivation will increase - or at least stay stable - as long as the benefits will be superior than the costs of the assignment.

The project aims at a panel survey of a KFOR contingent by means of specifically developed and already pre-tested standardised instruments.

Summary

The presented research project aims at surveying the assignment motivation of the German soldiers in the KFOR contingent as well as at defining the factors that determine assignment motivation. Here we could pick up a tradition of American military-related sociology. For more than 50 years, scientists there are dealing with the question why soldiers in wartime are ready to fight. In German military-related sociology, however, this problem was dealt with only sporadically, or seen just from purely academic aspects. This is not surprising at all, since military missions became not reality for the Bundeswehr during the era of the East-West conflict. Meanwhile, the German armed forces are engaged in peacekeeping missions abroad with a permanent volume counting about 8,000 soldiers. Thus, our formulation of the question gains in importance not only from the sociologic perspective, but also from the military-practical one.

We define assignment motivation as an attitude with the following components: identification with role and tasks, pride of the own active contribution, and the willingness to behave oneself in the sense and spirit of the organization. Based on the findings of empiric surveys from other nations, we generate various determining factors of assignment motivation. We can subdivide these explaining variables into two sectors: individual concerns and factors of duty interest. To ascertain their relative influence on the assignment motivation is the aim of our survey.

In order to deal with this question, a standardized questionnaire was used in a pre-test in August 2000 covering more than 2,100 soldiers of the German KFOR contingent (authorized strength: 5,400 soldiers). Seen the shortness of time, the results presented here are based on the valuation of 684 questionnaires.

The valuation up to now shows the following picture: The most important influence on the assignment motivation is given by the discernment of the mission's political support. The principal attitude of the soldier towards the Bundeswehr – his commitment – also coins his motivation during the assignment. We explain these results – deviating from American experience – by the particular politicization of the soldiers in the Bundeswehr which is the aim of the 'Innere Führung' philosophy on the one hand. On the other hand, this politicization certainly is backed by the discussions throughout the German population on the sense of the Bundeswehr's Kosovo mission. The relatively low risk level of this mission also contributes to these results.

Introduction

In this lecture we intend to present our research project striving for a survey of the soldiers' situation during assignments abroad. This is the first German study with such an orientation. This can be understood only before the particular historical background of our country: Missions abroad became reality for the Bundeswehr only in the 1990s. Under the roof of multinational operations, about 70,000 soldiers meanwhile had been assigned abroad in peacekeeping or peace enforcing missions. Particularly the participation in SFOR and KFOR – the current strength running up to about 8,000 soldiers – is belonging now to the 'standard missions' of the German armed forces. Assignments abroad thus nowadays are coining the professional and personal situation of Bundeswehr servicemen and servicewomen. But only few is known about how the soldiers are perceiving their assignment and which are their personal convictions to fulfill their duty tasks there. Also, the effects on the global attitudes towards being a soldier still are open to question. Moreover, the image of assignments abroad prevailing in Bundeswehr and throughout the civilian population will certainly have its medium-term and long-term effects on the recruitment in the armed forces.

Seen these reflections, the highest military command of the Bundeswehr charged our institute – SOWI – to lead a survey on the soldiers' assignment situation in the Kosovo.

To harmonize this need of information with our scientific interest of gaining knowledge – that is our concern. So this project is aimed at developing and testing a survey model for assignment motivation.

We lean upon the findings of military-related sociological research, and particularly on the surveys by scientists from the U.S. Army Medical Research Unit-Europe who are

experienced in interviewing troops during assignments abroad. We want to thank them here again for their helpful support.

Before presenting our research approach, we first want to clarify two focal questions:

1) What is assignment motivation?
2) Why is assignment motivation important?

1) What is assignment motivation?

In the following, the term 'assignment motivation' is to be understood as an attitude of the individual towards its tasks, its organization and activities which is highly coining its behavior. In our apprehension, assignment motivation is not an unidimensional attitude but encompasses the following components:
Assignment motivation means

- to identify positively with one's role and the consigned tasks;
- to show one's willingness to put the own energy at the disposal of the main task and to act in the spirit of the organization;
- to develop a pride of the own activities.

This definition makes clear that our apprehension of motivation is partly corresponding with other constructs that are customary in military-related social research, such as commitment, combat morale and duty content. So we want to explain in brief which are the differences we see between these notions and the term 'assignment motivation' and why we do prefer the latter.

- Commitment evaluates the fundamental attitude towards an organization. We are concentrating our interest, however, on the attitude towards the assignment. The assignment will end after six month, the soldier nevertheless keeps on belonging to the military organization. From our point of view, commitment is a concept that is broader and more fundamental than assignment motivation, even if both notions are interacting.
- For opposed reasons we refuse duty content as an applicable construct. This notion – in civilian contexts certainly fruitful – is not appropriate to the assignment reality since here we find a more significant "contrast between requirements of the organization and individual interests" (Rothmann/Ziegler 1977; 171). In military contexts, content is a rather relative notion.
- Combat morale, on the other hand, does not reflect the reality of current assignment, at least in the German meaning of this term.

For these reasons, we do not use the above-mentioned terms – but why do we use 'assignment motivation'?

2) Why 'assignment motivation'?

Assignment motivation is relevant for both the individual as well as the organization. For the individual applies that a high motivation is accompanied by a fundamentally positive attitude towards the own activities. The longing for such a relation nearly constitutes a basic need of the human being.
From the perspective of the organization, this leads to the necessity to take measures to increase the motivation of its members. In our context, this not only aims at a soldiers' pleasant feeling but first of all at a performance enhancing of the troops. But how to reach it?

We apprehend the following factors as decisive for the soldier's assignment motivation:

- Political support
- Commitment to the organization
- Commitment to the tasks
- Emotional strain caused by separation from the family
- Voluntary enlistment
- Trust in higher superiors

Studies that have been led in different temporary and military-cultural contexts did attribute a different significance to the factors. Whilst the older American military-related sociology did emphasize the importance of comradeship and the primary group, recent studies are pointing at the relevance of family and superiors. The only German empiric research, on the other hand, takes the evaluation of societal and political support for the key variable influencing the motivation of the soldier. With our study, we now want to examine how significant the different explanations are nowadays.

Method

Our study is based on a mix from three methods which are used with different weight for the hypothesis examination.

Before formulating the hypotheses, those spheres influencing assignment motivation had to be identified. For this aim, we led preparing profound interviews, analyzed and interpreted empiric studies from other nations as well as written reports by military leaders on their experience in missions abroad, and consulted the relevant regulations and directives.

A further step currently consists in examining our hypotheses and our main survey instrument – a quantitative questionnaire - in a pre-test.

From 18 July to 03 August, our project group stayed with the German KFOR troops in PRIZREN and surroundings for the pre-test and the participating observation. This participating observation covered all the German troop camps, participation in the essential tasks of the different units and subunits, and furthermore visits of German headquarters, KFOR headquarters at PRISTINA, the U.S. camp Bonsteel and the UK general hospital at PRISTINA.

We went two different ways to distribute the questionnaires among the soldiers. Some units and subunits were asked to assemble those soldiers willing to participate in the survey at a definite time and place. There, the soldiers filled in the questionnaires under the direction of a sociologist. The second way consisted in instructing the battalion commanders and unit leaders in the survey. They were asked for organizational support by ensuring that each and every soldier in their area of responsibility would receive a questionnaire and arranging for the – guaranteed anonymous – sending back of the filled-in questionnaires to the German Armed Forces Institute for Social Research.

It came out that the first procedure entailed high effort and low benefit (read returning questionnaires) whilst the second one turned out to be practicable and efficient. The return came up to 1,650 questionnaires what means a rate of 30 per cent of the German KFOR contingent. Seen the criterion 'rank category', the sample evaluated until now seems to be representative with a certain under-representation of rank and file.

Our real study will start in next October as a panel survey. Apart from an interview before the assignment – still in the home country – it is intended to lead two surveys during the assignment (in the beginning and towards the end) as well as an interview with returned soldiers. Thus it will be possible to register changes over the duration.

But now we want to present the results of our pre-test.

Results

1. We measured 'assignment motivation' by means of the following scale:

   a) I am proud of being a soldier within the German KFOR contingent.
   b) I do identify with my field of duties.
   c) I am essentially contributing to the mission accomplishment of my unit.
   d) I like to be a soldier of the German KFOR contingent.
   e) I do support the mission of the German KFOR contingent.
   f) I could recommend a comrade to enlist in the Kosovo mission.
   g) If possible, I would immediately return home (repatriation).
   h) I would enlist as a volunteer in a prospective assignment.

It does not matter how we handle our motivation scale, whether we construct a Likert scale from these items, or calculate with the factor values of the rotated analysis of main components,

or enforce a unifactoral solution, or use the item 'your motivation' that is common in American surveys – our essential explaining factors constituting the base of our interpretation stay stable in the multivariate regression analysis.

2. For most of the tested explaining factors there is a pronounced correlation with assignment motivation. From our point of view, this results from the fact that most of the questions ask for 'weak' evaluations. There is not asked for 'hard' events or behaviors which are really examinable.

   For these reasons we go without a detailed presentation of bivariate relations but show immediately the multivariate regression analysis:

Table: Gradual regression

Dependent variable: Assignment motivation (unifactoral solution from motivation scale)

Influencing factor	Beta and significance
Political support	.34**
Commitment to the organization	.33**
Commitments to the tasks	.27**
Emotional strain caused by separation from the family	-.17**
Voluntary enlistment	.16**
Trust in higher superiors	.11**
Explained variance: corrected R^2	.59

Variables taken into consideration:
Infrastructure (factors: accommodation, leisure, communication); benefits (factors: economic and non-economic ones); success of the mission; support (by parents and acquaintances); society (factors: interest, support); care (factors: chaplaincy, medical service, psychological service, family care center); cohesion (factors: comradeship, superiors); training level of the unit; equipment; duty (factors: attractiveness, leaves of the camp, strain aspect, security of planning); age; service/department; rank category; gender; education; sexuality; emotional strain of the family by separation; physical reserves; mental weariness; trust in first-line superiors; number of assignments abroad

These results were surprising even for us, so we went to examine them by several experiments in data processing.

3. When going to the analysis without the factor 'political support', the factor 'trust in the success of the mission' will gain the highest explaining force. This result is backing our original result since the factor 'trust in the success' also contains elements that reflect political convictions.

4. When suppressing furthermore the factor 'commitment', those variables become dominant which are known from other surveys such as Segal/Rohall et al.: Meeting the Missions of the 1990s With a Downsized Force: Human Resource Management Lessons From the Deployment of Patriot Missile Units to Korea). These are on the one hand factors referring to duty such as trust in the common performance of the unit, trust in higher superiors, and on the other hand family aspects such as impairment of the family situation by duty.

Discussion

The evaluation of the political support of a mission obviously is of focal importance for the motivation of German soldiers who are engaged in this mission and identify with it. Thus, our result corresponds with a survey from 1985 where Klein/Lippert pointed at the supreme

importance of political legitimacy with their study "Morale and its Components in the German Bundeswehr".

The concept of 'Innere Führung' oriented at the citizen in uniform obviously comes to effect here. This concept destines the image of the politically informed and major citizen, capable of his own opinion of societal and political relations. During his assignment, the German soldier thinks in political dimensions. As it was destined by the leadership concept, he had been 'politicized' and gathers a great deal of his motivation from these convictions.

For the military organization this is a problem inasmuch as this organization is only conditionally in a position to influence the development of political opinions of its soldiers. Apart from the political indoctrination in the armed forces, the opinions among the comrades, among parents and acquaintances will certainly have their effects on the individual soldier, as well as public and published opinions.

It has to be underlined moreover that the Bundeswehr mission at the Kosovo was not at all unanimously supported by the German population. This is not surprising in view of the fact that the participation in NATO air strikes against Yugoslavia was the first combat mission of the Bundeswehr – and above all under the reign of a Red-Green government. Only a small majority of Germans supported the air strikes against Yugoslavia. In the Eastern part, the territory of former GDR, the majority of people even refused this NATO course of action. The KFOR mission also meets less support in the New Länder than it does in the original ones.

We only can presume here to which extent the dominance of political attitudes and opinions is due to the relative calm of the KFOR mission. Nevertheless it seems to be plausible that the higher the risk level would increase the more duty aspects would gain in influence on the soldiers' motivation.

We take the liberty to suggest here that future surveys should pay more attention to the soldiers' political convictions, thus enabling comparisons between the armed forces of different countries. The explanation approach presented here is probably not specific only for the German armed forces.

The importance of the variable 'commitment' measuring a long-term attitude, however, seems to be immediately plausible. Those with narrow ties to the Bundeswehr will not basically change their attitudes under assignment conditions. Thus, the Bundeswehr will have to take care that proven soldiers will be deployed to such missions.

There are still other influences. Seen the six months of separation from the family it is not surprising that an abortive family-army arrangement has negative influence on the soldier's motivation.

A German specific also is hidden beneath the category command/volunteer. Only temporary-career and regular soldiers currently are deployed by order. Draftees and reservists principally volunteer, but temporary-career and regular soldiers also have the possibility to volunteer. We ascertained that the volunteers to this mission are better motivated than the commanded ones. A result that does not surprise.

The trust in higher superiors is the sixth explaining factor, reflecting both the trust in the personalities concerned as well as in the military organization as a whole.

Nevertheless, it has to be underlined that the latter explaining factors in their weight stay obviously behind the evaluation of political support and individual commitment.

Our results will gain importance when comparative values will be available. Particularly international comparisons, comparisons with other KFOR contingents or comparisons with the German SFOR contingent in Bosnia should be striven for. We intend to do so, at least on the national scale.

These reflections close my lecture. I thank you for your attention. If there are any remarks or questions, do not hesitate. I am ready for discussion and answers.

COMPARING THE COGNITIVE DECISION-MAKING STRATEGIES OF US AND UK NAVAL SONAR OPERATORS

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ABSTRACT

Sonar operators in the US and UK navies chase the same kinds of target and have the same kinds of sonar detection task. However, they use slightly different systems, sometimes with different degrees of success. This joint study, funded by the US Office of Naval Research, is using a Cognitive Task Analysis of decision strategies to help identify what are the performance differences between US navy and UK navy novices and experts.

Using Applied Cognitive Task Analysis (ACTA) as a common tool, researchers in the US & UK are conducting interviews, observations and measurements of individual trainees and experts and of experts operating in teams. The study includes several other levels of analysis, including organizational issues (from tactics to career patterns), technical issues (e.g. levels of automation and interface design), physiological measures (heart rate) and performance measures (process and outcome).

The methods used, progress, and results to date will be presented and discussed.

Introduction/Background

Technological advances have increased the capacity for collecting and fusing raw data into complex displays. The interaction between perceptual and cognitive processes plays a critical role in operator performance (Hanisch, Kramer & Hulin, 1991). There is evidence that suggests that pre-attentive processes and attention control guides, and may enhance, visual search strategies (Treisman, Vieira & Hayes; Bellenkes, Wickens & Kramer, 1997). For example, studies have shown the effects of perceptually salient features, i.e. features that "pop out" of a display. (Treisman & Gormican, 1988; Treisman, Vieira & Hayes, 1992; Wang & Cavanagh, 1994) However, performance is the result of the integration of bottom-up and top-down processes. We predict that the level of performance reflects both the user's mental model (based on knowledge, training and experience) and the perceptual saliency of the features presented in the display. Experience plays a pivotal role in the development of the user's mental model and in the ways in which they use perceptual cues more effectively. In order to achieve an understanding of task performance, one must evaluate both the cognitive and perceptual processing strategies employed by the user (Treisman et al., 1992; Hanisch, Kramer & Hulin, 1991).

Addressing Training and Performance Differences

Sonar operators in the US and UK navies share a similar task. Namely, their task is to chase the same kinds of target and have the same kinds of sonar detection task. However, they use slightly different systems and different ways of working – and sometimes achieve different degrees of success. This joint study, funded by the US Office of Naval Research, is using a Cognitive Task Analysis of decision strategies to help identify what are the performance differences between US navy and UK navy operators – experts and novices.

The differences in performance could be due to any of a wide range of factors - the sonar equipment used, the tactics, the way that tasks and teams are organized or the way that the individual operators perform their task. We are using a range of techniques to identify the factors that determine how complex detection and classification decisions are made in demanding military environments – moreover, we aim to identify the factors that differentiate best practice between different navies. The aim of the study is to identify best practice and to make recommendations for the development of training methodologies and display designs that will enhance non-expert performance and training time. The aim of the presentation is to outline the questions we are trying to answer; to identify the methods that we have selected to do this and to report on our progress to date. This study is in its second year and we have plenty of work still to do; and so present results are somewhat sketchy. A critical focus of this study is the examination of cognitive structures used by the operators in each nation. We are using a number of analytical tools and some questions remain as to the best methods to use to isolate some of the factors that affect performance – but conducting a live cognitive task analysis is a key part of that process.

Opportunities are rare for conducting a detailed cognitive task analysis of submarine operator performance. Most endeavours in this area are driven by the design of new systems or by training needs analysis. This may be the first time that an international comparison of expert performance has been conducted with a view to capturing best practice and proposing user-centred solutions in this way.

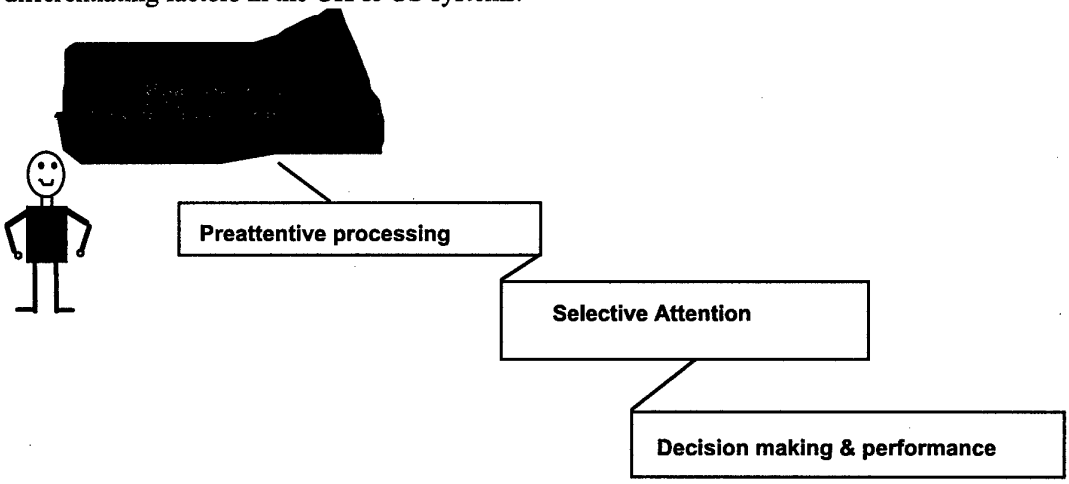
Addressing International Navy Requirements

As a nation, we have high expectations for our Armed Services. We expect our forces to be the best and brightest; to be motivated, well cared for and well trained and, above all, to be effective in combat. But achieving these world-class expectations requires superb organizations, processes, knowledge, and technology not to mention a supply of quality people. Specifically, the **Navy training goal is to achieve expertise in less time**.

The dawn of the Information Age has introduced a wave of change to modern warfare and the way the Navy operates. The accessibility and speed of information, the proliferation of low-cost, highly capable technology, and an increasingly competitive global economy has forced a fundamental shift to a more "network-centric" approach to warfare. Navy training is responding by re-engineering training to a "student-centric" approach to learning that provides more distributed, adaptable, accessible, and deployable training.

Reduced manning and shifts in training

Changes in force structure will mean fewer people to do more complex jobs, combined with the requirement for swift, short-notice response. Emphasis on affordability and readiness is a key to the Navy's training continuum. **Given these goals, we contend that one of the principal benefits of this study will be the development of recommendations that will accelerate the transition of the novice to expert performance levels.** Because there are many distinct differences between the two services that can affect the operator performance, experimental approaches that are sensitive to the similarities and difference have to be developed. Particular issues for our study include recognising the important aspects of operator decision making, fitting individual operator inputs into the team context and highlighting the differentiating factors in the UK & US systems.



Capturing expertise is always a challenge requiring an experimenter to capture the ways in which a domain specific expert uses their knowledge to extract meaningful information from an embedded signal such as a sonar lofargram. However, scientists have provided evidence that cognitive expertise guides pre- attentive processes and demonstrated perceptual processes play a pivotal role in the development of an expert's mental model. For example, it has been shown that expert players perform better because they have mastered the ability to recognize patterns of events (i.e. features) on a chessboard. During the first few seconds of play, chess masters attend specifically to those features that represent new positions (Newell & Simon, 1972). This finding suggests that expert chess masters use their knowledge and recognition of features as cues to guide their visual decision making (deGroot, 1965). Thus, the expert's memory is an array of perceptual sets that represent information that has been indexed/categorized as a unit according to the problem-solving situation with which they are confronted.

Although the study of expertise remains an important topic for the development of enhanced training systems, the need to address cultural and technology differences in training is more often an overlooked issue. However, the development of integrated multi-national teams requires a greater understanding of cultural and technological. This is especially the case when nations are looking toward developing an integrated command and control environment that will support network-centric warfare. Specifically, there is a critical need to develop a common language during the training period that will support the exchange of inter-personal communications, as well as technological communication. That is, as nations move toward international operations there is a critical need to focus on the role of training for the

international arena that will secure both expert levels of performance and operational superiority.

We believe that this study is an important first step toward that goal. We contend that a thorough understanding of training techniques, technology and cultural differences is required in order to integrate the skills and knowledge of experts on an individual and team level. A multi-level approach to training will provide a cost-effective means of training available on-demand and just-in-time to ashore and deployed personnel that will support both national and international force operations.

Performance Analysis

Naturalistic Decision Making and Cognitive Task Analysis (CTA)

One of the principal methods of capturing knowledge and information processing strategies used by experts in task performance is cognitive task analyses (CTA). Capturing expertise is an essential step in the design of decision support systems such as command and control display designs. In order to design a usable display system, one must first understand how expert operators approach a task. Specifically, it is important to understand how the operator seeks information presented on a visual display. Cognitive task analysis provides a means of capturing the cognitive component of expertise that is a critical component for designing a usable system or successful training and operations.

Cognitive task analysis includes knowledge elicitation and representation and provides a valuable tool for examining performance with tasks that require cognitive expertise. One important benefit of using CTA is that it affords the opportunity to assess the expert's changing perspective during task performance. This process provides a window to view the expert's use of information in a dynamic setting. For example, the expert operator viewing the lofargram changes his strategy in relation to the dynamic nature of the representations on the display screen.

It has been my privilege to employ a technique for understanding cognitive processing that provides a means of extrapolating different approaches used by expert during task performance. Namely, "Naturalistic decision making" (**NDM**) is used to describe the way people use their experience to make decisions in field settings (Klein, 1998). NDM has been applied to the processes and strategies employed among firefighters, emergency room staff, pilots and military commanders. In contrast to traditional decision paradigms, which focus on outcome, NDM focuses on the way that information influences the onset of the decision event. Critical to this approach is the role of Recognition-Primed Decision-making (RPD) model of NDM, is the fact that expert decision-making is a pattern-recognition process. According to the recognition-primed decision (RPD) model, rapid decisions are made by recognizing a pattern of events and either reacting without considering alternative actions or by taking the time to consider alternative actions (i. e. less effective in time pressured events). In the latter case, the decision-maker considers other courses of action, while he seeks more information to clarify or confirm his interpretation of the situation.

Cognitive task analysis includes knowledge elicitation and representation and provides a valuable tool for examining performance with tasks that require cognitive expertise. One important benefit of using CTA is that it affords the opportunity to assess the expert's changing perspective during task performance. This process provides a window to view the expert's use of information in a dynamic setting. The study includes several levels of analysis, including organisational issues (from tactics to career patterns), technical issues (e.g. levels of automation and interface design), and measures of individual performance (process and outcome) – including some physiological measures (heart rate). Applied Cognitive Task Analysis (ACTA){1} is being used as a common tool in both the US & UK studies, but we are also conducting interviews, observations and measurements of individual trainees and individual experts and of experts operating in teams. Our approach to trying to answer these questions, includes the following: addressing a common set of problems (i.e. target classification & TMA location); using the same CTA approach (ACTA) with a Simulation Interview based upon a

common scenario; complementing this with a graphical approach; experimentation using common target stimuli.

Observational Analysis

The US and UK navies have been generous in making Subject Matter Experts, training systems and other facilities available to us. Our study includes observation of how individual novices and experts tackle sonar and TMA tasks. As well as draw upon verbal reports, we can observe and record the steps that they make during target detection and classification to see the differences in process and performance that can arise and to see how they relate to effective performance. We can also collect performance data. As well as observing individual operators ashore, the study will include observation of expert sonar operators in action in command team trainers and at sea.

Decision Analysis Using ACTA, interviews are being conducted with individual trainees and experts to identify the cognitive skills and the cues and strategies that are used in sonar and TMA tasks. This method is flexible and inclusive and is well suited to accommodate the kinds of contextual factors that are important to these tasks and the differences that are a feature of this comparative study. It focuses on the decision-making processes and on the cognitive structures that individuals use. One complementary method being considered is Job Process Charts (JPCs). This provides a simple way of identifying the separate contributions of man and machine to the task processes (Tainsh 1982) {4}. As the US and UK use different systems and may have different degrees of dependency upon man and machine systems or upon individual and team processes to achieve similar tasks, this should be a useful way of highlighting important differences. In line with ACTA procedures, Task Diagrams and data for a Knowledge Audit are being elicited from novice and expert operators. Their normal use is to identify the cognitive structures that are used in a job. With submarine operators, standard operating procedures (SOPs) provide a detailed formal definition of the minimum set of steps and functions that should be executed. SOPs are normally available to all operators during the task and they identify much of what operators *should* do. Part of our task will be to identify what operators actually do. Operators may do less than is recommended; they may execute tasks in a different sequence, and they may use additional cues and responses. They may follow SOPs exactly, but expert operators may weigh and judge items of information differently. As our study includes an examination of how individual novices and experts tackle the sonar tasks, it will highlight the acquisition of cognitive strategies and identify which cues and strategies effective operators use. The scenario for a Simulation Interview is being developed. This will be defined in terms that are equally applicable to tasks that operators from US and UK submarines might execute. The scenario will be used to provide a common context for UK & US CTAs - so that the data from task diagrams, knowledge audits and cognitive demands tables are comparable. The format for the CDT will be amended, as recommended, in order to meet the specific requirements of this study. The changes are to serve two main aims: better to reflect the specific content of this study; and to provide a common format for data collection and reporting that will facilitate comparisons between the results of the parallel studies

Experimental Analysis The experimental analysis will include several components. We want to measure performance in a number of ways and to link these measures with background factors. For example, we will correlate training scores with individual factors such as age and experience. We hope also to link our CTAs to aspects of individual process and outcome in order to generate hypotheses for subsequent testing. We are mindful of the pitfalls of trying to account for differences in individual performance when so many variables are uncontrolled. Therefore we hope to generate a set of standardised stimuli – probably representative submarine sonar signals in different degrees of noise – and analyse the perceptual and cognitive strategies used by US and UK experts and novices in the same task (e.g. target detection).

We are also examining physiological processes during task performance. Masakowski has been measuring the heart rate of trainees during different tasks as a means of identifying the influence of stress on performance. Together with the other sources of qualitative data, this would be the main source of information for recommending alternative, more user-centered, screen displays. We know that some of the screen displays are counter-intuitive – for example, some relative compass bearings are displayed on a linear, rectangular display rather then on a

traditional 360° compass rose. In other cases, there is the capacity for operators to display several windows simultaneously, but with limitations on the capacity for them to select and increase the size of windows of interest. Different systems have different degrees of automated aiding and we are in a position to see what effect this has on the cognitive strategies that are used.

The way that the command team utilizes individual operators' inputs may be an additional factor. McDevitt studied a number of sonar teams and found a significant relationship between the use of cognitive procedural rules and performance. As teams became more expert, they used more rules. He found that a test of declarative knowledge (i.e. *knowing* the rules) did not predict team performance. However, after extensive practice (over a 14-day period) teams learned how to *use* more rules in their TMA and this enhanced performance. There was no significant difference in the performance scores in Sonobuoy Localization or in the rules-use in this type of scenario.

Military Analysis The process of translating the research findings into recommendations and changes that will be usable by the US and UK navies we have called military analysis. Initially this will focus on identifying best practice for training and skill development. Subsequently, this will address the design of human machine interfaces – especially to recommend display designs that enhance non-expert performance and training time. A longer-term goal is to design automated training systems that incorporate *expert* decision making strategies in order to enhance training, performance and knowledge management during long term deployment. We hope that the results will lead to a greater understanding of the impact of cultural and technology differences in training, as well as recommendations to improve training techniques that facilitate future multi-national efforts, exercises and operations. We trust that our results will be used by all nations to develop an integrated approach to training. An integrated approach to training is one that will incorporates best practice in techniques, advanced technology and an understanding of the influence of stress and cultural differences on human performance and decision-making in the field. In turn, these should lead to increased team performance and operational superiority

OPTIMIZED MANNING FOR THE 21ST CENTURY

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ABSTRACT

Mission's changes of the 21st century will shape the allocation of functionality among humans, computers, expert systems, equipment, and systems designed to support interoperability and optimum performance. A key component of these changes aimed at supporting netcentric warfare is the development of technologies for optimized manning. Namely, optimized manning in a combat, command and control center mandates that human-centered design focuses on the allocation of functions and tasks between humans and systems in combination with consideration for both individual and team performance. Implicit in the design and development of new technologies is the need to address new approaches to training for multi-national missions.

This presentation will provide an overview of the US/UK Science and Technology efforts related to the Technology for Optimized Manning initiative. This discussion will be organized according to three main topics:

US/UK TOM program,
Human-Centered Design systems, and
training for changing missions of the future.

Introduction/Background

In the 21st century, there are two significant forces that will alter the ways in which the US Navy will man its ships and submarines. First, reductions in funding have directly influenced the ways in which we will recruit, train and maintain a Navy. Second, advances in technology will shape the Navy of the future and its platforms. These two factors, funding and technology, will require individuals with higher levels of skills and knowledge to understand and operate complex systems. The question is how do we know which technologies to develop when we are faced with constraints in funding? Thus, it becomes imperative for nations to identify and prioritize those technologies that will support the individual, the platform and netcentric warfare system of the future.

Optimized manning dictates that all personnel and systems perform within a shipboard combat, command or control center in an accurate and timely manner that will secure a successful mission. The allocation of functionality among humans, computer programs, and equipment may be complemented or hindered by the efficiency of the Human and/or the Human-Computer System design. In addition, attention must be paid to the level of workload within a complex environment in which systems no longer consist of isolated units but rather consist of a network of systems that may or may not present a coherent or consistent representation of events in real time. Knowledge and tactics remain essential components of a successful mission, however human-centered systems that incorporate the allocation of functions and tasks between humans, hardware and software ensure optimal decision-making and operational superiority.

Central to all of these units is the allocation of functionality. Namely, the integration of systems, humans, computer programs, and equipment may be complemented or hindered by the efficiency of the Human and/or the Human-Computer System. In addition, attention must be paid to the level of workload within a complex environment in which systems no longer consist of isolated units but rather consist of a network of systems that may or may not present a coherent or consistent representation of events in real time. Knowledge and tactics remain essential components of a successful mission, however human-centered designed systems that incorporate the allocation of functions and tasks between humans, hardware and software ensure optimal decision-making and operational superiority.

Program Goals

This presentation provides an overview of an ongoing Science and Technology (S&T) program sponsored by the Office of Naval Research, US Navy and the UK Royal Navy known as "Technology for Optimized Manning" (TOM). This collaborative effort, initiated by RADM Gaffney (US Navy) and RADM Phillips (UK Royal Navy), aims to improve our bilateral science and technology collaborations. Moreover, this program is focusing on those areas of technology development that will optimize the allocation of functions to people and machines that will enhance both system and warfighting performance at an affordable cost. This program is designed to lay the groundwork for science and technology and provide technology insertion into the UK Future Surface Combatant and the US DD 21, as well as future platforms.

A first step toward achieving these goals was to sponsor a series of four workshops, two in each country, to identify and refine details for the way ahead. The four themes of the workshops are: 1) Future Battlespace and Technology, 2) Personnel and Future Systems, 3) Human Systems Integration and Technology and 4) Whole Ship Integration. While the overall goal is to provide the fleet and force personnel the technology they require to optimize manning, participation of acquisition and requirements personnel is critical to ensure that the technology is relevant.

US/UK Technology Program

Our first task was to bring together a group of people from a variety of disciplines from the US and the UK who could discuss these issues within a workshop setting. We established

four themes to these workshops: 1) Future Battlespace and Technology, 2) Personnel and Future Systems, 3) Human Systems Integration and Technology and, 4) Whole Ship Integration.

Our goal is to identify those national programs that support optimized manning and conduct a joint technology gap analysis. The result of this in depth analysis would, in turn, lay the foundation for the Science and Technology programs to be developed.

Our approach was to use the theme of each workshop as a template that is placed over each group of technologies currently under development in an attempt to characterize relevant US/UK programs and determine the scope and boundary conditions for joint research efforts.

To achieve this goal, we invited representatives from each country to attend each workshop.

Our database included information representing all platforms, including DD21. Our aim was to identify shortfalls in technology, as well as those technologies that will be developed for the "Post DD21" period.

Among our challenges, we recognize the need to address technologies that support a "Vision of the Future" in terms of joint, allied inter-operability issues, as well as distributed collaborative efforts. We have invited speakers to present their view of future platforms and opened the discussion regarding the technologies that might be required to support that effort.
Our plans are ambitious. We recognize that it is necessary to plan for the technologies of the future. However, in order to determine what kind of sailor will be needed, we believe that it is important to identify the gaps in our technology. It is only then that we can begin to direct the development of research and development (R&D) programs that forge the development of advanced technologies that will facilitate optimized manning.

Platforms for the 21st century

As we move forward in the 21st century, the US Navy is planning profound changes in technology and manning. We are aware of the plan to reduce the number of personnel for DD21 and the concern about automated systems managing damage control. While more attention has focused on the issue of whether this is possible, the real question is, "How will advances in technology and automated systems impact the ways in which we recruit, train and operate during battle?"

Our daily life is currently being shaped by advances in technology. They will continue to do so regardless of whether we welcome the intrusion of technology or choose to ignore it. Our ignorance will not last for technology changes are pervasive and alter our perception of ourselves, our workplace, our home and our battlefield. They change the way that we conduct business and the way that we conduct military operations. For those of you who have any doubt, I suggest you try doing your job without access to your computer, email, fax, voicemail, etc. There are no longer secretaries but word processors and website designers. We may not always like the intrusion of technology but we have come to rely on it. Isn't it better to take control of it and direct the ways in which it develops?

During the next 20 years, there will be significant changes in technology, equipment, systems and manning levels. Perhaps one of the most critical components of platforms of the future will be the way that they integrate human-centered system design.

Human- Centered System Design

Human-centered system design mandates that system design begin with an emphasis on human system integration (HSI). This means that the systems engineer shifts his focus from the hardware to the human in the system. Specifically, human-centered system designs account for human abilities and consider the cost of trade-offs incurred in functional allocation to the human or the machine.

At our next workshop in November, we will focus on issues relating to human-centered system design and its relationshiop to personnel issues such as recruitment, training and retention. We recognize an important link between the design of systems, advances in technology, and the training of individuals to use these complex systems in an effective way.

We will begin to explore the relationship between crew requirements, functional allocation, training and system design during our next meeting. This process assigns functions to automated systems or to humans. The result of our November workshop will provide a view at those technologies that support a more integrated and coordinated system that supports both personnel and system requirements.

Summary

As we move into the 21st century, we see the impact of rapidly changing technology that impacts the knowledge base of the civilian and military personnel. The crew of the 21st century will be faced with complex systems and situations. Automated systems and crew reductions will place additional responsibilities on those who design systems, train operators and conduct combat operations. The effect of technology will be realized differently across platforms, however, there are common issues that emerge regardless the nation, the military division or the funding available for technology development. The human decision-maker should always be considered in system design and provided with the most effective tools to facilitate those decisions. The future combatant will be more educated , more specialized and faced with the most complex environment ever presented in a combat situation. Ultimately, it will be the human who oversees the automated command and control systems, as well as the one who will use his/her knowledge to provide context to the situation and make the critical decisions.

We believe that our TOM effort is a significant step toward developing technologies that will support the systems designer and the decision-maker of the future.

QUALITY OF WORK LIFE: A CASE STUDY

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ABSTRACT

Our department developed between 1995-1998 a questionnaire intended to measure the quality of work life of the professional soldier in the Belgian Armed Forces (VELMO). This questionnaire relies on a model that takes personal and situational aspects, as well as their interaction into account in determining work behaviour.

In the beginning of this year a battalion commander was complaining about the lack of motivation of his subordinates and the absenteeism at work. Some of his younger officers, remembering their courses of psychology at the RMA, suggested to ask the department for help.

To avoid "symptomatic" actions, we proposed to ask every member of the battalion for his collaboration by completing the VELMO to diagnose the causes of the dissatisfaction and suboptimal behaviour.

Participation was on a voluntary basis and the responses were anonymous.

We received 241 completed forms (out of a 340). This sample seems representative with respect to gender, category, rank and age. The results in an absolute sense as well as compared to the norms established for the Armed Services as a whole as at brigade level revealed several weak points. Among others: inequality in treatment, challenge in the tasks, efficiency in work organisation, information flow, role conflicts, inequity of income, appreciation and several professional values thought important cannot be realised. These factors lead (among others) to low job satisfaction and low satisfaction with respect to opportunities, resulting in high percentage of medical consultation, consumption of medication and "presenteism".

The results of the questionnaire allowed us for well-focused suggestions for remedial action.

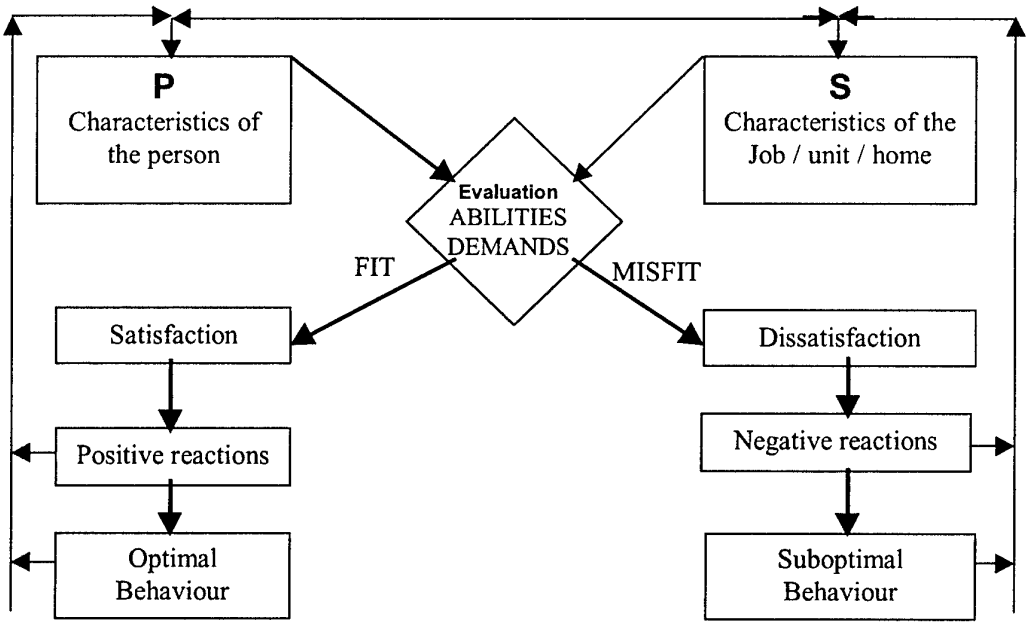
Implementation belongs to the responsibilities of the commander who set up a "task force" with the assistance of a military psychologist, called "Counsellor in Mental Readiness".

We believe that the quality of work life is an important determinant of optimal professional behaviour. Therefore, our department developed between 1995 and 1998 a questionnaire intended to measure the quality of work life of the professional soldier in the Belgian Armed Forces (VELMO[1]). In the following of this paper we will first describe very briefly this questionnaire, and second an application of it in a unit.

The questionnaire

The VELMO relies on a model that takes both personal and situational aspects, as well as their interaction into account in determining work behaviour and its outcomes. This means that a person checks if his abilities allow facing the demands of the task and of the environment. If this is the case, he will be satisfied – what can be derived from some positive "indicator behaviour" – and show an optimal professional behaviour. On the contrary, if the demands are too high, the person will be dissatisfied, show some negative indicator behaviour (for example sick leave) and the professional behaviour will be suboptimal. In turn, the (dis)satisfaction and its expression will influence the person's characteristics (e.g. his motivation to work) and, eventually, the environment (e.g. a negative image in the mind of his superior). The model we use is thus a process model (Figure 1).

Figure 1. **Model of the VELMO**



Thus, the questionnaire is composed of a series of scales that measure important aspects of each of the components of the model. For example, at the side of the situation (S), there are scales that measure aspects of leadership, the work environment and so on (Table 4). At the side of the personal characteristics (P), for example, there is a scale aiming at the importance attached to professional values by the soldier and another scale to what extent the unit allows to realise these values (Table 3). The result of the evaluation process is measured by expressions of (dis)satisfaction (Table 2) as well as the reactions to this (dis)satisfaction in the form of "negative" behaviour (Table 1). The last part of the questionnaire asks for some biographical data.

Each scale contains of course a series of items to be reliable. Each item has to be evaluated by the respondent on a ten point scale (0 = does not apply at all, 10= applies totally). In total, the questionnaire has some 300 items.

[1] VELMO is the Dutch acronym for Questionnaire Experienced Quality of Work Life in Military Organisations

The raw scores tell something on itself about the "intensity" of an aspect but to make results of an arbitrary unit comparable to other other units, a norm is needed. Therefore, the raw scores of two validation groups have been standardised and deciles[2] have been established; namely at the brigade level and at the level of all services. For example, if a unit has a score of 5/10 on a particular scale, this result suggests an average intensity but if this score falls into the fourth decile, its means that this unit scores clearly below average as compared to the reference group.

The case

In the beginning of this year a battalion commander was complaining about the lack of motivation of his subordinates and the absenteeism at work. Some of his younger officers, remembering their courses of psychology at the RMA, suggested him to ask the department for help.

In February, me and the Counsellor for Mental Readiness[3] belonging to the Operational Command of the Army, attended a meeting with the commander and the key personnel of the unit, representing the different categories of the personnel and subunits. This group has been set up as a "task force" to enhance motivation through some particular actions which had still to be determined. To avoid "symptomatic" actions, we proposed at the end of the discussion to ask every member of the battalion for his collaboration by completing the VELMO. The results should allow us to diagnose the causes of the dissatisfaction and of the negative reactions as well as their intensity. It was agreed that people should participate on voluntary basis and the responses would remain anonymous.

In the beginning of March, the questionnaire was submitted to the soldiers in a big room of the unit, on a day determined by the battalion commander. It was necessary for practical reasons to provide two time slots; i.e. one before noon and one afternoon. The reason why the questionnaire was submitted, was explained by one of my assistants, senior Captain Smets. He also gave the instructions. It took at most 90 minutes to fill in the form. At the end of the day we had 241 completed forms (out of a 340 possible respondents).

This sample shows sufficient variation with respect to gender, category, rank and age and seems representative for the unit. It consists of 88% male and 12% female soldiers. Mother tongue is for 89% French and for 11% Dutch. The partition with respect to the categories is 4.5% officers, 45.5% NCO and 50% privates. In general, the personnel of this unit is, relatively spoken, old: mean age is in the class 36/40 years; only 13% is younger than 30 years and 34% is older than 41 years. Some 80% are married or live together. Among these couples, about 75% work full time or part time. One out of five partners is soldier too. About 60% never participated in an operation in a foreign country, 24% fulfilled one mission, 9% two missions and 7% more than two missions. Some 30% of the respondents live within 15 kilometres of their work place live and a 40% others within 50 kilometres; this means that about 30% have to travel more than 100 kilometres each day.

A quick view at Table 1 through Table 4 reveals that the results in an absolute sense and the results according to the norms established for the Armed Services as a whole and at brigade level are in many cases clearly below average. With "clearly below average" we mean that the result of unit under consideration belongs to the decile 4 or a lower one, and above the decile 6 for "negative" scales. We used a double reference because the norms for brigades reflect more the specificity of the Army than then norms of all Armed Services together do.

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[2] This means that a given frequency distribution is transformed in such a way that 10 new groups are constituted which contain each 10% of the total group. This implies that new bounds of the interval have to be determined, which are no longer observed scores. Moreover, given that the frequency is fixed, the width of the intervals vary.
When using deciles, the upper bound of the 5th decile and the lower bound of the 6th decile correspond to the median of the distribution; in other words, 50% of the answer are lower than this value and 50% are higher.

[3] There is a military psychologist – Counsellor Mental Readiness (CMR) - in the staff of each brigade, each division and at the level of the Operational Command of the Army. They are responsible, as their name shows, for the mental readiness of all the units belonging to the level his working at. Thus, the CMR of a brigade is responsible for all the units belonging to the brigade.

In the following we will go from the observable indicator variables to the (unobservable) causes. This means a bottom up process in terms of the model. We consider first the last component in the model, i.e. the *outcome behaviours*. These are indicators for the lack of wellbeing. Four types of reactions will be considered: stress, workload, efficiency and flight reactions (Table 1).

Table 1. **Outcome behaviour (reactions)**

Scale	Score[1]	All services[2]	Brigade[3]
STRESS			
Psychological	3.8	5	5
Physiological	2.4	6	6
WORK LOAD			
Physical work load	4.2	5	5
Tiredness	4.8	6	6
Quality of sleep	4.7		
Medic consultation	2.5		
Lack of leisure time	5.2	5	5
EFFICIENCY			
Presenteism	4.6	7	7
Experienced own efficiency	6.1	5	5
FLIGHT REACTIONS			
Asking for another job/to leave	3.3	6	5
Preferring a (similar) civilian job	5.1	6	
Alcohol Consumption	1.2	6	6
Consumption of medication	2.7		

1. Score: mean of the absolute scores of all respondents
2. Decile of the mean of the battalion when using the norm established for all Services
3. Decile of the mean of the battalion when using the norm established for a brigade

The soldiers of the unit under consideration do not experience more *psychological or physiological stress* than others, consider the *workload* also as average, and do not feel particularly *tired*. Nevertheless, the *quality of sleep* is below average. The frequency of *medical consultation* is very high. Aside absenteeism (for medical reasons), presenteism is another negative reaction to the experienced lack of well being, particularly among the officers.

Notwithstanding all the negative experiences, the soldiers do not ask more than elsewhere to *leave* or for *another job*. There is no more *alcohol consumption* than elsewhere but the consumption of medication is far beyond average.

Second, let us determine the "domains" of *dissatisfaction* as a result of the evaluation of the relationship abilities/demands (Table 2).

Table 2. **Evaluation**

Scale	Score	All services	Brigade
SATISFACTION WITH			
Job	5.0		
Life conditions in general	7.3	5	5
Evaluation system	4.8		5
Self (autonomy/performance)	5.4		5
Instrumentality of income	2.8		
Opportunities	5.3		
Image	5.9		
Military aspects	4.5		
Efficiency	6.1	5	5
Evaluation talks	3.7	4	
Instruction	6.2	5	5

People – especially NCO's - are clearly not satisfied with their *job*, although they are moderately with the general life conditions (i.e. outside the military context). S*elf-satisfaction* is low in all categories but most among the officers and least among the privates. This is due to an experienced lack of autonomy. *Instrumentality of income* is the scale with lowest absolute score. They believe that they do not get what they deserve. The move from a garrison in Germany to a garrison in Belgium is the most probable explanation for this fact because people lost a lot of financial advantages but have still to do the same job.

Opportunities for professional self-realisation score also clearly below average. The soldiers are not satisfied with the *image* they have in the mind of others. They are not satisfied with the *military aspects* because they have to fulfil a lot of (daily) routine tasks that are not vocational specific. The fact that the mean age in the unit is rather high might have a negative effect, although it are the "younger" ones (26–40 years) who complain most. People are dissatisfied with the *evaluation system* and the way *evaluation talks* are conducted. The latter is surely related to the general distant attitude of superiors (cf. infra: internal environment). In this case, the officers and the highest ranked NCO's gave the lowest scores (2-3/10).

As shown in the model, the *characteristics of the person* constitute one group of fundamental determinants of behaviour. Four aspects are evaluated: 1) some personality traits, 2) motivation, 3) social support and 4) professional values (Table 3).

Table 3. **Characteristics of the person**

Scale	Score	All services	Brigade
PROFILE			
Sociability	6.5	5	5
Self confidence	6.4	6	[illegible]
Introversion	4.1	5	5
Need for rules & structure	6.7	6	6
Stress liability	3.8	5	5
Time management	5.8	5	5
MOTIVATION			
Professional pride	5.9	[illegible]	5
Propensity to leave	5.1	6	[illegible]
Motivation for the military aspects	6.1	5	5
Accept specificity of the job	4.5	6	5
Sense of responsibility	7.9	6	6
SOCIAL SUPPORT			
Third persons	7.8	[illegible]	5
Partner	7.5	6	6
Work	6.0	5	6
Family	7.4	5	5
Appreciation of support	5.3	[illegible]	5
PROFESSIONAL VALUES*			
Regularity	7.2/5.7	6/6	6/6
Physical condition	7.2/4.2	6/[illegible]	5/[illegible]
Self-realisation	7.3/5.4	6/[illegible]	6/[illegible]
Team spirit	8.3/5.9	5/[illegible]	5/5
Prestige of the job	6.1/5.9	6/[illegible]	6/[illegible]
Sense of adventure	6.5/5.5	5/5	5/6
Financial matters	8.5/5.0	6/[illegible]	6/[illegible]
Task related information	8.6/4.6	6/[illegible]	[illegible]
Few physical efforts	3.1/4.1	5/5	[illegible]

(*) The figure before the slash refers to the importance of a value, the figure behind the slash refers to the extent to which the unit allows for the realisation of this value

Nearby all scales of the *profile* show more or less average scores except for stress liability. It is also noteworthy that most of the respondents feel a high need for rules and structure. This may explain partly the dissatisfaction with the internal environment (cf. infra).

The answers with respect to *motivation* show some problems. People do not feel very pride with what they are doing. A lot would leave the Armed Forces if they could do the same job in a civil environment. Acceptance of typical military tasks is rather low; this is perhaps not so surprising given that that primary mission of the unit under consideration has a technical character.

Social support is experienced as sufficient but a lot do not feel well appreciated for what they are doing; this especially the case for NCO's.

At the level of *professional values*, we observe a discrepancy between the importance attached to some values and the extent to which the unit offers opportunities to realise them. This is particularly the case for physical condition, self-realisation, team spirit, financial matters and information about the task. These values are considered as very important but there are insufficient possibilities to realise them. Especially younger soldiers are complaining about these aspects.

Finally, we consider the *work situation*. Five particular aspects are taken into account: 1) labour relations, 2) leadership style, 3) the internal environment, 4) the interpersonal relations, and 5) workload.

Table 4. **Situational aspects**

Scale	Score	All services	Brigade
LABOUR RELATIONS			
Relations superior-subordinate	5.0	4	5
Experienced inequality in treatment	6.9	6	6
Experienced indifference w.r.t personnel	5.8	8	6
Participation in decision making	3.7	3	5
LEADERSHIP STYLE			
Relation oriented	5.9	5	5
Task oriented	5.8	6	5
Corrective	5.1	4	4
INTERNAL ENVIRONMENT			
Experienced importance of the task	6.7	4	5
Clarity of the task	7.1	4	4
Challenging task	4.0	4	5
Efficiency of the work organisation	3.7	3	5
Openness to innovation	3.7	4	5
Obstruction in task execution	4.9	6	5
Information flow	3.6	3	4
INTERPERSONAL RELATIONS			
Co-operation	4.1	4	4
Dealing with emotions	3.8	4	5
Hot tempered personnel	4.7	6	6
Role conflicts	5.1	7	6
Competition	3.9	4	4
Authority of the superior	6.3	6	6
Group feeling	5.2	5	6
Social climate	3.5	4	5
WORK LOAD			
Psychic work load	5.3	6	5
Physical work load	4.8	4	4

Labour relations are not good. There is a big psychological distance between superiors and subordinates. People complain about unequal treatment, a strong experienced indifference of the superiors and a serious lack of participation in decision making. It is beyond doubt that this has a demotivating effect.

The *leadership style* is considered as average or just below on the classic dimensions. Given that "corrective *leadership*" is to be considered as negative in itself, the unit scores in fact good on this scale (decile 4).

The *internal work environment* is evaluated as unsatisfying. Although the experienced importance of the task at hand seems good in absolute values, just as the clarity of the task does, they are both clearly below average when compared to the norms. Most of the tasks are not challenging enough. There seems to be a big problem with the organisation of work, which is by and large not efficient. Superiors are not innovative enough. Moreover there is a serious problem with the information flow irrespective of the category (Off, NCO, private).

Interpersonal relations are in general not sound. More than 50% of the sample complains about a lack of co-operation but at the same time there is not much competition (that, if moderate, creates cohesion). It is not allowed to express emotions. Role conflicts are often present; this means that people are often forced to fulfil a task in another way, as they would like to do. In short, the social climate is rather poor.

Workload is considered as average and is thus not a cause of dissatisfaction.

Conclusion

The questionnaire allowed us to determine the weak points and to formulate well-focused suggestions for remedial action. The negative reactions that have been observed can be avoided to a large extent. Going back to the motivation theory of Herzberg, environmental factors are causes of dissatisfaction but factors that are intrinsically related to the task are causes of satisfaction. Thus, actions can/must be undertaken in the two domains simultaneously. Satisfaction must be enhanced by changing in priority the negative evaluated aspects of the work environment that are intrinsically related to the job, and in the second place the other aspects. The factor "personnel" must be considered as given and is thus not subject to major changes. The implementation belongs of course to the responsibilities of the commander, with the help of his "task force" and with the assistance of his "Counsellor in Mental Readiness".

PERCEPTION OF LEADERSHIP CHARACTERISTICS AMONG STUDENTS OF THE ROYAL MILITARY ACADEMY AND YOUNG CAREER OFFICERS

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ABSTRACT

The dramatic changes in both the military and civilian society require a new vision on leadership behaviour of an officer. "Situational Leadership" is now the main idea. In 1998 the chiefs of staff of the Belgian Armed Forces decided to rely on the model of the "Competing Values" of R.E. Quinn. This model can be considered as an integration of all former models of the past century. The model describes eight roles - Innovator, Negotiator, Producer, Director, Co-ordinator, Controller, Motivator and Mentor – in terms of 24 aptitudes and skills that on should master to be effective in a certain role. Meanwhile, it has been decided which aptitudes are considered important at a certain moment of an officer's career and by when he should master them. Our department is in charge of developing an instrument for the evaluation of the effectiveness of education/training activities with respect to these roles. So first we have to determine a "base line"; in other words what perception of leadership do people have – i.c. our RMA students and young officers - who did not receive any leadership instruction or training (according to the model of Quinn).

In the presentation, four points will be addressed: 1) the model itself, 2) which characteristics of leadership are believed to be important, 3) how are these related to the roles, and 4) what is the relationship between some personality characteristics and dominant roles.

In 1998 the chiefs of staff of the Belgian Armed Forces decided to rely on the model of the "Competing Values" of R.E. Quinn in establishing a new vision on leadership behaviour for all NCO's and officers of the Belgian Armed Forces, irrespective of their rank. Meanwhile, it has been decided which aptitudes are considered important at a certain moment of an officer's career and by when he should master them. Our department is in charge of developing an instrument for the evaluation of the effectiveness of education/training activities with respect to these roles. So first we have to determine a "base line"; in other words what perception of leadership do people have – i.c. our RMA students and young officers - who did not receive any leadership instruction or training (according to the model of Quinn).

In this presentation, four points will be addressed: 1) the model itself; 2) which characteristics of leadership are believed to be important by these young people; 3) how are these characteristics related to the roles that a leader should master; and 4) what is the relationship between personality characteristics and roles.

The competing values model

The competing values model can be considered as an integration of all former approaches prevailing at a certain moment in the past century and in which the leaders behaved according to some typical role. In the rational objectives approach, in the beginning of the industrial era, a leader is in the first place a producer and a director. The internal process approach, in the period of big size manufactories, is characterised by attention for the control and co-ordination functions. The human relations approach, after the Ohio experiments in the thirties, shows that a leader should pay attention to the dimension and be especially a motivator and a counsellor. Finally, the open system approach, after the economic crisis of the seventies, proved that the primary roles of a leader are being an innovator and a negotiator, with his external world as with his internal world as well.

The competing values model describes these eight roles in terms of 24 aptitudes and skills that one should master to be effective in a given role[1]. Table 1 shows how approaches and roles fit together and lists the aptitudes per role.

Method

To determine the intuitive leadership conceptions of the target groups, a questionnaire ad hoc has been constructed. It consists of four parts. Part A aims at definitorial elements of the leadership concept. Therefore, the respondents had first to define leadership in their own words. Second they had to define *military* leadership and, third, they had to pick the eight most and the four least typical adjectives out of a list adjectives which characterise leadership and which refer to the aptitudes and skills (see Table 1).

[1] For a more detailed presentation of the model see my paper in the proceedings of the 35th IAMPS (Firenze, May 1999).

Table 1 Link between approach, roles, skills and "qualifiers" used in the questionnaire.

OPEN SYSTEM	INNOVATOR	1. Live with changes 2. Creative thinking 3. Management of changes	Creative Adaptive Visionary
	NEGOTIATOR	1. Provide and maintain a basis of power 2. Negotiate commitment and agreement 3. Present ideas	Diplomatic Convincing Mediation
RATIONAL OBJECTIVES	PRODUCER	1. Personal productivity and motivation 2. Time and stress management 3. Create a productive environment	Productive Motivating Managing
	DIRECTOR	1. Have a vision, plan, set goals 2. Devise and organise 3. Delegate effectively	Initiates Delegates Plans
INTERNAL PROCESSES	COORDINATOR	1.Project management 2.Design tasks 3. Cross-functional management	Plans Systematic Controls
	CONTROLLER	1. Control own functioning 2. Control functioning of the collectivities 3. Control functioning of the organisation	Dutiful Precise Examines
HUMAN RELATIONS	MOTIVATOR	1. Team building 2. Participation in decision making 3. Management of conflicts	Mediation Collaborative Unifying
	COUNSELLOR	1. Insight in yourself & in others 2. Effective communication 3. Development of subordinates	Communicati ve Empathy Counselling

Part B aims at determining the most preferred and the least preferred role out of four in a described situation. Two times ten situations have been presented (e.g. relation with subordinates, work atmosphere, decision making). In the first set of situations the four behaviours refer to each time to the role of controller, counsellor, negotiator and director. In the second set of situations, the behaviours refer to the roles of innovator, director, co-ordinator and motivator.

For example:

If, during a mission, one of my subordinates asks me for a leave for personnel reasons:
I verify first the disturbances his absence may cause in the unit [controller]
I discuss with him his problems and check if I can help him [counsellor]
I send his request to my superior with a recommendation [negotiator]
I give him the number of days according to his rights [director]

[The text between the brackets does not appear in the questionnaire!]

Part C is the Lavoegie questionnaire, which allows for a description of personality in terms of nine dimensions: general activity, sociability, perseverance, social intelligence, influence, maturity, optimism, sincerity and mastering.

Part D contains some biographical data.

The questionnaire has been "tested" by submitting it to the 98 students of the Preparatory Division of the RMA. Only minor changes to the first draft were necessary. Particularly, it was indicated to substitute three adjectives by a synonym. For example, "flexible" was confused with "indulgent or lenient" and therefore substituted by "adaptive".

The target group consists of three subgroups. The first group is composed of RMA students who are attending the courses of the first academic year, respectively the last year; i.e. the fourth year for students in the Social and Military Sciences Division and the fifth year for the Civil Engineers Division. The third group is composed of officers with less than five years experience in the Armed Services.

In this presentation the results of the second and the third group only will be addressed. The sample consisting of last year RMA students counts 73 people and the sample of young officers 102. The response quotas are 67 and 42 respectively.

Among those 109, we have 93 male and 16 female respondents. Eighty belong to the Army, 21 to the Air Force, 5 to the Navy and 3 to the Medical Service.

Results Part A

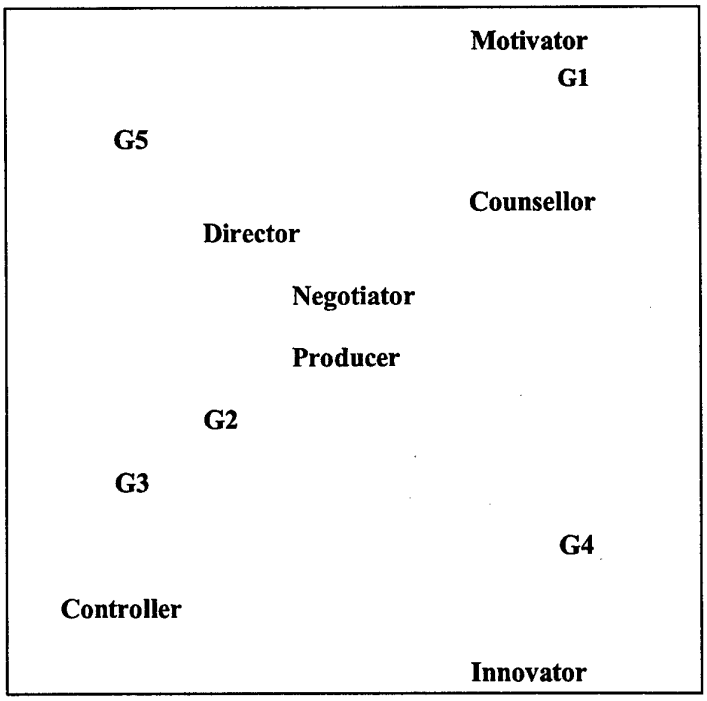
The definition our RMA students gave looked often "academic definitions" rather than own perceptions. They probably tried to remember what definition has been given in the courses of psychology. The young officers gave already a more personal description but, in fact, it reflects the same fundamental aspects. Often cited "prototypical" elements of leadership in general are mission, *vision, communication, being an example, trust, collective interests before personal interests, voluntary followed.* Military leadership was mostly described "as above" plus six particular elements. Most frequent aspects are *a quick evolving situation, extreme conditions, forced to quick decision making, flexibility (switching from operational conditions to peace conditions), multiple roles, hierarchical relationship.* Nearby 50% of the female respondents mentioned also *"masculine environment".*

The aptitudes and skills that have been cited most are: motivate, convincing, plan, diplomatic. The least cited items are examine, delegate, and unify. Thus, the most typical role is *negotiator* and in the second place the role of *producer*. The least typical role is being a *controller.*

There were no significant differences between the samples on the basis of gender, nor Service or personality dimension except for "creative" and "mediation" with higher frequencies among the RMA students, and "systematic" with a higher frequency at the side of the young officers.

A topological analysis– a kind of cluster analysis – in which aptitudes and roles are associated according to the responses, results in five groups of respondents which are all mixed with respect to the qualifiers. Going from the top of the Figure to the bottom, we see that Group 1 is strongly associated with motivator and to a lesser extent with counsellor, G5 is associated with director, G2 with producer, G3 with controller, G4 with innovator and finally G5 with director. In an ideal solution, all subjects should be concentrated in the middle of the graph with all roles on circle around them. In other words they do not have a clear-cut image of the roles. It is thus not surprising the solution does not reflect the model of Quinn (Figure 1). Again, there are no significant differences between the aforementioned subgroups.

Figure 1. **Topological analysis based on adjectives**

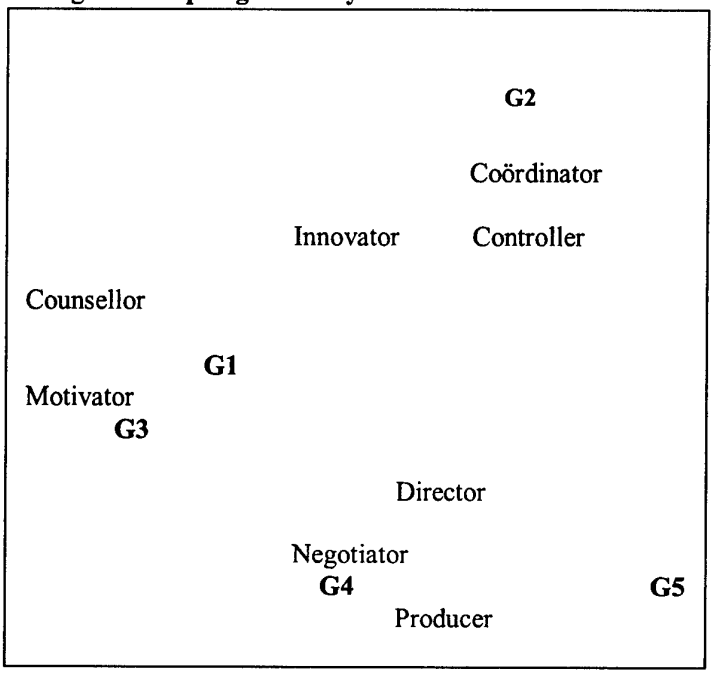


Results of part B

The three most chosen roles (with nearby the same frequencies) in the given situations are *motivator, counsellor* and *director.* The least chosen solution was *negotiator.*

A topological analysis based on the association between the most preferred role in a given situation results again in five mixed groups and does not reflect the model of Quinn. In other words, they do not master all the roles and they cannot associate them well to a particular situation in an appropriate way.

Figure 2. **Topological analysis based on roles**

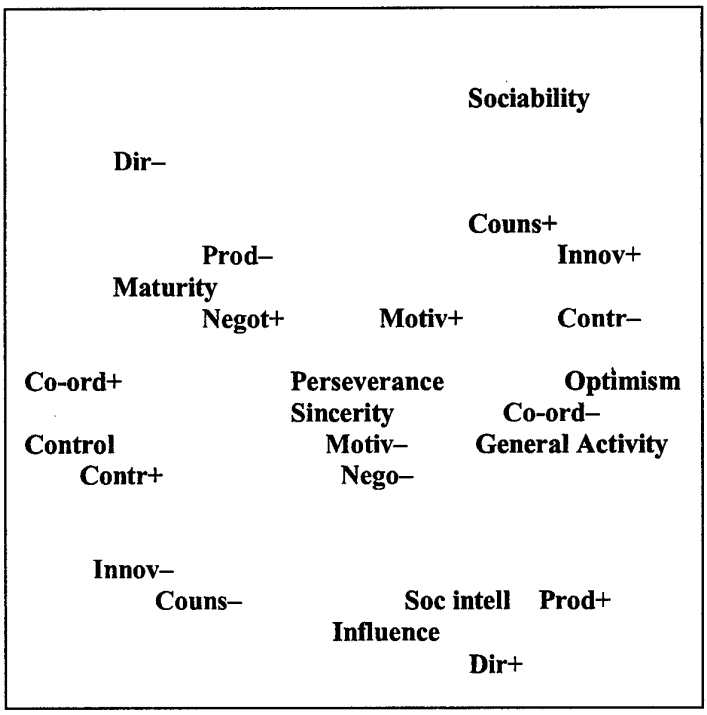


Results Part C

The two most prominent dimensions are *sincerity* and *activity.* The weakest one is *perseverance.* This is rather surprising but it might be due to confusion with stubbornness.

A topological analysis based on the association between the roles in a particular situation and the personality dimensions shows some interesting associations. The roles are expressed in terms of chosen behaviour (printed in blue and marked with a "plus") and of rejected behaviour (printed in red and marked with a "minus"). Perseverance and Sincerity are central values. The role of counsellor is associated with sociability, negotiator with maturity, co-ordinator and controller with controllability. Social intelligence and influence are typically associated with producer and director. It should be noticed that the chosen roles are mirrored in the rejected roles. The graph reflects also more or less the model of Quinn (Figure 3). Producer and director appear close to each other, just as co-ordinator and controller. Innovator appears in the right quadrant but negotiator does not. Motivator and counsellor are located too much to the right.

Figure 3. **Topological analysis based on personality dimensions and chosen/rejected roles**



Conclusion

Our RMA students and our young officers can give a sound theoretical definition of what leadership in general is and they have an image of what leadership means in various situations through instruction and training but this image is far from complete in terms of the roles described by Quinn. Moreover they chose often not the most appropriate behaviour according to the characteristics of the situation at hand.

Thus, in the future our instruction must focus first on rendering that image more complete and training must aim at learning to apply the most appropriated role in the given situation. By doing so we will have the flexible, polyvalent leaders modern armed services need because of the variety of missions that can be assigned to them.

PSYCHOLOGICAL MODEL OF COMBAT STRESS

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ABSTRACT

Combat stress denotes the onset of psychological, physical and behavioural reactions brought about by the exposure to traumatic experiences in the battlefield.

Whether traumatic experiences will result in combat stress depends on a number of factors. Presented below is the psychological model of combat stress as derived from the experience and research run during the Homeland Defence War. (Figure)

The onset of combat stress is conditioned by three groups of factors; the first group containing factors related to battlefield *(ratio of attack and defence force, and general conditions in the battlefield. The situation characterized by equal attacking and defending force (manpower and material potential) is expected to have equally traumatic impact on both sides. The conflict of the attacking force far more powerful than the defending one will also be much more traumatic for the latter.*

The next group involves stress-coping factors which, facilitated by well-conducted prevention, can fairly reduce effects of traumatic events in the field (especially in the case of acute combat stress and post-traumatic stress disorder). Quality combat stress prevention requires systematical efforts towards enhancing personal, unit and social coping factors (where unit psychologists have an important role).

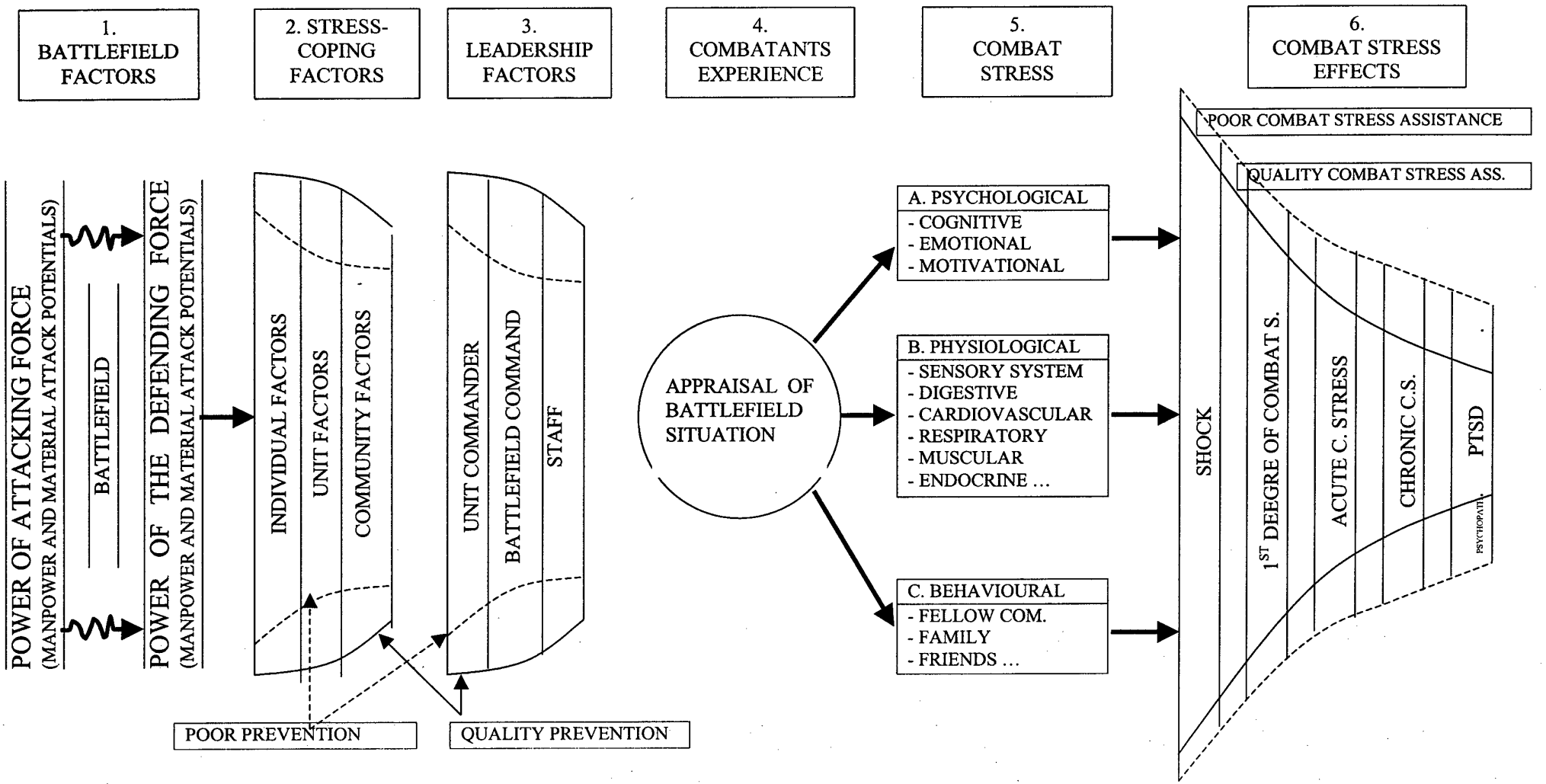
Leadership factors make the last group of factors, with special emphasis on unit commanders, battlefield command and senior and top-level staffs. Quality combat stress training and prevention by unit commander, command and staff will contribute significantly to minimize negative effects of traumatic events in the battlefield.

In heavy combat conditions combatants, moved by naturally activated defence/coping psychological mechanisms, go through and assess the battlefield situation. Conditions perceived as severe life threat will result in a series of combat stress reactions, which can be categorized into three main groups psychological reactions *(cognitive, emotional, motivational),* physiological reactions *(sensory reactions, dygestive system reactions, cardiovascular system reactions, respiratory and muscular system reactions) and* behavioural reactions *(directed towards fellow combatants, commanders, family members, friends etc).*

The factors and processes related to traumatic events in the battlefield will result in differential severity of combat stress. Almost all exposed experience psychological shock, which most soldiers do manage to get over while still in the battlefield, whereas a small portion develop the initial (first) degree of combat stress. *However, after a short recovery a few steps away from the battlefield, aided by fellow combatants, commanders, unit psychologist and physician, the soldiers affected overcome this degree and resume their duty. A small percentage of soldiers, though, fails to recover within short time and develops* acute combat stress. *Even then some individuals will not recover but will suffer the onset of* chronic combat stress, *or even fall victims of* post-traumatic stress disorder *or different psychopathological conditions.*

Again, to emphasize is appropriate prevention and assistance, the responsibility mainly of military psychologists, as a powerful tool in reducing the impact of combat stress.

MODEL OF SOLDIER'S EXPERIENCE AND BEHAVIOUR IN COMBAT STRESS CONDITIONS



PSYCHOLOGICAL SUPPORT AND ASSISTANCE

PSYCHOLOGICAL & PSYCHIATRIC TREATMENT

The term "combat stress" is used to denote psychological, physical and somatic reactions resulting from exposure to traumatic battlefield events. In combat situations, says S. Noy (1991), the conflicting sides employ all the power available to discourage the enemy and to force him to surrender.

The research in the field highlight the problem of combat stress. Studies by American researchers reported combat stress reactions in as many as 33% of personnel deployed in heavy combat during the ww II. In the Pacific front combat stress reactions victims equalled the number of wounded. In the Yom Kippur war combat stress victims in some Israeli units accounted for 70 % of the wounded (Levav, Greenfedl and Baruch, 1979). In an Israeli unit with a heavy toll from the Lebanon War in 1982 the wounded-combat stress casualties ratio was 1:1,2 (Noy, Nardi and Solomon, 1986).

There have been instances of battles and wars lost to combat stress reactions that incapacitated soldiers from fighting on (Noy, 1991).

Table 1 contains data on physical and psychological toll of recent wars:

Table 1: Comparison of data on physical and psychological casualties of modern-age conflicts

Wars	Deaths	Psychological casualties
US A. Forces-Korean war	33.629	48.002
US.A Forces-Vietnam war	16%	12.6%
Israel –"Yom Kippur War"(1973)		30%
Israel – Lebanon War 1982		3 times more

Presented in Figure 1. is the model of combat stress developed by Croatian psychologists (Pavlina, Komar and Filjak, 1997), based on the Croatian Homeland War experience, research by home and international experts (e.g. Noy, 1991; Foy 1994; Pavlina, Došen, Filjak, Marić, 1993; Drenovac, 1996), and the psychological model of combat stress by R. Gal and F. D. Jones (1995).

Below presented are the basic facts related to the model, as well as to the following six aspects:

1. battlefield factors
2. stress protection factors
3. leadership factors
4. experience and appraisal of combat situation
5. combat stress reactions
6. combat stress effects

Also, the paper highlights the benefit of psychological support and care in fighting and prevention combat stress, and contains the guidelines to unit commanders on procedures for minimising the impact of combat stress risk factors.

1. BATTLEFIELD-RELATED FACTORS

These are combat stress-related factors involving combat conditions as principal source of stress arousals:

a) intensity and duration of combat operation

b) power (human and material factor respectively) ratio
c) general battlefield conditions
d) observing of international norms and conventions on armed conflict

Severity of combat stress reactions is primarily a function of combat intensity. Sustained, deploring combat operations take far more psychological casualties compared to those of lesser duration and intensity.

Operations carried out in general conditions and strategies and between adversaries matching in personnel and material are likely to have comparable traumatic impact on both sides. Should one side dominate, be it in manpower, arms, ammunition, equipment and position, and resort to atrocities, it places the opponent under the threat of severe stress arousal with quite expectable negative stress effects.

There is, however, a time-honoured notion relevant in this regard, and had been articulated by the ancient philosopher Xenophanes, saying that it is human potential and its combat spirit, not a massive force or arms, that wins the war.

The extent of combat stress is partly determined by the very battlefield conditions too. Launching an attack from an adverse position will expose soldiers to heavy stress arousals and consenquently to severe combat stress.

Warfare strategy is another important battlefield factor. Namely, the respect of the international warfare norms and conventions is known to reduce the incidence of stressful situations and consenquently stress effects too, whereas atrocities and internationally prohibited tools (cluster bombs, toxic gases, napalm bombs) used to destroy hospitals, kindergartens, schools, churches etc. cause far heavier combat stress.

2. STRESS PREVENTION FACTORS

The next group of factors determining the extent of combat trauma involves stress prevention factors. Quality prevention has been proved to "damp" the effect of traumatic conditions (acute combat stress and post-traumatic stress disorder). Primary prevention of combat stress encompasses:

a) individual prevention factors
b) unit prevention factors
c) social prevention factors

Primary prevention of combat stress is focused on one's proper prevention factors, and is conducted through

a) selection and classification of the military personnel (especially for specific assignments)

b) combat readiness promotion through proven psychological preparing techniques and combat training

According to the research in the field, identifying the individuals likely to develop combat stress is impossible, i.e. there have been no evidence to claim predisposition to combat stress (and likewise for bravery). Combat stress is rather determined by the situation factors, primarily unit characteristics. However, proper selection and classification enable matching of assignment with soldier characteristics, i. e. leaving out soldiers lacking the required psychological criteria and personality profile. In that way the military is manned by individuals physically and psychologically fit for effective military performance, which in its turn helps minimise combat stress reactions (Filjak, Komar and Pavlina, 1997).

Psychological preparation and combat training of soldiers, and instruction on psychological and physiological reactions emerging in life-threatening situations, on

dealing with fear and anxiety and on effective behaviours in such conditions proved to be a most effective prevention tool. Therefore, a set of handy guidelines was prepared advising commanders on how to keep fear under control, and soldiers how to control combat stress (a group of authors, 1992).

Unit prevention factors, primarily togetherness among the members, help reduce the impact of traumatic event and enhance self-confidence in the heaviest conditions, whereas loss of confidence in one's peers and leaders opens the door to combat stress reactions and failure.

Elite units, by definition characterised by elevated combat readiness, suffer fewer casualties to combat stress compared to ordinary units. Studies have revealed unit psychological combat readiness can be promoted, and to a high level, by selecting psychologically fit soldiers and commanders, by quality training, proper stimulation, and the like.

Social support is another trauma- and combat stress-reducing factor. Soldiers deployed in operations disapproved by their environment (family, community) as a rule face considerable psychological difficulties. Some are faced with family problems that add to the concern, which undermines their concentration and coping with combat stress. Studies have shown that combatants frustrated by inability to deal with family problems (especially if serious) develop internal conflicts, frustrations and anxiety all of which render them more susceptible to combat stress. Instructions in this regard were issued by a group of authors in the Armed Forces, 1992; Pavlina, Filjak, Bender-Horvat, 2000).

3. LEADERSHIP FACTORS

The following group of factors involves leadership factors. Proper selection and training of leaders on the combat stress issue, in conjuction with competent preventive policy by unit commanders and senior command levels, can do much to mitigate traumatic impact of combat. The responsibility in this regard is shared among:

a) unit commanders
b) field command
c) senior levels commands

Soldiers perceive stressful combat situations less threatening when backed up by a competent and reliable commander and senior command staff. Kallai (1983) reports on Israeli soldiers crediting competent commander the most with instilling the sense of safety and self-confidence into them. The study by Noy, Nardi and Solomon (1986) revealed the highest incidence of combat stress reactions in units where soldiers lacked trust in their commander.

Studies have revealed combat stress prevention most exercisable through competent commanders, the rest of factors are hardly possible to influence, as reactions to life-threatening situations are mostly inborn. Military experts recommend developing the command aspect (unit commanders in particular), in terms of capabilities (by means of selection and classification), trainedness and motivation (i.e.stimulation) for the demanding, long-term and highly responsible unit leading duty, particularly with regard to enhancing psychological combat readiness of soldiers.

Military psychologists in Croatia have developed highly effective procedures for minimising combat stress risk intended for commanders (Koren and Zelić, 2000; Pavlina, Filjak and Bender-Horvat, 2000).

4. COMBATANT'S EXPERIENCE

Combat situations involve three different types of combat stressors:

a) psychological stressors
b) physical stressors
c) physiological stressors

Psychological stressors impair soldier's psychological condition, which then manifests either as *cognitive stressors* (sensory overload versus deprivation, information overload versus lack, ambiguous situations, isolation, hard choice) or *emotional stressors* (fear, anxiety, resentment, anger)

Physical stressors too undermine soldier's resistance thus paving the way to combat stress reactions (e.g. heat, cold, humidity, explosions, vibrations, noise).

Physiological stressors (e.g. sleep deprivation, dehydration, poor hygienic conditions, physical exhaustion, poor nutrition) destroy soldiers' resistance to trauma.

Exposed to life threat in the battlefield, combatants experience fear of dying or heavy wounding, particularly in sustained operations. Such conditions lead to an intensive inner psychological conflict between the survival instinct and the commitment towards one's duties as a soldier. In extremely dangerous situations, deprived of social support, soldiers perceive and visualise imminent death threat, leading to high stress and anxiety level and the sense of helplessness. Combat stress reactions are a natural result of this.

5. COMBAT STRESS REACTIONS

Traumatic combat events are a source of a number of reactions of different type, intensity and duration:

a) psychological reactions (cognitive, emotional, motivational)
b) physical reactions (in sensory, digestive, vascular, respiratory and muscular system,
c) behavioural reactions (towards fellow-combatants, commanders, family, friends...)

When a combat situation is perceived as life-threatening, soldiers may develop one of the following main types of reactions:

a) positive experience and behaviour in combat stress situation
b) dysfunctional experience and behaviour, i.e. combat stress and disobedience

Positive experience and behaviour manifest in enhanced unit togetherness, loyalty to one's fellow combatants and the commander, increased endurance, alertness and vigilance, increased tolerance to discomfort and pain, sense of purpose, increased faith in favourable outcome, courage, bravery.

Dysfunctional behaviour manifests either as *combat stress* or *misconduct.*

Fear, anxiety, depression, anger, insomnia are common combat stress signs, affecting the best combatants, heros included. More severe signs may ensue too (depletion, apathy, impaired memory or loss of memory, hearing and the like) that call for commander's, psychologist's, medical personnel and fellow combatants' assistance to alleviate the affected soldier's condition and prevent even worse effects (Koren and Zelić, 2000).

Some soldiers may display misconduct as a form of dysfunctional or harmful responding. Most acts of misconduct are nowadays considered violation of civilisational norms of behaviour and of international war norms. Modern armies treat misconduct differently from combat stress, and have established two main forms of misconduct intervention:

1) sanctionable behaviours within the military command and law responsibility (e.g. killing enemy prisoners of war, mutilating enemy dead, torturing enemy prisoners, looting, rape, killing civilians, unallowed leaving the unit, refusing to obey orders, threats or actual killing of soldiers or commanders etc)
2) behaviours requiring procedures in the personnel system and the military command (e.g. simulating, self-wounding, wounding due to neglect or ignoring of protection measures, alcohol and drug abuse, health neglect etc)

6. COMBAT STRESS EFFECTS

The factors and processes described above result in different stages of combat stress effects:

a) psychological shock
b) immediate (1st) stage of combat stress
c) acute (2nd) stage of combat stress
d) chronic (3rd) stage of combat stress i.e. post-traumatic stress disorder and different pathological forms)

Traumatic events in the battlefield inevitably lead to psychological shock, the severity and duration determined by a number of factors, primarily the trauma intensity, individual, unit and social stress coping factors, leadership, unit psychologist' and physician's intervention. Most soldiers, however, recover from shock quickly and successfully. A smaller portion that failed to recover will develop combat stress. Combat stress is not a statical occurence, it develops in a cycle. S. Noy classified combat stress into three stages - immediate (1st stage), acute (2nd) and chronic (3rd) stage of combat stress, each bearing four main features

a) manifestation
b) onset
c) duration
d) recovery changes

Table 2 contains the basic data on the four main features of combat stress stages (Pavlina, Filjak and Bender-Horvat, 2000).

Table 2. Summary of features of combat stress cycle

1. Immediate (1st) stage of combat stress
a) manifests as: severe anxiety, manifested also in moods and behaviour changes b) onset: during the traumatic event c) duration: a couple of hours or days following the trauma d) recovery chances: substantial, as a minor part of soldiers fall victims to the 2nd (acute) stage
2. Acute (2nd) stage of combat stress
a) manifests in: anxiety, depression, conversion reactions, physical dyscomfort, pain, behaviour changes

b) onset: a couple of days or weeks following the traumatic event c) duration: several weeks or months d) recovery chances: rather good (not many soldiers develop the 3rd chronic stage)
3. Chronic (3rd) stage of combat stress
a) manifests in: particularly severe disorder (post-traumatic stress disorder) or otherwise (nightmares, anger or violence bursts, anticipating new accidents, disrupted interpersonal relationships, sexual dysfunction etc) b) onset: several months following the trauma (often 6 months later) c) duration: extended (especially in the case of personality disorders) d) recovery chances: positive, especially in the absence of serious personality disorders

A small number of combatants will actually develop the initial (1st) grade of combat stress, for failing to recover from trauma-induced psychological shock. Following a brief recovery close to the battlefield, assisted by fellow combatants, commanders, the unit psychologist and the physician, most soldiers indeed recover from the 1st grade of combat stress and resume their duties.

Acute stress affects the few combatants whose treatment of initial grade of stress had no effect, and who need transporting to further echelon.

Still fewer combatants fail to resolve acute stress, and get affected by chronic (3rd grade) stress. Some of them develop a severe type of post-traumatic stress disorder or a form of psychopathology.

Combat stress effects are successfuly fought with quality combat stress prevention and care, where unit psychologist has a prominent part. Proper prevention and treatment measures can significantly reduce psychological casualties.

Half the victims of combat stress reactions actually need evacuating from the battlefield. Some 50-85 % evacuated recover from combat stress and resume their duties within 1-3 days. The rest will do so within 1-2 weeks, with the support from the peers, commanders and unit psychologist. Recovery from combat stress and return to soldier duty preclude the risk of recurrent combat stress.

As few as 5 % soldiers despite the treatment fail to recover, mostly due to underlying neuropsychiatric disturbances (Noy, 1991; Bender-Horvat, 1994; Koren and Zelić, 2000; Pavlina, Filjak and Bender-Horvat, 2000).

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PSYCHOLOGICAL PREDICTORS OF SUCCESS FOR ROMANIAN OFFICERS APPLYING FOR DEFENCE ATTACHE' POSITION

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ABSTRACT

The scores of an enlarged, complex selection battery (15 ability and personality tests) have been correlated with the marks obtained by the officers participating in the competition-(exam) for becoming military representatives of Romania abroad.
This correlation has been done within concurrent validation study attended by a-sample of 42 officer candidates.

Out of 79 test scores and non-test data, 38 have been validated with criterion data (the final competition mark, the mark obtained for the special training, the mark for the foreign language and the mark military and political analysis) by linear, simple and multiple correlation.

The multiple correlation coefficients between the predictor information and the four criterion data are in the .76 to .88 range compared to $p > .001$.

By calculating the global predictive indicators related to the four criterion data the psychological exam may become a psychometric composite strategy from a clinic composite one in decision making.

I. INTRODUCTION

Diplomatic missions abroad are thought by Romanian Armed Forces and other countries' Armed Forces to be very complex activities requiring special mental and personality qualities in the officers who are assigned to such exceptional missions.

This is why many modern armed forces use psychological and knowledge tests to select, based on skill and competence criteria, officers - candidates for vacant diplomatic positions abroad. Of course, they should have graduated specialty post-university courses.

In order to improve psychological tests for selection of officers for this type of missions specialized departments were established at our Armed Forces level too. They are manned with graduated psychologists, civilians and military. They participate in the evaluation and development of test batteries able to predict professional performance of personnel with special duties and missions, and directly contribute to the officer selection for being trained and conducting special missions.

One of the operational methods for establishing predictive value of the psychological exam for officer selection for diplomatic missions abroad is studying the local validity of indicators belonging to aptitude and personality tests related to the results of knowledge and specialty expertise exams.

In other words, by establishing psychological correlates of success for officers - candidates to the competition for diplomatic positions abroad - contribution of psychological exam to prediction of professional performance and improvement of selection as far as these military professionals are concerned may be evaluated.

II. OBJECT AND METHODS

An initial enlarged and complex battery comprising 15 aptitude and personality test including 76 test-indicators was applied for officers participating in the competition for becoming military diplomatic representatives of Romania abroad during the last two years.

Psychological exam goes before knowledge exam and lasts for three days (during the first day collective written paper - 6 hours - is organized and during the following two days individual exams - 1 1/2 hours per candidate - are taking place). Psychological test results are included in the notification of fit/unfit for permanent military diplomatic representation mission abroad and in the predictive notification representing an estimation of the psycho-aptitude background for such missions.

Given that officers participating in the competition for becoming military representatives should meet preliminary conditions regarding age, education, evaluation report, health and welfare report, officers obtaining low scores and evaluations at psycho-aptitude and personality tests, making them unfit for such missions are few (Unfit notification is very rare but not impossible taking into dynamics of individual mental condition and performance under stress specific to the competition.)

On the other hand, officers participating in such competitions are previously selected, based on psychological tests, for manning operational-informative departments or for participating in specific training activities. They belong to all types of specialties and arms and they are between 35 and 51 years old.

Psychological exam at this level faces the "dwindle of the crowd" effect, well known in the occupational selection activity. In this case, test battery should be analysed in the light of its diagnostic and predictive capabilities for the groups of previously selected individuals homogenized as far as mental aptitude issue is concerned (1).

In such situations validation of psychological test battery results only from a predictive local variation based on immediate professional success criteria (pass in the knowledge and expertise test for professional positions).

For investigating diagnostic and predictive value of the test battery used in psychological examination of officers - participation in the competition for becoming permanent diplomatic representatives of the Romanian Armed Forces abroad - a sample group of 42 individuals was used. They completed the whole knowledge test with the following criteria indicators of stress:

1 - Final competition mark (FCM)
2. -Basic political-military training mark (PMTM)
3. Specialty training mark (STM)
4. Foreign language mark (FLM)

The four criteria indicators of success were converted from marks (from 1 to 10 with two decimal fractions) into T distributive marks for the sample group of officers (N=42).

The same method was used for test and non-test scores of the psychological exam in order to have the same measure for statistical correlation calculation (Person correlation coefficient and multiple correlation coefficient).

Psychological exam included initially an extended test and test indicator battery comprising:

- *7 general and specific aptitude test providing 18 test-indicators* (1, GI - general intelligence, 2 GVA - general verbal aptitude, 3 DA - distributive attention Prague, 4. CA - concentration ability, 5 RIS - test of resistance to informational stress, 6. VA - verbal - associative test, 7 VC - verbal creativity)

8 personality tests providing 58 test-indicators (1.FPI - Freiburg questionnaire including 12 scales, 2. EPQ - Eysenck questionnaire including 5 scales, 3. PQ-14 F-personality questionnaire based on Melnikov and Iampolski including 14 personality factors, 4. T-temperament questionnaire based on Rusalov and including 9 scales, 5.MBTI-Myer Briggs preference typological indicatorincluding 8 scales, 6. R-Rosenzwig frustration test adjusted for collective use and providing 7 indicators, 7. IE-questionnaire for locus of control, based on Potkay and Allen, 8. IE-CT questionnaire for locus of control and resistance to rumors including 2 scales and based on Septimiu Chelcea)

All personality tests were standardized by us and adjusted for data scanning according to answer sheets and their PC processing.

Psychological exam also included clinical methods providing integrative data and non-test information such as:

anamnestic record and individual interview
observation of verbal and non-verbal behaviour
projective test: tree test based on Koch, pulsation test based on Szondy
analysis and synthesis of general psychometric data and qualitative data

Psychological committee gave each individual three marks with dwo decimal fractions for the following:

1. general intellectual potential (GIP)
2. personality coefficient (PC)
3. psychological examination mean (PEM) given by GIP +PC/2

In order to determine the three indicators' predictive value as to the success in knowledge exam, they were converted into T distributive marks for the sample group.

76 test indicators and 3 non-test indicators, with predictive value, of the psychological exam went through simple and multiple linear correlation calculations involving the four criteria-indicators of success in competition for the vacant military diplomatic representative positions.

III RESULTS AND CONCLUSIONS

Out of the total number of 76 indicators and 3 non-test indicators of the psychological exam the following indicators were validated as a result of simple and multiple linear correlation coefficient calculation involving each of the four criteria of success in competition:

1. 16 test-indicators (predictors) provided by 3 aptitude tests (GI, GVA, DA) out of 7 tests
2. 19 test-indicators (predictors) provided by 6 personality tests (FPI, PQ-14 F, EPQ, T, MBTI, R) out of 8 personality tests;
3. 3 non-test indicators representing general estimations under the form of marks (from 1 to 10) given by the psychologists proved to be predictive compared to analyzed criteria

38 test and non-test predictors of the psychological exam that concurrently met the following two conditions were registered (out of the total number of 79 indicators initially checked)

1. to be significantly correlated in a p= .05 with at least one of the four criteria of success (Pearson correlation coefficient values are between .28 - .64); the most stable predictors (GI-V -verbal intelligence, FPI-E - extraversion, GIP-psychologist mark for intellectual potential) simultaneously correlate with up to 3 success criteria

2. to form a combination of R multiple correlation with at least one of the 4 success criteria at significance level p= .001 (R^2 determination coefficients cover at least 59% of variation)

In Tables 2 through 5 optimal combinations of the 38 predictors or the psychological exam are presented. Multiple regression equation factors needed in predictive indicator calculation (in T marks) are shown: multiple correlation coefficients for validation of selection battery and prediction of success for Romanian officers applying for defense attache position (Table 1), psychological correlates of the final competition mark (Table 2) of the military and political analysis mark (Table 3), of the specialty training mark (Table 4) and of the foreign language mark (Table 5).

Table 1

MULTIPLE CORRELATION COEFFICIENTS FOR VALIDATION OF PSYCHOLOGICAL SELECTION BATTERY AND FOR PREDICTION OF SUCCESS FOR ROMANIAN OFFICERS APPLYING FOR DEFENSE ATTACHE' POSITION

No.	Criteria of success	No. of predictor variables	Multiple correlation coefficients	Multiple determination coefficients
1	Final competition mark	12	.88	.77
2	Mark for basic political-military training	10	.80	.64
3	Mark for specialty training	11	.76	.58
4	Mark for foreign language	9	.76	.58
		Note n= 42 p= .001		

Table 2

PSYCHOLOGICAL CORRELATES OF THE FINAL COMPETITION MARK

N= 42 R= .88 R2= .77 p= .001

I. APTITUDE TEST SCORES

No.	Test symbol	Predictor variables	Pearson correlation coefficients	Significance level p.	Beta weights
1.	GI-V	Verbal intelligence	.64	.001	.417
2.	GI-T	General intelligence	.48	.001	-.112
3.	GVA-3	Logical sentence arrangement	.48	.001	.229
4.	GVA-5	"Decoding" foreign language	.38	.005	.344

II. Personality test scores

5.	FPI-E	Extraversion	.50	.001	.318
6.	EPQ-P	Psychotism (tough-mindedness)	.41	.005	.253
7.	FPI-FD 9	Open nature	.39	.01	.325
8.	FPI -NI	Nervous	.34.	.02	.212
9.	R-NP	Need persistence	.34	.02	.146
10	EPQ-C	C scale from Eysenck	.29	.05	-.403

III. APPRAISAL PSYCHOLOGIST MARK

11.	MIP	Mark for intellectual potential	.49	.001	-.483
12.	PEM	Psychological examination mean	.38	.01	.491
		CONSTANT - 37.791			

In order to calculate the predictive mark for criterion (PMC), the following general relationship is used:

$$PMC = K + \Sigma (Pi \times \beta i)$$

where Pi= predictive test scores (measured in T distributive mark); βi=beta weights; N= number of predictors; K= constant value

Table 3

PSYCHOLOGICAL CORRELATES OF BASIC POLITICAL-MILITARY TRAINING MARK

N= 42 R= .80 R^2 = .64 P= .001

I. APTITUDE TEST SCORES

No.	Test symbol	Predictor variables	Pearson correlation coefficients	Significance level p	Beta weights β
1.	GI-V	Verbal intelligence	.44	.005	.398
2.	GVA-1	Synonimous word ability	.44	.005	.225
3.	DA	Distributive attention	.36	.02	.156
4.	AVG-5	"Decoding" foreign language	.36	.02	.260
5.	GI-T	General intelligence	.33	.02	-483
6.	EPQ-P	Psychotism (tough-mindedness)	.56		.289
7.	R-NP	Need persistence	.45		.325
8.	FPI-E	Extraversion	.37		.208
9.	R-ED	Ego defense	-.34		.121
10.	T-CR	Communicat. rate	.30		.202
		CONSTANT - 34.820			

Table 4

PSYCHOLOGICAL CORRELATES OF THE SPECIALTY TRAINING MARK

N=42 R=.76 R^2 = .58 P=.001

I. APTITUDE TEST SCORES

No	Test symbol	Predictor variables	Pearson correlation coefficients r	Significance level p	Beta weights β
1.	GVA-3	Logical sentence arrangement	.36	.01	.123
2.	GVA-T	General verbal ability	.31	.05	-2.498
		II. PERSONALITY TEST SCORES			
3.	FPI-E	Extraversion	.37		
4.	FPI-N1	Nervous	.37	.01	.150
5.	MBTI-F	Feeling	.37	.05	-.104
6.	PQ-14F-C_4	Conscentious-ness	.36	.02	.125
7.	MBTI-T	Thinking	-.32	.05	-.245
8.	PQ-14F-P_2	Psychotism (tough-mindedness)	.30	.05	.207
		III. APPRAISAL PSYCHOLOGIST MARKS			
9.	AM	Average mark	.37	.01	-2.498
10.	MIP	Mark for intellectual potential	.33	.05	1590
11.	MP	Mark for personality	.30	.05	1.826

CONSTANT - 29.715

Table 5.

PSYCHOLOGICAL CORRELATES OF FOREIGN LANGUAGE MARK
N=42 R= .76 R^2 = .58 P= .001

No.	Test symbol	Predictor variables	Pearson correlation coefficients	Significance levels p	Beta weight β
1.	GI-V	Verbal intelligence	.50	.005	.440
2.	GVA-4	Meaning of proverbs	.42	.005	.122
3.	GVA-T	General verbal ability	.36	.02	-.309
4.	GVA-3	Logical sentence arrangement	.34	.02	.289
5.	GVA-2	Finding common word ending	.28	.05	.251
II. PERSONALITY TEST SCORES					
6.	FPI-D3	Depression	.44	.005	.44
7.	T-L	Lie scale (social desirability)	-.42	.005	-.429
8.	T-EPC	Energy power in communicat.	.37	.01	.289
III. APPRAISAL PSYCHOLOGIST MARK					
9.	MIP	Mark for intellectual potential	.37	.02	
CONSTANT 19.489					

Conclusion of the validation study was that 3 general and specific (intellectual performance) tests and 6 personality tests have an essential contribution to prediction of success for officers - candidates participating in the competition for becoming military diplomat representatives of Romanian Armed Forces abroad.

An increase of validity and informative value of personality factors compared to the aptitude factors in the prediction of success for this military personnel category is evident. We also recorded this phenomenon during other validation studies (2). In the reference on the subject law level (from .15 to .20) predictive validation values were reported for personality tests (3).

There are civilian studies indicating increased validity indicators for personality tests (questionnaire and projective types) for leader positions. This is why we believe that personality tests' usefulness in officer selection may be much greater than average values for other occupations suggest.

The final battery obtained as result of validation study decreases period of the psychological exam and therefore it saves time, is more operational, and efficiency of prediction for success of officers - candidates participating in the competition for becoming military diplomatic representatives inreased.

Validation study has provided the grounds for transition in the context of the psychological exam, from decision-making strategy of composite clinical type (frequently used for military personnel selection today) to a composite psychometric strategy reuniting and combining, according to well-defined rules such as multiple regression equation, data collected based on estimation and test-information. This requires more complex actions. Comparative research results indicate the latter strategy superiority (5).

During our research, the composite psychometric strategy application in the selection decision-making process was accomplished by calculating prediction indicators for the 4 criteria of success in competition for candidate officers.

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PSYCHOSOCIAL CLIMATE SURVEY METHODOLOGY

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ABSTRACT

The paper presents application of comprehensive set of activities contained in psychosocial climate survey in the military.

Surveying unit psychosocial climate implies assessment, as well as maintenance and corrective activities oriented to some psycho-social factors within the military (e. g. personal psychological status, satisfaction with working conditions, interpersonal relationships, trust in commanders etc). Although primarily subjective in nature, these factors determine efficiency and activities outcome, which in the case of the military means combat readiness. A special issue in such a context are parameters concerning the command.

Psychosocial climate survey in units of the Armed Forces of the Republic of Croatia is conducted periodically and using standardized methodology. Statistical analysis of the survey provides insight into the overall situation, tendencies and possible radical changes, and standardized reports are made to the responsibles. Should critical changes be discerned, a corrective action plan is studied, which often requires additional psychosocial climate assessment measures in order to detect specific problems and their causes.

Based on results obtained a detailed analysis and report to the respective commander are made, pointing to specific elements in psychosocial climate in certain units, and proposing guidelines for improvement.

The reporting as described aims to enable the respective command to undertake measures within his responsibility, for instance enhanced and directed supervision over unit functioning, which can result in personnel and other organizational changes.

Military psychologist will undertake steps in his area of work, which usually include different counselling and educational activities (either group or individual), such as intensive theoretical and practical instruction in social perception and communication and psychological techniques of self-help.

This paper describes a process of the kind developed with a reconnaissance unit, where the command's intervention and a three-day psychological workshop helped to enhance psychological resistance and improved social skills.

The paper also discusses elements evaluating the effect of activities undertaken. Specific psychological training is followed by evaluation poll on the satisfaction of workshop attendees with their contribution and the usefulness of the training for their personal and professional development. Also, standardized indicators of psychological combat readiness obtained prior to and following the training are compared, with the emphasis on indicators of satisfaction with interpersonal relationships, on indicators of individual professional qualification and self-confidence, as well as on indicators of trust in commanders. If necessary, directed survey is conducted adjusted to specific conditions that called for the the intervention. Finally, different indicators serve to survey changes in formal and informal unit - command communication.

Systematic survey of psychological combat readiness of individuals, units and commands and subsequent reporting to superiors on the results to ensure appropriate corrective or maintenance steps makes one of principal military psychological assignments in the Armed Forces of the Republic of Croatia.

Experience has shown general, global measures (such as prevention of incidents, maintaining or enhancing motivation and psychological combat readiness) unsatisfactory, and has recommended differential approach towards individuals and groups - depending upon the problems themselves, their sources and on specific elements of psychosocial climate in a group (whether unit or command).

In the 1.st Army Corps Command, survey of psychological combat readiness and of psychosocial climate has become a regular practice over the last 3 years, and is conducted through 4 stages:

1. Periodical administration of standardized Questionnaires of psychological combat readiness survey - the Questionnaires are administered semiannually at the Armed Forces level and on a stratified sample of minimally 10% personnel per unit examined.

The Psychological Combat Readiness Questionnaire is administered to determine psychological combat readiness in Armed Forces units. Respondents assess their satisfaction (with food, accomodation, pay etc), trainedness, information available on current issues, trust in commanders, concern (e.g. for personal or family but also wider problems), discipline and togetherness in their units on 5-point scales.

The KLIS Questionnaire is used to measure psychosocial climate at senior command levels (i.e. Army corps command), with respondents rating the competence of their respective commands, togetherness, interpersonal relationships, self-actualization opportunities, discipline, satisfaction and effectiveness of stimulation and reward measures). Two more scales have been added to the questionnaire to assess trainedness and burnout syndrome. Both Questionnaires, it should be noted, are administered anonymously.

The results obtained are reported to the commanders of the units surveyed, and forwarded to their respective superior units or corps commands; the findings are interpreted and maintenance or improvement measures are proposed. In the 1. Army Corps, staff officers and commanders of the units of the Corps attend the results analysis session to suggest more specified proposals for their respective domains and in accordance with specific goals and objective possibilities (in terms of means and personnel available), to decide on implementable and optimal measures.

2. In units where deviation from desired condition is detected, or abrupt decline in assessment compared to previous survey, complementary target assesment measures are administered. In instances of deteriorated satisfaction with working conditions, it can be dealt with through target supervision by the respective command, which will, based on their own findings, draft specific troubleshooting measures. Should the problem consist in impaired interpersonal relationships or trust in command, a follow-up survey is conducted by military psychologist, who will tailor the instruments and the approach to the issue. The follow-up survey usually consists in sociometry, Professional Stress Questionnaire, as well as a poll containing items on stress-coping strategies, working motivation, communication style (implying horizontal and vertical communication) and satisfaction with stimulation and disciplinary measures implemented.

Sociometric Questionnaire involves the attraction and antagonism test in the respective group by the criteria of authority, mutual trust in war and other high-risk situations, bonding defined as non-formal socializing at work, professional competence, effectiveness and exchange of information critical for task execution or personal professional status.

Professional Stress Questionnaire (composed by the Croatian military psychologist 1lt. Boris Hudina) contains 3 subscales derived through factor analysis of the results from the first administration (May/June 1998) as follows; **burnout syndrome, personal organizedness** (personal planning and working time organization, task distribution), **working atmosphere and conditions** (physical conditions, equipment condition, interpersonal relationships and communication style, availability of information needed for task execution and their quality and of feedback from the superiors, role and task clarity and the like). The intensity of professional

stress is assessed on 4-point scales as follows: "no stress", "moderate stress", "severe stress" and "stress calling for professional help".

In some instances standardized measures of war psychotrauma are administered too, mostly USTBI-M and LASC-01, as most of the troops are Homeland Defence War veterans, and a certain degree of chronic psychological disturbances has to be reckoned with, which not necessarily threaten professional functioning (and in view of time elapse may not be associated with the original war trauma), but may interfere with interpersonal relationships (e.g irritability, paranoid occurences, withdrawal etc).

As the additional measures are not conducted anonymously (especially sociometric measures), the openness problem is addressed to by informing the respondents of confidentiality of individual data and their accessibility (through encryption/coding) to psychologist only, whereas commanders are presented group data and reports on the overall state of interpersonal relationships in the unit.

Surveys cover entire small units and commands of larger units. The command and control system being the factor most directly affecting psychosocial climate and motivation of the entire unit, and can also compensate for stressors and risk factors at all subordinate levels.

3. Improvement measures: it is generally accepted that however well-concieved, measures will have no effect if implemented by one sole branch of the Armed Forces, but should rather make a teamwork effort. For instance, measures implemented by military psychologists, along with being furnished material and technical support, should be included into operational planning, orders and instructions; also essential is co-work and information exchange with the medical service, security, human resources and departments in charge of creating, planning, and execution of training, and the presence of target units and command staff is mandatory.

In this stage psychologist only act as measure proposers (measures such as enhanced supervision by superior command or relevant services, specific disciplinary or stimulative measures, proposals for task teams) or evaluators of measures effects. Psychologists' active participation includes training and counselling of commanders, groups or individuals e.g. on effective communication styles, management, decision-making, dealing with people, effective stress-coping strategies, self-help techniques and psychological condition regulation (through isometric exercises, breathing exercises, creative visualisation etc.), and possibly individual psychodiagnostic and counselling approach.

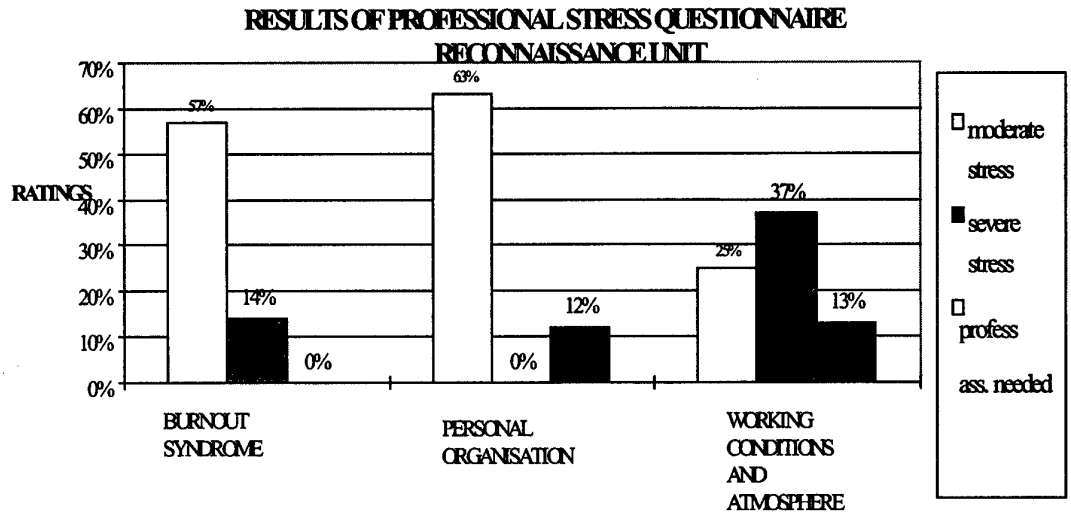
4. Evaluation of measures implemented is conducted based on results of surveys of psychological combat readiness, but can also include sociometric follow-ups and opinion polls following a training cycle or another event. Measure effectiveness is also evinced through the findings by other services of the Armed Forces, which also implies the need for inter-service and inter-level co-work and information exchange (e.g. statistical findings on frequency and type of incidents, disciplinary measures, training and exercises outcome etc.).

SURVEY OF PSYCHOSOCIAL CLIMATE IN A RECONNAISSANCE UNIT

Intervention in the reconnaissance unit covered 100 % of unit personnel, in all 4 stages of evaluation and intervention in psychosocial climate factors and thereby makes a typical, integral approach in survey of psychosocial climate in the Armed Forces units.

Psychological combat readiness findings in the given unit in June 1999 revealed impaired interpersonal relationships, especially vertical (evinced in declined togetherness and trust in unit commander), accompanied by poor satisfaction and information, which were seen as a natural result.

In July 1999 a follow-up ensued, detecting specific problems and their sources, but also the existing positive effects of psychosocial climate in the unit, based on which corrective measures were devised. Professional Stress Questionnaire and sociometric test findings were found the most useful.



Symptoms of professional stress related to burnout (14% had stress), working conditions and atmosphere (35% had stress, 13% showed stress symptoms calling for professional help), and some respondents reported personal organization problems (12% with symptoms calling for professional help).

Sociometric test revealed tensed interpersonal relationships, frustrated individuals, unsatisfactory mutual trust and antagonized commander, but also threw light on two potential leader and star personalities (by the criteria of authority and competence). The assessment was that improved communication and cooperation between the two and incitements towards greater initiative could help restore the unit situation.

The report to the unit commander recommended supervision, with an emphasis on the command and control system, and a three-day psychological workshop for the entire unit, which was feasible in view of the size of the unit.

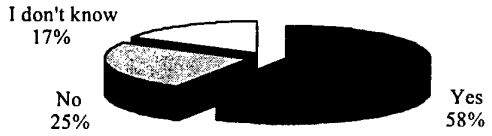
Command supervision led to organizational and personnel changes, and the workshop was conducted in February 2000 in camp setting, by 3 military psychologists as moderators.

The topics addressed in the workshop were "Social perception", "Problem solving and decision making process" and "Effective stress-coping strategies". The workshop aimed to draw attention to the actual interpersonal situation, facilitate non-formal contacts; to bring out positive aspects and possibilities in one's personal life and unit life; to warn about existing ignorance of context, different expectations, stereotypes and biases blocking the communication and affecting the decision-making process, and, finally, to end the process, incite future positive relationships and togetherness. As the workshop was concieved with as little formal and theoretical portion as possible, which was only included in the discussion following the exercises, which included role playing, self-perception and self-regulation of psychological condition (breathing exercises, calibration exercises and creative visualisation exercises.

The workshop was concluded with an anonymous evaluation poll, with respondents evaluating the benefit of the seminar for their personal development, the content, the atmosphere and organisation of the seminar on a 5-point scale. Furthermore, the respondents were also asked to state what aspect of the seminar they liked or disliked the most, whether they intended to bring changes into their behaviour and what changes would that be. All elements of the workshop were averagely rated above 4, with the atmosphere rated the best (=4,67).

PSYCHOLOGICAL WORKSHOP FOR THE REC. UNIT PERSONNEL AND COMMANDERS

Response to question: "Will this seminar bring changes into your behaviour?"



58% of respondents reported considering changing their behaviour, mostly in terms of introducing breathing exercises into their everyday practice, as well as devoting more attention to their co-workers, and working towards better unit atmosphere (as reflected in statements: "I'll think more about my acts and try to avoid biases", "I'll be more open towards my co-workers" etc.), and a more positive approach to problem solving. 17% of respondents reported uncertainty about modifying their behaviour, and the remaining 25 % declined any modifications whatsoever, convinced as most of them were that recommended strategies had been part of their behaviour.

PSYCHOLOGICAL WORKSHOP FOR COMMANDERS AND RECONNAISSANCE UNIT PERSONNEL

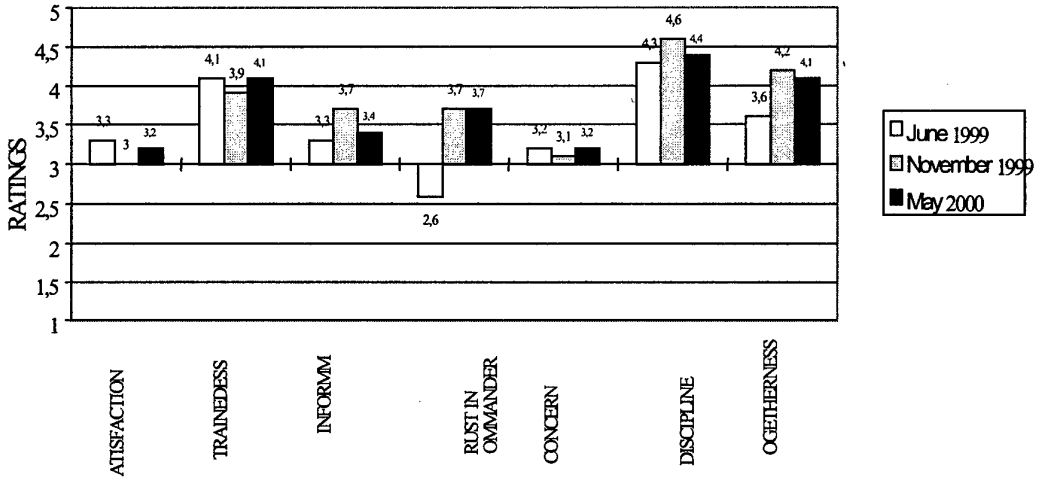
Answer to the item: "Are you going to modify your behaviour following the seminar?"

Not sure	17%
I don't think so	25%
Yes	25%

What the attendees appreciated in the workshop the most were the open discussion in a relaxed non-formal surrounding, exchange of points of view and learning of how the others viewed them, participation in different activities and demonstration of relaxation techniques. Remarks were addressed to some organisational details (e.g. poor heating in the workshop premises), but the general opinion was that the workshop should have even lasted longer, and that future programs of the kind would be welcome.

RESULTS OF PSYCHOLOGICAL COMBAT READINESS OVER A 1-YEAR PERIOD

PSYCHOL. COMBAT READINESS SURVEY RESULTS OVER A 1-YEAR PERIOD



Psychological combat readiness survey administered in November 1999 and May 2000 revealed sharp rise in togetherness and particularly in trust in commanders. However, as improved results had been found even prior to the workshop, the improvement was probably a result of inspection and personnel changes, whereas the military psychological service has been credited with maintaining the satisfactory situation (following the command intervention and prior to working closely with the unit conflicts re-occured, as evidenced in follow-up rounds and reports from the unit. The efforts resulted in improved formal and non-formal communication and trust in military psychologists, evidenced through openness and seeking psychologists for help and cooperation, which ensures better conditions for the job in the unit in future.

PROBLEMS ENCOUNTERED AND GUIDELINES FOR FUTURE WORK

The most frequently encountered methodological problem was respondent anonymity in follow-up (targeted) surveys of psychosocial climate and the value of results obtained. Namely, only an anonymous survey (that is the identity of the respondents known to the psychologist only) guaranteed frank answers, as otherwise respondents would fear their answer would affect their position. On the other hand, what is the use of results if they are not reported to commanders to intervene themselves. As noted previously, the best results were those of corrective measures implemented coordinately by psychologists and the command.

In addition, even with respondents' identity coded, most commanders will try to figure their answers out, especially about the star and anti-star status. In other words, sociometric survey results often are used to test and/or prove commander's assumptions concerning interpersonal relationships in the unit.

In recent surveys (April 2000) this problem was tackled by recomposing the questionnaire to contain only positive selection, by highlighting that only the psychologist and commander will have the insight into the results, and by re-phrasing the items and asking the respondents to state their preferences rather than assessments. Thus, with the "professional competence" criterion :"Rather than assess the competence level of your co-workers, please cite

the name of the colleague you would readily turn to for advice", which along with professional competence, also reflects other characteristics of the person (readiness to help, teaching skill etc.), for the respective item in the questionnaire: "While carrying out your duty you encountered a difficulty calling for additional knowledge and information, who are you going to turn to for help?"

However, in this way we lost some critical data, primarily on the anti-star personalities, the nature of relationship among the "star" personalities (cooperation or rivalry?) and of relationships among the subgroups; next, we were unable to discern the isolated from the rejected individuals. However, this compromise approach turned out as least harmful. It has also opened the way to psychologist intervention through working on psychosocial climate elements and made it possible to test hypotheses on possible negative points through workshops.

Next steps will be to improve evaluation of measures undertaken. Namely, although the "general attack" on problems proved the best, post-evaluation of the most and the least effective intervention is difficult. Besides reaching the desired effect, which is critical in practical terms, the contribution of individual measures administered should be determined to define optimal and cost-effective approach to survey, prevention and intervention into psychosocial climate.

PORTUGUESE MILITARY IN VOLUNTEER AND CONTRACT SITUATIONS: REASONS WHY THEY QUIT

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Applied Psychology Army Centre

ABSTRACT

Nowadays, one of the major challenges of the Portuguese Army is motivate young people to the ranks, through both volunteer and contract situations These forms of serving the nation were created to fulfill the needs in specific areas of the human resources that couldn't be only satisfied by career military. However, reality shows that the number of volunteer candidates is far from being reasonable, and that the number of those who quit is very significant as well. The aim of this study was to analyse the main reasons why these military quit, through a questionnaire applied to a sample of 716 individuals in these conditions. Our findings indicate that the decision to quit is not influenced by factors that intrinsically characterise the military way of life, but rather by specific contractual conditions An enlargement of the discussion over this theme is required, so that solutions to improve volunteer and contract- situations can be found.

1. INTRODUCTION

Volunteer and contract situations were created in 1992, with the objective of fulfilling the needs in specific areas of human resources of the Armed Forces that couldn't be satisfied only by military career personnel. In these cases, the soldiers have to spend one year in a volunteer situation, after which they pass to a contract regime, where they can stay for a period of eight years, maximum.

However, reality shows that the number of volunteer candidates is far from being reasonable, and that the number of those who quit is very significant as well. This fact is becoming a serious problem to the Portuguese Army, which is aggravated by the end of the conscript military service.

It was in this context that this investigation was developed, with the objective of characterising the soldiers that quit in a military and socio-byographic perspective, and of identifying the main reasons why they make that decision. We hope that this study will help the decision making process, so that volunteer and contract regimes can be seen as a more attractive option to the young Portuguese people, and that it helps to improve the working conditions of the ones which are already in the Army.

The following hypothesis were developed to study this theme:

1. The motivations which lead the candidates to adhere to these kinds of regimes are both symbolic and material;
2. Soldiers quit mainly due to material related reasons, even without the loss of the symbolic motivation;
3. If military life offers similar or better working conditions and career options than other jobs, then soldiers will prefer volunteer and contract regimes, based on their symbolic motives.

2. METHOD

Subjects:

The subjects of this investigation were all the soldiers that broke their contracts after already being in that situation, or even before they started their military service. After the application process, we received questionnaires from 74 Army units from all over the country, and we considered in this investigation the data collected in 716 valid questionnaires. Some of the questionnaires were not considered because they referred to situations not directly related to this study (e.g. cases in which the contract regime ends, and there isn't a real breaking of contract), or extraordinary cases (e.g. the case of a respondent who claimed he hadn't broken his contract).

Measures:

In order to confirm or invalidate the suggested hypothesis, a questionnaire was conceived, to give us information in different areas, such as: the initial motivation of the soldier to present his candidature; the motives why he quitted; the characterization of the new job in favour of which he quits; evaluation of the ideal conditions under which he would accept not to break his contract; Institution incentives evaluation; decision factors that influenced his rescission.

Underlining the confidentiality of the questionnaire, some identification data was assessed. There was also the concern of explaining the objective of the investigation, and the orientating hypothesis, in a way of motivating the respondents to its proper answering.

Procedure:

The application process started with the Dispatch of His Excellency the General AGE dated the 21st of December of 1998. We considered all the questionnaires that arrived to the Army Psychology Center until the end of September 1999.

A copy of the questionnaire was distributed to all Army Units in Portugal, Madeira and Azores, who passed them to the soldiers who presented their contract rescission.

Some instructions were given concerning some aspects of the application phase:

a) The place of the application, namely to verify if it fulfils parameters of illumination and comfort;

b) To inform the soldiers of the questionnaire objective, so as to motivate them to its proper filling;
c) To read the instructions in a calm and objective way, responding to all doubts that might appear;
d) To thank the collaboration of the respondents and register the difficulties that aroused in the application process.

The opened questions were the target of a content analysis.

3. RESULTS

Sample characteristics

The results found correspond to a population that is mostly of the male gender (88% of the respondents). The soldiers who quit belong mainly to the Private rank (92,5%), while there is only a small number that belongs to the Sergeants (6,4%) and Officers (1,1%) rank.

Analysing the *timing* of the quitting decision, we see that the percentage of individuals that broke their contracts while they were in the volunteer period (45,1%) is very similar to the percentage of those who broke it in the contract period (43,6%). Thus, time seems to acquire some importance in the decision of quitting: by comparing the period of time that corresponds to each case (one year in the first case, eight in the second), it is obvious that the initial period is critical in that decision. The first year in which there is a contractual link to the military institution seems to constitute itself as an experimental period, during which the soldier tests his continuation in service as he tries to adapt to a new way of living.

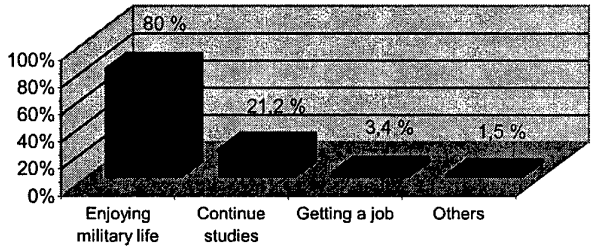
There were also some individuals that broke their contracts even before they started serving in the Army (11,3%).

In what civil state is concerned, most part of those who quit are single (88,5%), while the rest of them are married (10,6%) or divorced (0,4%). Most of them are between 21 and 25 years of age (55,2%), or between 18 and 20 (33,3%). Only a small part has more than 25 years of age (11,4%).

3.1. Initial Motivation to present the candidature to the volunteer situation:

As we can observe in Figure 1, the main reason to present the candidature to the volunteer situation is enjoying military life, followed by the possibility of continuing the studies. Getting a job is also referred, but in a much smaller proportion. In this question, respondents could choose more than one alternative, because the same person could have more than one reason to candidate to the volunteer situation.

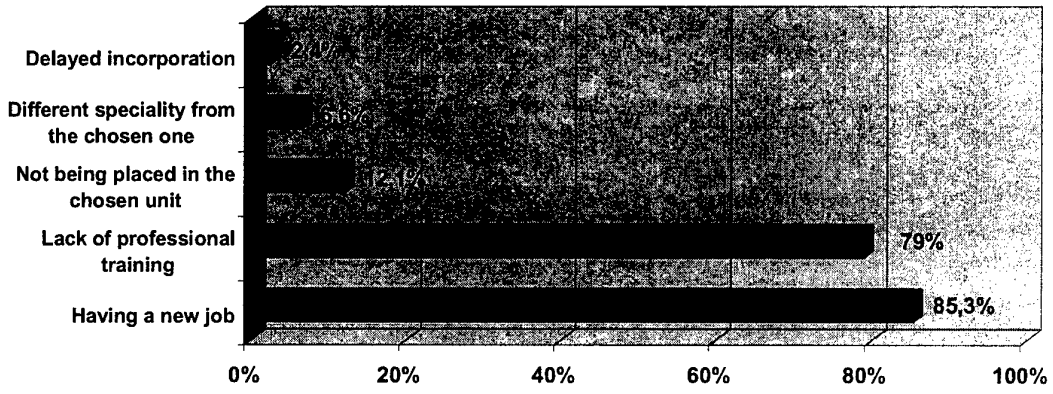
Figure 1 - Initial motivation to volunteer



3.2. Quitting Motives

The major motives to quit are related with obtaining a new job and with the lack of qualified training.

Figure 2 – Quitting motives



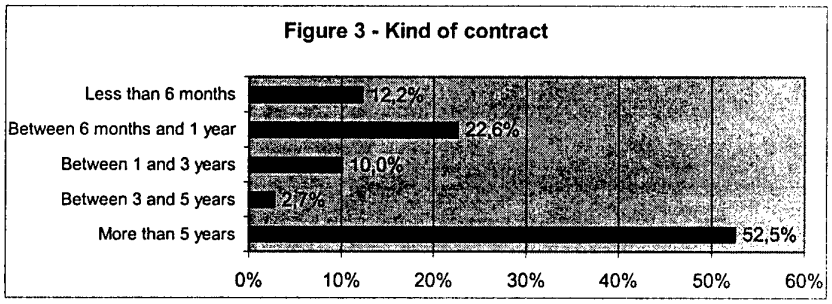
The possibility of not staying in the chosen unit, or having a different specialty from the chosen one are other factors for quitting, though less referred.

3.3. New job characterization

The respondents who said that their motivation to quit was job related, were asked to characterize the new job in the following dimensions:

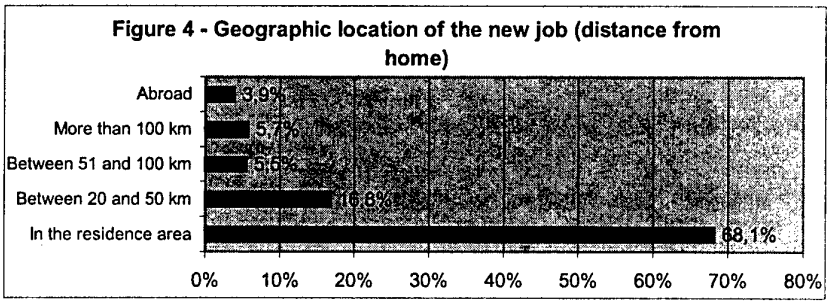
a) Kind of contract:

Most part of the respondents seem to have opted for quitting in favour of a job that guaranteed them more stability (52,5% say that their new contract has a duration of more than five years).



b) Geographic location

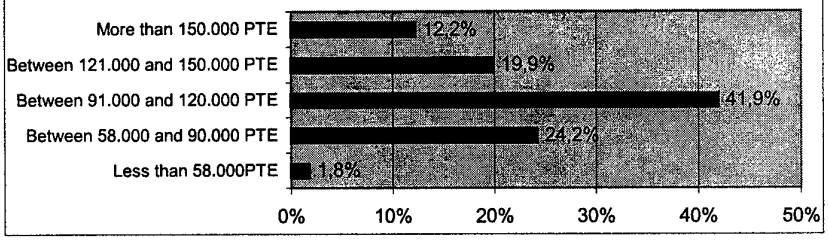
The new jobs, in favour of which the respondents quit military life, are located mainly in the residential area of each individual. The distance between the place where they live and the workplace seems to have some influence in that decision: the further the distance, smaller the number of those who quit.



c) Wages

Most of those who quit, will earn wages in the new job between 91 and 120 thousand escudos (41,9%), which is more than most part of them earns in military service (we must remember that most of those who quit belong to the private category).

Figure 5 - wages (in PTE - portuguese escudos)



Analysing the data in a global perspective, we see that 74% of those who quit will earn in their new job superior wages. Therefore, this seems to be a fundamental factor in terms of the decision of quitting.

3.4. Motivating conditions

There is a majority of respondents who claim they wouldn't have quitted and they would have accepted to continue, if there were certain conditions that were different, namely:

- contract length: 83,1% wouldn't have quitted if contract length reached 20 years
- 71% would't have quitted if they had the possibility of choosing contract duration: instead of a contract on a year basis, they seem to prefer a contract whose duration would be defined from the start. This would permit a more efficient management of their professional careers, which is very important in a financial and psychological standpoint
- wages: 79,4% consider that the ideal would be a wage between 75 and 150 thousand escudos
- professional training or possibility to continue their studies: 79,4% wouldn't have quitted if these were less difficult to attain

3.5. Incentives Evaluation

a) Known Incentives before service

The incentives referred to as being known before beginning to serve in the Army, seem to be mainly those which are publicised by the Institution: the possibility of continuing their studies (41,7%), the possibility of entering military life (33,2%), receiving qualified training (27,9%), or the possibility of candidature to other kinds of contests (e.g. the police forces)(19,4%).

b) Other incentives considered necessary:

Other incentives that could be created, according to the respondents, would be: better wages (58,2%), increasing professional formation (31,9%), better working conditions (in what concerns nourishment, accommodation or military uniforms)(14,8%), and increasing contract duration (13,7%).

3.6. Summary of decision factors

Figure 6 - Factors that influenced the quitting decision in an important way

Not being a long term job	89,2%
Low wages	83%
Not being sure of receiving qualified training	79%
Having obtained a new job	78,5%
Duration limit in contract situation of 8 years	70,4%

Figure 7 - Factors that had small importance in the quitting decision

The possibility of being nominated to Peacekeeping Operations	65,1%
Military discipline	60,7%
Working shifts 24 hours long	57,8%
Family influence	56%
Weekend shifts	54,3%
The possibility of being placed away from home	49%

4. DISCUSSION

In the first place, this investigation shows that a sometimes-referred crisis in the military vocation amongst Portuguese youth has no sustainability, neither the difficulties in the acceptation of a very particular way of living. It shows, on the other hand, the urgent need of implementation of measures to fight an event that is aggravating, mainly in the private rank, because they are the ones that most quit, and are also the rank that the Army lacks most.

Consequently, one of the hypothesis initially advanced regarding quitting reasons, seems to confirm: the one that refers to these reasons as being more of a material rather than of a symbolic nature. We can observe that, in its majority, the respondents enjoyed military life when they joined the Army, and if they had different conditions they wouldn't have quitted.

By comparing the motives of the initial candidature to the volunteer situation with the motives that led to the rescission, we can see that the reason "getting a job" is only important when it comes to quitting. It is possible that derived from the experience they had inside the Army, they don't consider it to be a satisfying job. In what concerns the initial motivation, other factors assume a much greater importance (such as enjoying military life), while material reasons are secondary.

This investigation shows that the decision of quitting was not significantly influenced by factors of an intrinsic military nature, such as having to work in shifts of 24 hours, including weekends, the possibility of being placed away from home, or even military discipline.

In what is related to the new job in which they engage, the most important factors in terms of the quitting decision, are the possibility of having a career and the wages they earn.

The possibility of obtaining qualified training or the possibility to continue their studies, assume a primordial importance as a motive for continuing in military life, because they can guarantee better chances of getting a job at a civilian level. Although these incentives are publicised by the Institution as a way to attract volunteers, they don't seem to be having a practical application, according to the number of respondents who refer these factors as very important in what concerns the decision of quitting.

It's not at all surprising that this is a motive of great dissatisfaction, because it was something that had been promised before they begun their service, but that afterwards became very difficult to attain.

This investigation confirms the initial hypothesis, in the sense that the respondents maintain, in general, the symbolic motives that link them to the military life. However, they quit due to the fact of not having a long-term job and being less paid than other jobs that they arranged.

We can say that no matter how well organized a campaign to attract volunteers, it will only be successful if it has a strong basis of support and it is based upon firm and realistic incentives, instead of upon promises that are difficult to attain. Any marketing campaign which doesn't take these facts in consideration, can reach lots of interested people and even make them enter the Institution, but won't prevent an undetermined amount of them to quit right after that.

Problems at recruitment level can impose the necessity of lowering the standards of admission, and can have also negative consequences in terms of the admission of less qualified personnel.

Once the new status of the volunteer and contract regimes is presently in discussion at the Ministry of National Defence level, this investigation and its conclusions assume an even greater relevance. We hope that the empirically validated knowledge obtained through this investigation will contribute to the decision-making at that level.

This national wide investigation contributes with important information to help in the definition of a recruitment policy that is realistic. Its urgent to put it into practice to avoid more serious moral and financial costs, but also to avoid effects on the national and international reputation of the Portuguese Army, which must not only be maintained but improved, through the qualification of our soldiers.

PSYCHOLOGICAL SUPPORT AND VENTILATION PROGRAMME FOR CROATIAN ARMY MINE-CLEARING PERSONNEL

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Ministry of Defence of the Republic of Croatia

ABSTRACT

Once war conflicts are over, military power and equipment are put under the international military supervision. Mines, however, remain, as decades-long humanitarian, economical and psychological threat. The mission of clearing mines, the "heritage" of the 20 th century makes a critical obligation within human rights protection and peace preservation initiatives.

Mines disable or kill 26 000 people worldwide annually, mostly civilians, with children victims accounting for half the figure. According to the data of UN Disarmament Institute in Geneva (UNIDIR), in the 1945 - 1995 period over 400 000 million landmines were laid throughout the world. Croatia is presently among the ten most critical countries in this regard. In the Homeland Defence War almost half of the territory of the Republic of Croatia was the scene of fighting, and over about 13 000 kms^2 as many as 3 million anti-armor and anti-personnel mines were laid, and over million different artillery shells fired. Since the liberation operations in 1995 the lion's share of heaviest amount of mine-clearing task was carried out by Croatian Armed Forces and police specialists using the equipment at disposal and improvised. The job was gradually taken over by civilian organizations. Recent estimates suspect that still some 1 - 1,2 million mines are found in the 4 500 kms^2 area, which, as planned, is not to be cleared completely before the year 2010.

Psychological determinants, especially the stressful nature of mine clearing job, demand psychological involvement. In the 1996 Department of Military Psychology of the Armed Forces of the Republic of Croatia authored the Psychological Support and Ventilation Programme. The programme was primarily intended for mine-clearing personnel, but it allows modifications which render it usable with other military specialties. So, a version of the programme is conducted with the Air Force (pilot) population. Initially, the programme contained psychological prepairing of mine-clearing personnel for deployment, ventilation and relaxation, processing of traumatical incidents, individual and family counselling, assessment of psychological preparedness of mine-clearing teams as well as the proposal of optimization measures. The program was applied with each group separately, whereas the wives of the teams members were approached collectively. Systematic evaluation of the program's effectiveness and psychological efficiency makes an integral part of the Programme.

This poster demonstrates the Programme as applied in 1996 and 1997, incorporated into the active vacation organized for the Armed Forces mine-clearing personnel deployed in the Danubian basin. Also shown are the results of the program efficiency evaluation.

1. Introduction

The truce installed, or conflict terminated, military assets are withdrawn into military installations and placed under control of international military bodies. However, mines and other explosive devices remain in the fields as a long-term threat with humanitarian, economical and psychological repercussions. Therefore, military operations undertaken in the oncoming millenium primarily aimed at preserving peace and protection of human rights will probably include dealing with this hazardous legacy of XX century. Clearing of contaminated surfaces is condition of any (re)construction incentive in the war areas, of farming work, of the economic recovery and of return of the exiled.

Mines toll reaches some 26 000 casualties annually, civilians mostly, with children accounting for half the figure. The data of the United Nations Institute in Geneva (UNIDIR) show that from 1940-1995 over 400 million land mines were laid worldwide that remain as a decades-long threat.

Croatia is presently among the 10 most mine-contaminated countries in the world. During the Homeland Defence War almost half of its territory was caught by the war flame, the mines were laid over some 13 000 kms^2 and over 1 000 000 shells were fired. Since the liberation, the critical job in mine-clearing has been done by Croatian Armed Forces members and special force troops who cleared airports, barracks, industrial facilities and removed and destroyed unexploded devices, investing their skills, improvised equipment and patriotism into the task. Civilian companies now increasingly take over the job. The latest estimates say 1,200 000 mines are still left over the contaminated area of some 4,500 kms^2 that, as estimated, will not be cleared through before 2010.

Mine clearing job is extremely stressful and dangerous. Acute stress that does not resolve but goes on to accumulate over time will lead to chronic stress. Several members of a mine-clearing team displaying symptoms of chronic stress undermine the efficiency of the entire team, which in turn causes additional stress. Acute stress symptoms manifest as an initial state of confusion, restricted attention, misapprehension of external stimuli and disorientation, succeeded by avoiding stressful situations, social withdrawal or exaggerated distress, and, not uncommon, panic anxiety symptoms (increased heart rate, sweating etc.). Working in stressful situations, engineers may in time display accumulated acute stress and even symptoms of chronic stress, manifested primarily in disrupted professional and social functioning. Each deployment and expecting the return is highly stressful for engineers' families too, and can disrupt family life, that in its turn affects psychological operational readiness for the mine-clearing job.

2. PSYCHOLOGICAL VENTILATION AND SUPPORT PROGRAM

In 1996, the Department of Military Psychology of the Public Affairs and Information Division of the Croatian Ministry of Defence devised a Programme of Psychological Ventilation and support, which is administered by military psychologists. Although originally intended for Mine-clearing teams, the Programme can be modified to be implemented with other segments of Croatian Armed Forces, particularly special units. Thus, a version of the Program is successfully administered with pilots of the Croatian Air Force.

Prevention and preparation make a critical condition of psychological stability and combat readiness of mine clearing teams. However, implementation of all prevention measures available still does not guarantee total protection from unpredicted stress situations that remain unresolved and lead to chronic stage. Some individuals may experience extremely traumatic situations such as wounding, witnessing to their peers' and friends' death. In such cases debriefing procedure is compulsory.

Along with techniques administered following traumatic situations on the site, mine engineers are also assisted during the organised holiday programmes, which include systematical psychological ventilation and support and building on psychological preparation.

All of that helps enhance togetherness as a vital factor of combat and operational readiness, as engineers work together in a team, spend free time and go on holiday together as a team - the opportunity to exchange their experiences and problems.

2.1. Program goals

1) providing systematic psychological support and ventilation for mine clearing teams
2) practicing the techniques and methods for better psychological and working functioning and psychological readiness and safety at work
3) debriefing - following incidents and other traumatic events
4) individual and family counselling - when needed
5) filing information on psychological readiness of mine clearing teams and their members
6) reports to the respective authority containing assesment of situation and proposed measures of improving psychological status and readiness. By means of a special psychological questionnaire data are collected on psychological condition of each mine team separately, whereby successive information on the situation in two years of Program implementation were obtained.
7) systematic evaluation of the Programme effectiveness and psychologists' efficiency makes an integral part of it For that purpose, group leaders presented their own suggestions and observations on the program applied. Effectiveness and satisfaction with the Programme was evaluated anonymously by all groups through a special questionnaire.
8) long-term habituation of group leaders and mine engineers to psychological consulting in the mine clearing context

2.2 Activities of the Programme

The Programme contains psychological prepairing and support to practice at-hand, practice in stress or traumatic events and the segment conducted during organised holiday.

2.2.1. At-hand activities

1. PSYCHOLOGICAL PREPARATION FOR MINE CLEARING TASKS

- on a monthly basis
- training for all members of mine-clearing squads on psychological techniques to be applied while working in minefields
- training for all commanders
- evaluation of situation in mine-clearing teams
- ventilation (when needed)

2. PSYCHOLOGICAL TECHNIQUES APPLICABLE WHILE MINE-CLEARING

- parcelling out the minefield (before getting on to mine clearing, each engineer parcels out lanes to clear guided by natural orientation points)
- autosuggestion (engineers take several breaths and apply autosuggestion: "I'm perfectly cool and collected", the procedure is also applied with each orientation point chosen)
- looking back (each time an engineer feels tired and loosing concentration he should stop working, look back on the lane cleared and apply autosuggestion before going on clearing - in order to enhance self-confidence)

3. DEBRIEFING

- following traumatic or stressful incidents in minefields
- version - modified CISD
- timing - 24-48 hs following a wounding or death accident in a minefield
- administered by trained military psychologist team

2.2.2. Activities scheduled concurrently with psychological and physical fitness preparation of mine-clearing teams

This part of psychological prepairing and ventilation is included into 7-day active holiday programme organised annually, and conducted by 2 military psychologists per a 7-day shift, who worked supervised.

These activities encompassed the following:

1) BRIEFING WITH CHIEFS OF MINE-CLEARING TEAMS
   winning chiefs' interest for the program
   assessment of teams' needs
   presenting the Programme's objectives

2) MINE CLEARING TEAMS VENTILATION GROUPS
   groups - mine clearing members team members working together
   two 45-min meetings per group

Meeting 1:
*introduction
*trust and confidence
*assessment of situation in the teams through observation and questionnaire
*ventilation

Meeting 2:
*informal training on suggested topics
*encouraging appropriate stress-coping styles
*evaluation of the Programme through a questionnaire
*detecting individuals who need additional treatment

Suggested topics:
-PTSD and acute stress reactions symptoms
-acute stress reactions symptoms normalisation
-stress and stress-coping styles
-alcohol abuse
-burn-out
-trust and cohesion
-trust in commanders
-concentration problems
-work organisation
-family and social functioning difficulties

3. MINE CLEARING TEAMS RELAXATION GROUPS
- succeed ventilation groups; duration 20 minutes
- ISOMETRIC EXERICISES - **purpose**: relaxation, warming-up, physical fitness
- BREATHING EXERCISES - natural abdominal breathing exercises,
- abdominal breathing and visualisation; intrusive thoughts repelling; **purpose**: relaxation and tension reducing
- BODY AWARENESS EXERCISES -body awareness exercises + exercises for arousing sensations (warm, cold, weight); **purpose**: relaxation, tension reducing
- CREATIVE VISUALISATION - different types of visualisation aimed at getting relaxation, tension reducing, feeling of safety and at boosting up energy
- AUTOSUGGESTION - breathing exercise + autosuggestion of calmness (or other autosuggestion)
- ACUPRESSURE - acupressure scheme of points for facilitating waking-up (to take in the morning) and vigilance (to be applied in the while working)

4. VENTILATION GROUPS FOR ENGINEERS' WIVES
- family stability and support - vital
- 2x 45-min sessions
- secondary traumatisation assessment
- non-formal training on stress, stress-coping styles (getting through husband's absence from home), changes in the family (switched roles)

- highlighting the importance of family support
- improving communication within the family

5. RELAXATION GROUPS FOR ENGINEERS' WIVES
   - 2x20-min sessions
   - breathing exercises
   - creative visualisation

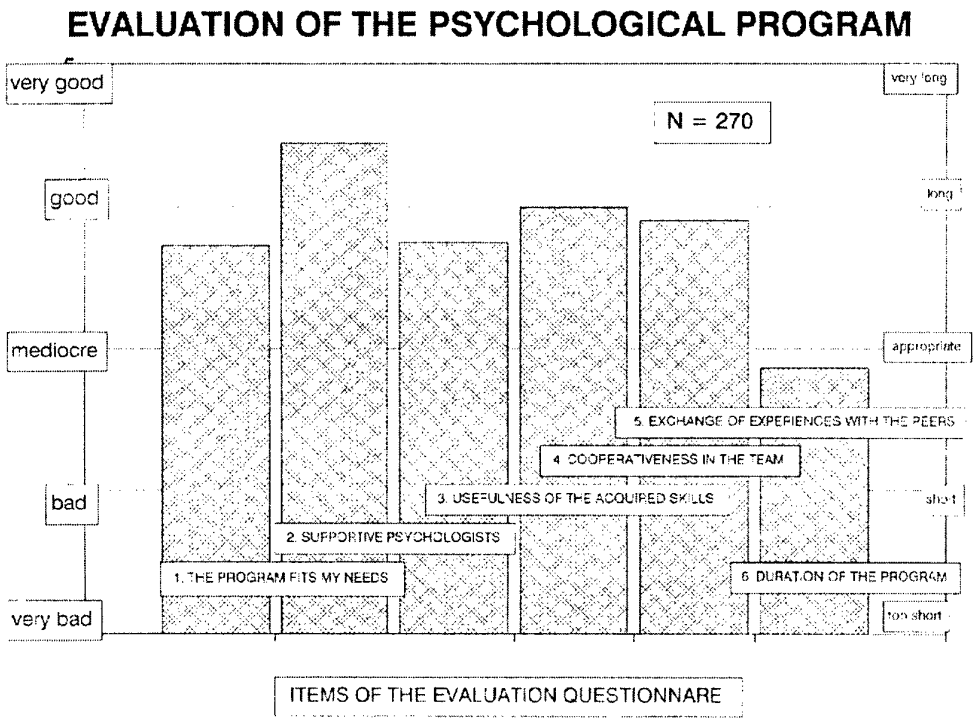
6. INDIVIDUAL AND FAMILY COUNSELLING
   - based on consultation and support techniques
   - participation - optional
   - major psychological disturbances cases reported to the unit psychologist

7. CLOSING MEETING WITH CHIEFS OF MINE CLEARING TEAMS
   - evaluation of the Programme
   - team chief's suggestion for improving the Programme

2.3. Programme evaluation

Evaluation of the Programme's effectiveness is conducted by means of evaluation questionnaires, psychologists' as well as supervisors' notes. Evaluation results were used as guidelines for further development of the Programme.

Figure 1: The effects of the Programme



2.4. Debriefing for Programme conductors

As the Programme's application showed to be a very stressful and exhausting task for military psychologists, who were working in shifts, burnout prevention meetings were also conducted, scheduled following each shift and upon completion of the Programme.

2. 5. Reports on the situation in mine-clearing teams

Following each holiday program a report on the situation in mine-clearing teams was sent to the Mine-clearing Command.

The reports covered:

- evaluation of the observed stress-coping styles, trauma and burnout extent
- evaluation of field work organisation
- suggestions for improving the situation in the teams

2.6. Programme application material

The Department of Military Psychology composed a questionnaire on stressfulness of the job, on burnout symptoms level, evaluation questionnaire, and the Manual of assistance to mine clearing personnel to instruct military psychologists on implementation of the Programme. A flyer was composed for the engineers and for their families too, containing information on stress, stress-coping strategies, burnout and coping strategies, relaxation techniques.

3. CONCLUSION

Psychological determinants, and especially the stressful nature of mine clearing job itself, call for psychologist engagement in nearly all segments. Psychological selection and classification, psychological preparation and training of mine engineers, as well as advice for as rational and safe organisation as possible have largely contributed to reducing the impact of the stressful job and to enhancing safety of engineers lives and thus provide a significant support to them even in hard environments.

Quality psychological preparation and prevention of incidents makes a highly important condition of psychological stability and readiness of mine clearing teams. Prevention should include instruction of mine engineers on stress, stressors, symptoms of stress, burnout syndrome as well as on stress-coping strategies and techniques. Tailored relaxation techniques, oculomotor and psychomotor coordination exercises, attention sustaining techniques are expected to help improve concentration and readiness and safety in the mine clearing job. Discussion of real problem situations and suggestions for a better working organisation and interpersonal relationships is another useful step.

Motivation, efficiency and safety in the job are tightly associated with the trust in team chief and the cohesion level.

PSYCHOLOGIST'S LIMITS AS A MEMBER OF INTERNATIONAL MISSION

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ABSTRACT

Army of Czech republic sent field hospital in the AFOR mission in Albania and than to Turkey as a help for earthquake victims in 1999. Paper concerns the specific circumstances in these two missions from the point of view of psychiatrist/psychologist. Concrete experiences of psychologist in maintenance of care of victims and hospital personnel, physicians, nurses and logistic personnel, are discussed. In the second part of the paper the influence of help group of specialists, psychologists, psychotherapists are described. Especially the difference between direct attendance of specialist in the mission versus the help of the group coming from out is discussed. Possibilities and limits of external group timing of arrival, the constitution of the team, possibilities of cooperation, the plus and the minuses of this method.

In April 1999 the Czech Republic Government decided to deploy the Czech Army Military Hospital as the part of the humanitarian aid to Albania, where the large amount of refugees from Kosovo was accumulated. There was also the intention of the health care providing for the NATO forces in case of the ground operation in Kosovo. On the May 3, 1999 the hospital left and immediately after arrival it started to deploy in order to begin with its regular activities as soon as possible.

The first part of this report should be the sort of self-reflection of the psychologist – psychiatrist, who have participated in this mission within the framework of the hospital. At those days he was 40 years old, married and worked as a psychiatrist in the Central Military Hospital of the Czech Army, during years 1994 – 95 he was engaged in foreign mission in Croatian *Krajina* as a general practitioner and psychiatrist. During that mission there were two offensives of the Croatian Army which finally conquered the territory. He worked both – with the soldiers and with the local inhabitants. He is erudite psychotherapist, fond of acute crisis intervention, psychosomatic problems, post-trauma and is religious. He suffers from so-called missionary syndrome (strong desire for next mission deployment). His superior showed a negative attitude towards the missions and interdicted his deployment to Bosnia mission in 1998. In mid-April 1998 he was offered a deployment to Albania with the 6th Field Hospital (FH) – the answer had to be immediate. His wife was initially strictly against, but after a few days she finally gave up - there was a need of money for the reconstruction of the apartment. His motivation for the deployment was a bit different: "Something is going to happen – action, travelling, career acceleration, coming off the stereotype, self-appreciation improvement, financial reward – something what makes sense and I am going to be there. A quick arrangement of all matters, sense of quilt towards the family and mother (psychiatrist's father had died a month and half ago after long illness). After arrival large enthusiasm for work and help to refugees, shock from an Albanian heat and mess. Sort of disillusion from the physicians' status in the hospital – the commander of the hospital – a physician asserted the equality of all in the point of the manual work – it means, that physicians had to do all the work as the others so as not to be upon the others, commander effort to eliminate the elitism, independence and possible resistance of the doctors and nurses against him. Problematic relationship between commander and his medicine deputy, who had aspired to his position beforehand, the effort of both of them to enforce one's own will. The commander was more pragmatic, realistic, better skilled organizer and also surgeon, but, on the other hand he was also harsher and kept people at a distance. An effort to be involved to expertise work as soon as possible, doubts: "Will I be able to cope with everything?" The psychiatrist was acting as psychiatrist, psychologist and general practitioner all in all. The first problems of the psychic type (psychosomatic annoyances) occur at the FH staff. They are reported mainly by female – nurses. The psychiatrist longs to leave the FH camp, which is situated in Albanian army barracks behind the high wall. He manages the connection with his wife and mother through the payphone – which leads to a great alleviation. The commander issues the order #1 in which he prohibits alcohol, drug consumption, sexual intercourses between field hospital staff members themselves and also between them and foreigners – the reality is a bit different: There is an alcohol drunk in the evenings (but without excesses), some have sex. Hospital starts to work, psychiatrist comes out - to the refugees camp – a lot of work in a terrible heat, translating Czech – English – Albanian - Russian- (there are also Lithuanian physicians and nurses) – Serb - (some Kosovians speak Serb), in the evenings reports writing and work with the FH staff (some members see him secretly with various problems – pains, nervousness, anger eruptions, irritation, tiredness, insomnia. Work in the FH is regularly changed by missions in camps, in "free time" work with the FH staff. Time passes quickly, but the psychiatrist sometimes envies the others, that after a duty they can do whatever they would like to. He introduces the principles of psychological work with the FH staff to the commander, he suggest their realization. It is a very meaningful dialog and discussion. The commander accepts and supports his suggestions. A latent revolt of the physicians against the commander – they disagree with their equalization with the rest of the FH staff. The session is held, it is very open, the commander explains and advocates his attitudes – it comes to the open abreaction, the commander compromise a bit, the physicians stop concerning so much. Sequential partitioning of the staff to the smaller fractions, each group finds a meeting place. Some of them start to separate, to look for a solitude, to suffer from so called "submarine disease". Conflicts, complaints about food, hassles about dress discipline –

the commander caught a big group drinking and singing in Naafti with Italians. These people were punished, the psychiatrist got a task to speak with them individually – about alcoholism and find out if they were not alcoholics. He did not like it and used these dialogues with people for their personality analysis and for discussions about best way of adaptation to field hospital. This was very useful for contacts establishment and for improving his reputation. He starts going to Tirana to coordinative consultations of WHO, NATO, NGO and Albanian authorities for coordination and optimalisation of the psycho – social aid to Kosovian refugees, great disillusion from Albanian authorities, WHO and some NGO. Big hassle among NGO – who is going to provide the refugees and the patients with care, the offensive of the Muslim countries against the Christian ones. At the same time he recognizes Albania, graces from the commander for leaving the camp, the organizing of the trips to the seaside and also half-illegal tours round the Albania starts – passion from the beauty of Albania. At the same time, the FH is donated with the mobile phones, that provides very good connection with the Czech Republic, and the telephone extension to the camp is established. It is very good, the psychiatrist phones with mother, wife, daughters, friends every day – it helps him a lot. Some members of the staff call all the time – they start early in the morning and finish late in the evening – their families are tired of them. A big discussion is held about vacations, the commander does not want to allow them, the situation is not clear (there might be a ground offensive against Yugoslavia, and there is a big amount of patients in the hospital – Kosovians, Albanians and NATO soldiers). But people want them, the quarrels happen – the vacations are permitted at the end, the psychiatrist belongs to the so-called commander's camp. That is why he gets one of the last terms – the deputy commander, who is in charge of this is in opposition to the commander – it is very different term from the expected one – the psychiatrist is fed up with it, because he is looking forward to the visiting home and he needs to disperse his father's ash. The staff is divided into two groups – one of them want to continue with the mission, the others want to finish. It leads to the arguments between them. The psychiatrist meditates every morning, the mission itself, work with the clients, the contact relaxations exhaust him, he needs to refresh the powers. At the same time he settles down a lot of problems. Contacts with the psychologists from NGO working in the camps and other NATO field hospitals, sometimes the feeling about lacks in psychotherapeutic work with the refugees. The preparation of the inspection of the supervising psychological team from the Czech Republic which includes the chief-clinical psychologist of the Czech Army, the psychologist working with the teams from crisis intervention centers and the military padre. When everything is prepared, it breaks down with the competency hassles inside the Czech Army. The big disillusion of the psychiatrist, the commander's suspicion whether it was not against the law. The teams are sent to the north to assure the transports of the refugees from the overcrowded north to relatively void south – the psychiatrist is sent there as the team leader. The accommodation is in the camp of Italian "mountain huntsmen" who are also under Czech medical care – beautiful mountains, river, only a few patients, terrible heat. Serbia capitulates, the massive rush of the Kosovians to the Kosovo, the direction turns over, huge crowds of the refugees (by the train) to the north, they change to buses by us. The American voluntary organizations appear there – their members are deployed only for a few days and then the get (as the reward) the vacation in the nearest cultivated country and then they return to the USA. They are relatively well equipped, well trained, though mid-staff outbalances the doctors, (from the point of view of quantity). They accept us, they behave themselves well, but they push us to the "side-track". We are delegated to the role of an ambulance (including the resuscitation), the very first day there are two cases of resuscitation. There are argument within the team between one dominant nurse and one Lithuanian physician – this is brought to the base-camp. This situation is utilized by the deputy commander – the part of the team is withdrawn to the base and the second part stays. The psychiatrist's stay in the Italian camp is being constantly prolonged. Establishment of many nice friendships with the Italians. The Czech TV broadcasting is established in the base-camp through the satellite – it is considered as very good. After return to the FH, the psychiatrist is being sent to many negotiations to AFOR headquarters, including the one at the local Medical Corps. In fact he could be considered the liaison officer of the FH, at the same time he is ordered to the 24-hour duties at the AFOR headquarters sick-room. Very good relationships to the British, Germans, Americans, but mostly with WO and privates, the officers keep polite, but wary attitude. The "submarine disease" in camp-tents proceeds. By the same time he is in charge of soldiers' leisure time

spending, organizing the trips and English language courses. Elaboration of the first FH sociogram and its introducing to the commander and the staff. Some lower commanders are afraid of being familiarized with it. When the psychiatrist is about to leave for the vacation, the earthquake in Turkey happens, the vacations are aborted and part of the FH urgently moves to Turkey. Big thrill and enthusiasm on one side, but on the other hand some reject to go leave and want to stay, because part of the FH should assure the AFOR squads. In the end, the psychiatrist comes home for several days – dispersion of his father's ash, withal he assures many official matters for the hospital – part of the Ministry of Defense show positive attitude towards the hospital, some of them show the negative and amused one. Through the telephone the agreement about ordering the psychiatrist to the second group predestinated for the transfer to Turkey, he wants to go there, thinks that he is going to have a lot of work there, after return from the Czech Republic he is transferred, big welcome upon the arrival, the shock from the greatness of the 14-milion Istanbul and from the view on it even in the night. Consternation from the totally destroyed Golczik, and, at the same time, the strong desire for seeing the earthquake, exciting and also unpleasant frisson from the first quakes. A big difference of local authorities comparing to the Albanian ones – the Turkish officials are laborious, willing, the common Turkish people as well, touching experiences when the muezzins from surrounding mosques assemble for the prayer in the morning, work with the Turks inflicted by the earthquake in the camps, hospitals, as a psychiatrist and also general practitioner, huge amount of people suffering from PTSD, the "psychotherapy spot" is founded, good cooperation with the commander as well as with the newly established deputy commander and chief-nurse. Three-day work rhythm – one day in hospital, one in camp, on day off. The possibility of the trips to the surroundings, including Istanbul, Bursa, Ankara, Troya during the free days. The psychiatrist is named for the organizer of these tours – there are tremendous experiences – the connection of antics, Byzantinism, Islam. It comes to better recognition of Islam. At the same time the "shopping fever" at some individuals. Very touching experience from the visit to the cemetery upon Izmit, where the whole families (the earthquake victims) are buried – beautiful views to the surrounding hills at the same time. The tension in the camp proceeds, mainly doubts about future of the field hospital and the staff after return to the CR, heats during the days, during the nights chill in the tents, cooperation with the Turkish physicians and psychologists, interpreters, very warm friendships. In the Turkish military hospital the huge experience from the concert of "Yanichars", modern art exhibitions located in old temples and severities. One doctor and friend of the psychiatrist brought by Turkish ambulance after he, in his leisure time, after an enormous work effort, dealt in the street money to the Turks, because he regretted them. The information against him was lodged to the commander by one staff member. The commander ordered his repatriation for the indiscipline. A dispute between the psychiatrist and the commander about this, the psychiatrist was criticized for not reporting this doctor to the commander, because he should have abused alcohol in the free time. The psychiatrist objected that he would lose the confidence, the psychiatrist was punished with two-week-long prohibition to leave the camp. During this prohibition very interesting (almost mystic) experiences, when the camp was left by everybody but the duty, after a week very effective discussion between the psychiatrist and the commander, the prohibition was retracted. Big experience from seeing the quakes of 6.1 grades of Richter's scale during the shopping in Izmit with the following people's panic and attending people directly in the street – very interesting experience – only 2 (the psychiatrist and one nurse who had an experience from the mission) out of 8 staff members were willing to provide the nursing directly in the street, the others wanted to return to the field hospital base. From 30 people attended up to 1 hour after the quakes were more than 50 percent acute reactions to the stress. Laboring of the second sociogram and its introducing to the people. Arrival of the third group of the field hospital members with many psychiatrist's friends. The new earthquake in Ducza, the group of surgeons is promptly sent there. The psychiatrist operates as the general practitioner together with the rescuers through the newly damaged town. He takes part in night victims searching, the demoniac apocalyptic experience, and at the same time impression of the chaos in organization, nursing the victims directly in the street. The field hospital operation time was about to finish, increasing of nervousness, problems and collisions, including the psychiatrist, but in his case the conflicts are mainly with people who are generally conflictful, it leads to interesting heart-talks and negative emotions abreaction. Many mostly partnership problems came up – solved with the

staff members and their home-folks. Culmination of the tension and conflicts during putting down the hospital and leaving home through Istanbul. After homecoming, many staff members went to Bosnia and Kosovo again, in the nearest possible term. The psychiatrist was told by his superior, that his expertness fell down during the mission. His first mission – in Croatia – was about raised self-confidence and the omnipotence feelings, this second one – Turkey-Albanian – about humility then.

Upon the analysis of the above-mentioned text the question rises up: "Should the psychologist go to the mission as its member, or should he (or the team of psychologists) come there in regular or irregular intervals (according to the need) and perform the psychological research and help occasionally. The answer is not definite. If the psychologist is one of the mission members, he knows the participants better (it works also in the opposite direction), they believe him more and in regular life he can answer on their problems better, he is permanently present and is able to afflict anywhere and whenever, he is familiar with the mission background, states of mind, wishes, resentments, the sociological atmosphere in the camp, relationships between people, he can informally respond and nobody should necessarily know, that he, in effect, provides the psychotherapy. He has the quick access to the commander and is able to intervene better. But, on the other hand, as every other mission participant he is liable to the dynamics of the mission member psychic state development, he is pegged down by the social relations in the mission, he has different attitudes to different people in the mission, which can negatively or positively influence his work. In the positive way – he understands the problems better, in the negative one – he is tired, exhausted, has antipathetic attitudes or positive feelings to every individual mission member, his sight is defaced and his arrangements could be wrong. He can be neurotised, suffer from PT, which also negatively influences his work. But if he faces up to it, the influence on his work can be positive then. If the psychologist comes from "outside", he must be well-trained for this kind of work, has to be mission-experienced (but how to get them, when psychologist-from-outside-system is established), he must be of such personal background and development stage to be able to be accepted by "the mission" in a very short time, get their confidence and be well familiar with such knowledge from psychology and sociology of the small groups and their dynamics to be able to reveal the relationships in these groups and to deal with them in order to provide the positive influence and not to fragmentize them. At the same time he must demean himself in the way which prevents him from being seen (by the mission members) as a bumble from the ministry, who has came to sift them and to give them the advice "how it should be done". The positive fact consists in the not being consumpted by the mission, not having defaced sight, not being involved into social relationships inside the mission. On the other hand, he could not be accepted by the missioners (we have seen even the aggression against one tactless psychologist – sociologist), he is deployed for a short time, so he might not have necessarily right insight to the relationships and by his wrong interventions based on these incorrect insights he can complicate these relationships. His perhaps correct observations, but presented in an inappropriate manner can induce the negative reaction (even the aversion) from the missionaries' point of view, there can be a fear, that the psychologists-from-outside have come in order to control something, or to make a psychologist sift with a view to repatriation. The psychological intervention may be also needed in the moment when the psychologist is not present, and he cannot be delivered there quickly (for example, in the time of war operations). It is true, that the psychotherapy can be done for example through the TV, satellite phone or walkie-talkie, but this can be performed only by a well trained and experienced expert, and , again, in some specific situations is this help deflated (targeting at the radio signal) and has its limits. The optimal solution seems to be in combining of the advantages of both upper described ways – the psychologist's attendance at the mission and a visit of the supervision team consisting from the experienced trained psychologist, the sociologist familiar with work with small groups, or a priest in the laic role, who can enrich the observation with the novel aspect. It happens that the mission members prefer him in an advice seeking, because they trust him more, while in the case of psychologist they are afraid of being sifted or possible repatriation.

COMPUTER-ASSISTED BONNARDEL'S SINUSOID FOR GROUP ADMINISTRATION WITH MINE-CLEARING PERSONNEL

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ABSTRACT

In the late 1995 psychologists of the Ministry of the Interior Medical Service were assigned the task of selecting candidates to be trained for mine-clearing duty, which involved clearing millions of mines left throughout the territory of Croatia from the Homeland Defence War.

Along with a paper-and-pencil test to cover mental abilities and personality traits, selection project proposed the use of a psychomotor abilities test encompassing oculomotor coordination and movement precision, the two factors that play the role when doing the mine clearing job. Unable to count on commercial test appliances, the alternative was co-work with electronic specialists, which indeed resulted in the development of computer-assisted Bonnardel's sinusoid for group administration.

Modern microprocessing technology has made possible a thorougly new type of Bonnardel's sinusoids applicable for strictly controlled concurrent administration with up to 20-respondent groups. New appliances have compensated classic sinusoid structural shortcomings which precluded its group administration. This, modernized version of the test enables testing the factors of oculomotor coordination and hand precision on a relatively large sample of respondents in a new and time-saving way.

Historic frame

Psychomotor abilities and human effectiveness in various fields had been correlated since some time ago, hence the research in the matter is extensive. The interest in the matter has had theoretical and especially practical reasons. A strong impetus to measurement of individual differences was contained in theoretical foundations and anthropometric laboratory founded in the second half of 19th century by Galton, the pioneer in differential psychology. Mc Keen Cattell, then assistant in Wundt's laboratory, begin the employment of laboratory reaction meter to determine individual differences. He also introduced the concept "test" (1890) related to psychological differences measurement serving to determine individual differences with possible pragmatic repercussions.

In time, appliances from experimental psychological laboratories were increasingly used in practice, and proved valuable tool in selecting candidates for different professions. Industrial advancement called for valid, reliable and sensitive testing instrument to measure practice-relevant characteristics such as accuracy, precision, voluntary hand movement steadiness. Efforts to devise objective tests for the aforementioned features yielded in a group of test appliances named "tracing tests". Before them, a procedure had been used, known as "writing movement"(Bryan, 1892), where a respondent had had to draw a line on the paper by a sharp pencil, thereby demonstrating speed and precision of movement. Steadiness and precision of movement as the basic idea was eventually concretised into appliances.

Among the earliest apparatus tests is also Bagley's test from 1901. Respondents had to draw a metal needle along the slit between two thin metal stripes distant 1 mm. The needle with electrically isolated handle was connected to the negative pole of the battery, while the stripes were connected to the positive pole. Each time the needle touched the stripes was measured on an electric counter, or was simply signalised to the testing supervisor by activation of telegraph bell. On hearing the bell, the supervisor could press the telegraph key and register the error. In the later versions of the test sensitivity were improved by means of the test containing a gradually narrowing or entirely winding slit (path) (Whipple, 1910). The test measured speed and accuracy.

Advancement in psychotechnics brought new selection procedures too. (Munsterberg, 1913). An excellent review of psychotechnical application of different test apparatuses is provided in Strien's paper (1997). Among various selection procedures were also apparatuses for psychomotor abilities, which, although gradually modified, basically employed the principles of the original tracing tests. To highlight is Moede's "zweihandprufer", or "two-hand tests", based on an idea from 1919 (Moede, 1930). By moving two handles vertical to each other, respondents would coordinately move the pencil along the dotted complex path drawn on the paper placed on a small plate, trying to make it as precisely and quickly as possible. Performance indicators were the speed and the accuracy. Moede's test was subsequently modified, for instance as Poppelreuter test, where respondents moved the mobile plate and path with two hands under a fixed pencil (1928). With Ruppe's test (1924) respondents moved the pencil across the fixed path with two levers (Moede, 1930. Bingham, 1937). These tests employ the principle of turner's lathe.

Ricossay introduced a special principle in precision measuring tests (Lesjak, 1964), with the path carved along the metal plate of the apparatus; respondents had to draw a spike of a determined width without touching path edges. A useful example of the principle is the "turner test" by Lahya, where respondents are supposed to move the

metal cone along the middle of spiral path gouged into the fixed plate, by coordinately turning small wheels on the sides of the apparatus.

Using the principle of carved path, Raymond Bonnardel devised a series of quality psychomotor abilities tests, differing from each other in the shape of the path and mechanism handling principle. Those were the bi-manual coordination tests, such as "double-maze test" (1946), the Omega test (1947), "la Grecque"test, "le Mexicain"test (1951), and the particularly interesting "Bonnardel sinusoid" – a hand precision measurement test devised in 1950. (Figure 1)

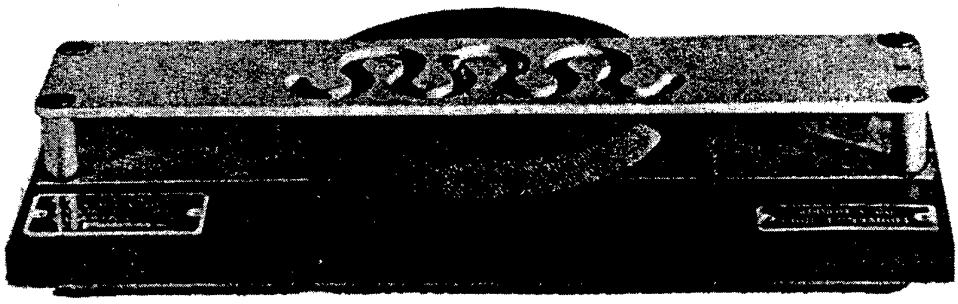


Figure 1. Bonnardel's sinusoid.

Bonnardel sinusoid consists of a metal plate with sinusoid-shaped path. The middle part of the path is 23 cms long and 5 mms wide. Under the metal plate (with carved path) there was a small wheel of insulate material with two 3-mm metal spikes. By holding the wheel with their thumbs and middle fingers, respondents are supposed to move the spikes along the path, without touching path edges. At some points they will pull the wheel against themselves, at others rotate it clock- or counter-clock-wise, which means complex hand movement. The contact of either spike with the path edge is entered as error. While other tests include one, Bonnardel's sinusoid has two spikes, therefore its sensitivity is greater. Also, unlike other oculomotor coordination tests, Bonnardel's test precludes advantage of respondents who already have taken some similar psychomotor test or a mechanical device. Correlation between scores on Bonnardel's sinusoid and tests such as Turner test, Omega test, Double-maze test range between 0.55 to 0.75.

In Croatia, psychomotor abilities tests have been employed in vocational guidance in Zagreb Institute of Crafts since 1932. Along with the aforementioned tests, some tests with original path construction were used. Closer to our days, Lesjak (1964) devised a bi-manual oculomotor coordination test called OMNARC (in Latin Omnes arcus - all arches). By coordinately moving the screws, respondents moved the metal spike along the 16.5 cm-long path of a particular shape. The main advantage of OMNARC path were its symetric sectors requiring several different coordinated hand movements on a relatively short path.

In the 1980ies Jerneić and Rohaček of the Zagreb University Psychology Department began research of basic characteristics and optimal conditions of use of Bonnardel's sinusoid. Also, a special statistic procedure was employed to compensate construction deficiencies of the original sinusoid, to determine true indicators of effect and factors affecting the scores on this test (Jerneić et. al., 1980/81; Rohaček et. al., 1981). The hardware modification of the original Bonnardel sinusoid was executed by technological standards of that time. This version of the sinusoid was familiar to a limited psychological public, and it proved useful in selection.

Psychomotor tests validity problem

Integration of psychomotor tests into the selection procedures demanded their validity tested. There had been attempts indeed to investigate psychological structure responsible for the score on those tests. Bagley (1901) for instance, detected inversion between intellectual development and efficiency on speed, calmness and movement precision tests. Bolton (1903) found intellectual development in children associated with progressing score on speed, steadiness and movement precision tests. Perin (1921) applied 17 motor tests, detecting no significant correlation to ascribe to factor of general motor abilities. He held three groups of factors having impact on tests performance:

1- factors of activity transfer from one test to another;
2- learning processes,
3- emotional factors. Based on employing simple motor tests. Muscio (1922) concludes, having found no significant correlation among simple motor tests he applied, that there is no general motor ability. He found no relationship between motor capacity and intelligence. His research is especially worthy for carrier counselling for proving that each routine performance requiring specific motor activity requires a specific motor test too. In other words, motor tests used in selection or career counselling for a job requiring motor abilities must activate the motor capacities relevant for the respective job. Farmer (1927) found slight correlations on a few sensorimotor tests, but also group factors involved in motor coordination. Akroyd (1928) investigated correlations between the performance on different motor tests involving oculomotor coordination, and found minimal correlations even between scores on related tests, which led him to conclude that selection and career counselling demand a separate psychomotor test for each specific combination of movements characteristic of a job.

Controlled and repeated studies by Earle and Gaw (1930)(Cox, 1934) on intercorrelations of scores on different motor tests led to extraction of motor factors of speed and precision determining score variance. In his earlier studies of motor activities Seashore (1940) detected precision factor and movement coordination factor, which was followed by detection of several group and specific psychomotor factors in later analyses of relationships among different motor activities.

In conclusion, selection for different jobs should include psychomotor tests measuring psychomotor capacities that determine the performance in a profession, to obtain necessary practical prognostic validity of a test.

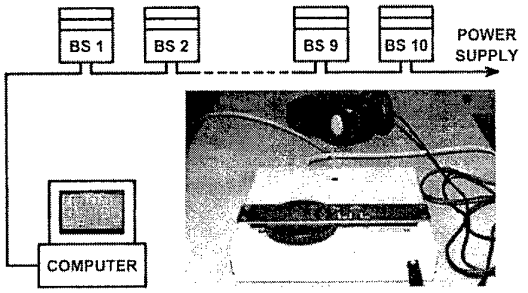
Computer-assisted Bonnardel sinusoid

In late 1995 psychologists of the Medical Service of the Ministry of the Interior were commissioned with selection of candidates for mine-clearing training and job (which consisted in clearing huge amounts of explosive devices left from Homeland War). Selection had to deal with a great number of candidates motivated by prospects of great pay and, along with paper-and-pencil tests, included psychomotor abilities tests (oculomotor coordination, hand movement precision) - the factors crucial for mine engineers while lifting minefields.

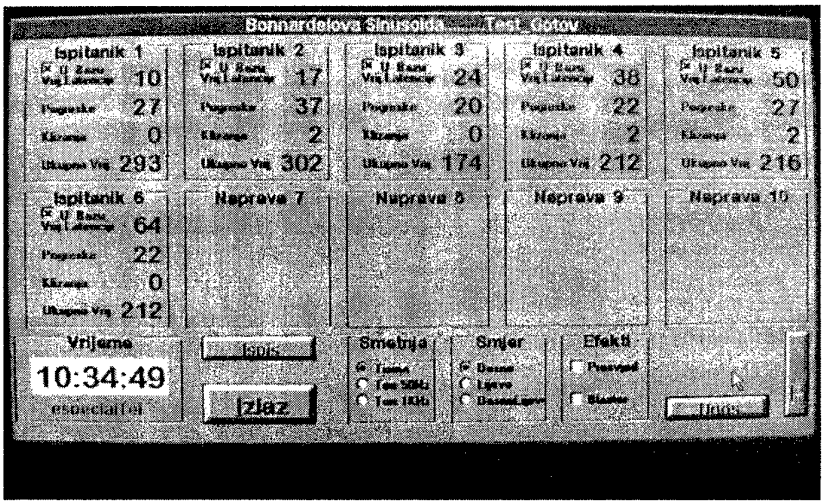
Research by Guilford and Lacey (1947) showed that a right combination of paper-and-pencil tests and psychomotor tests can magnify multiple correlation of predictors and criterion variable and thereby increase predictive validity of tests used in selection for professions where psychomotor abilities are necessary. Psychomotor testing thus became an indispensable part of selection. Psychologists had at their disposal a pair of modified Bonnardel's sinusoids with electric counter designed to the

model of the apparatuses used by Jerneić and Rohaček et. al. As the sinusoid and the procedures previously applied with student respondents in a short time turned out ineffective with mass of oculomotor coordination in adult respondents of different educational background and intellectual capacity, entirely new Bonnardel sinusoids were introduced, that were supposed to make up for constructional deficiencies of similar apparatuses and enable measurement of new parameters.

With electronic engineers of the "Telespecijal-Zagreb" company a joint project was initiated on a computer-assisted Bonnardel's sinusoid for group administration.The path on the new apparatus remained the same - the path was gouged in the plate of stainless steel, resistent to sweat, mechanical pressure and easy to clean. Under the plate it had a wheel with two steel spikes insulating material maximising the visual contrast between the wheel and spikes and the plate respectively. The start and the end was signallised magnetically, by means of sensors inheld in the apparatus. Each apparatus contained a microprocessor registering separate measure parameters and forwarded them to the computer. Sinusoids of the kind were serially linked (10 in a group), with one end connected to the computer port and the other to the power source.



The score presentation software was executed in "Visual BASIC" for Windows. Test apparatuses were again placed at the edge of table, retaining the same position with respect to respondents. With measurement going on, through the earphones respondents get alarmed of each error, that is of each contact of spike and the edge of the path.



Through the earphones they also receive acoustic interference definable in advance.

The measurements on all apparatuses completed, the scores obtained are displayed on the computer screen and registered on both the hard disk and the floppy disk.

A special computer order can provide a printout of results of measurements on individual apparatuses, be it a short printout containing data on hesitation time, number

of errors, total error time and path pursue time, or a long one, containing the time and duration of error too.

The computer-assisted Bonnardel's sinusoid has several advantages:

1) covers the main deficiencies of the previous version (inability to control the sliding along the path and the starting moment)
2) computer-assisted version enables simultaneous and controlled administration with groups of 10 (20) examinees
3) more measurement parameters registered
4) measurement possible with different kinds of interferences
5) measurement possible in different directions of path pursuing
6) time-saving observing and registering of overall behaviour of examinees during the testing
7) wide and time-saving applicability with large groups of examinees

Measurement parameters and procedure

Computer-assisted Bonnardel's sinusoid enables measurement of the following parameters -
1) hesitation time (period from starting time to first movement)
2) errors made while pursuing the path (number of spikes and path edge contacts)
3) duration of each error
4) time points of errors
5) total time spent on errors (sum of all error times)
6) total time of path pursue
7) number of slidings (errors exceeding 0.5 seconds)
8) ratio between error time and total pursue time

These parameters can be measured in tone-free environment, in 50 Hz and 1 KHz-tone environments respectively. Respondents' performance can be interferred by acoustic arousal containing emotional "charge" (some words, screams etc.). Activation of the "protest" toolbar button each time an error exceeds 0.5 seconds increases gradually the intensity of the warning signal to the unbearable point.

The movement of the wheel under the plate can be directed to the left or to the right only, combined to the right and to the left without stopping. On reaching the final point respondents receive a characteristic signal. Prior to the measurement, all apparatuses are checked out to verify they are in starting position. A respondent who starts beforehand gets eliminated by the computer and his error is registered, of which the respondent gets notified.

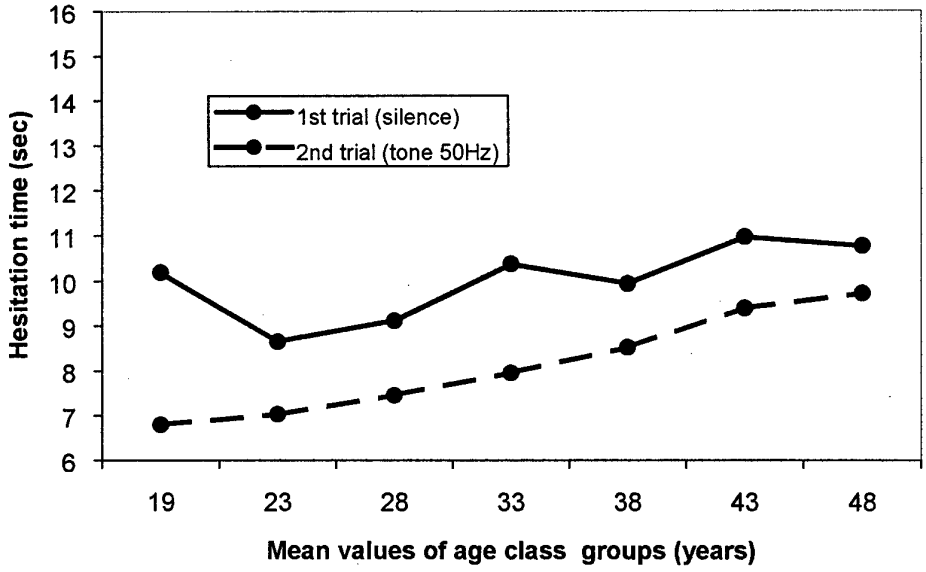
The measurement procedure consists of 3 steps:
a) all relevant bio-data are filed (name, family name, age, occupation, company as well as data on the physical aspect or present physical condition of a respondent) and the number of the apparatus is assigned to each respondent
b) next, the instructions are given and a short 70-sec exercise is administered
c) the exercise is followed by the measurement procedure during which respondents have to follow the path as quickly and accurately as possible.The pursue is first administered in calm conditions, and later with 50Hz-tone interference.

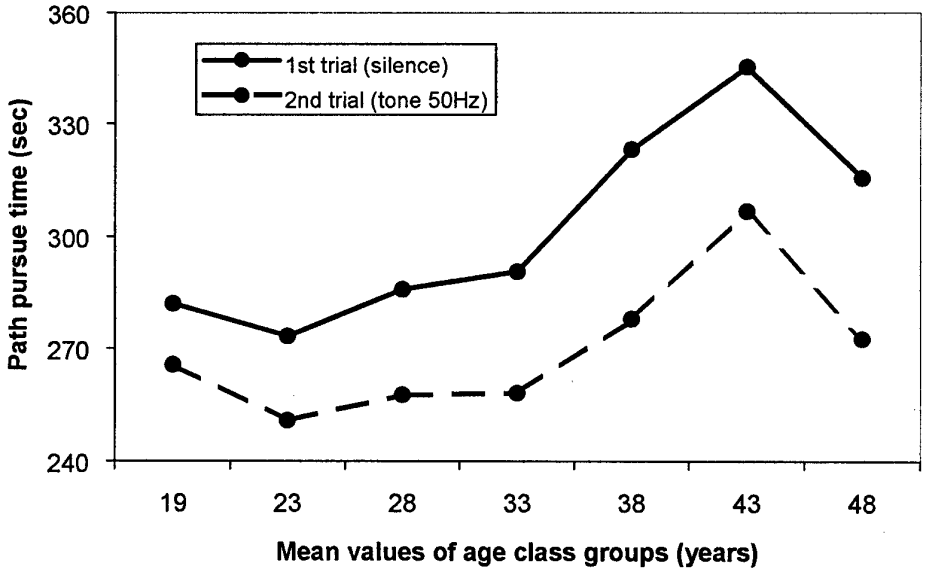
The measurement also involves observing of overall behaviour of respondents, and relevant comments are stored into respondents' files.

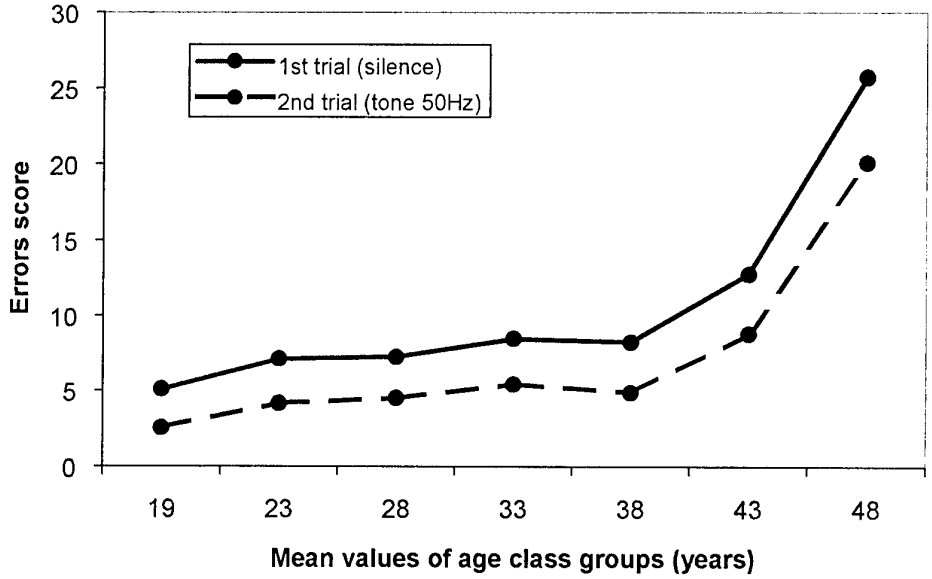
Results

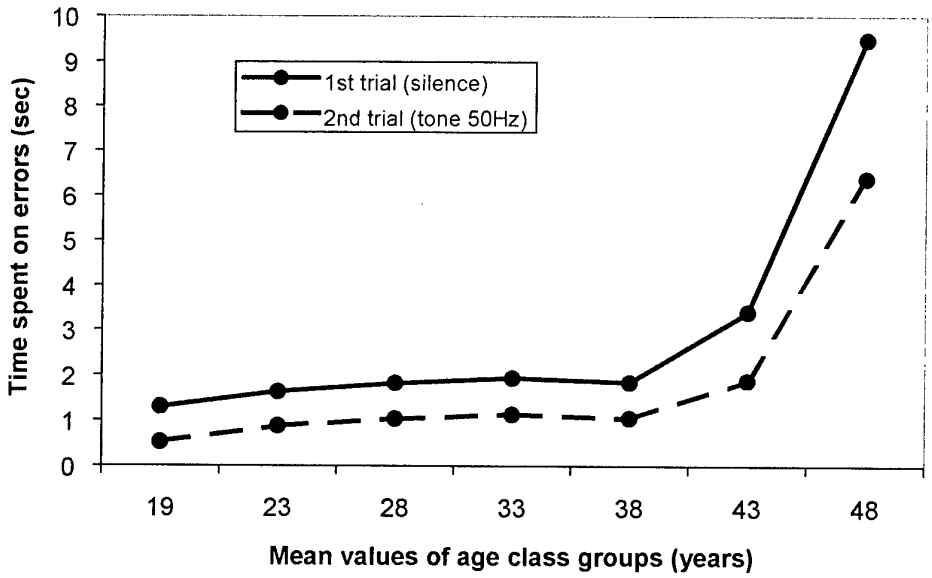
Among the many applications of Bonnardel's sinusoid the author of the paper singled out the results of his own administrations. The sample was N=1010 and was age-cross-cut. Mean values of parameter measurements from individual classes were presented on charts. For clearer changes in individual measurement parameters as a function of the age the linear interpolation procedure was used.

Figures (**Fig.4, Fig 5, Fig 6, Fig 7**) show changes in individual parameters as a function of the age.









The changes were best visible with the precision factor. Hand movement precision can be presented either through the error frequency or total duration of errors. It appears that at the age of 40 a significant decrement occurs in precision capability required in the Bonnardel's test.

As the 20-30 age range sees no statistically significant differences in main parameters, as the number of respondents in such a sample is relatively large for a measurement of the kind and as mine engineers belong to this age group, Table 1. and Table 2 contain orientation norms for the precision factor and speed factor.

Distributions of results of the speed factor and of precision factor were found asymmetric both in tone-free environment and in 50-Hz tone environment. However,

while the distribution of results of measurement of total time of path pursue approached normal distribution values, the distribution of the number of errors was positively skewed. (Fig. 9).

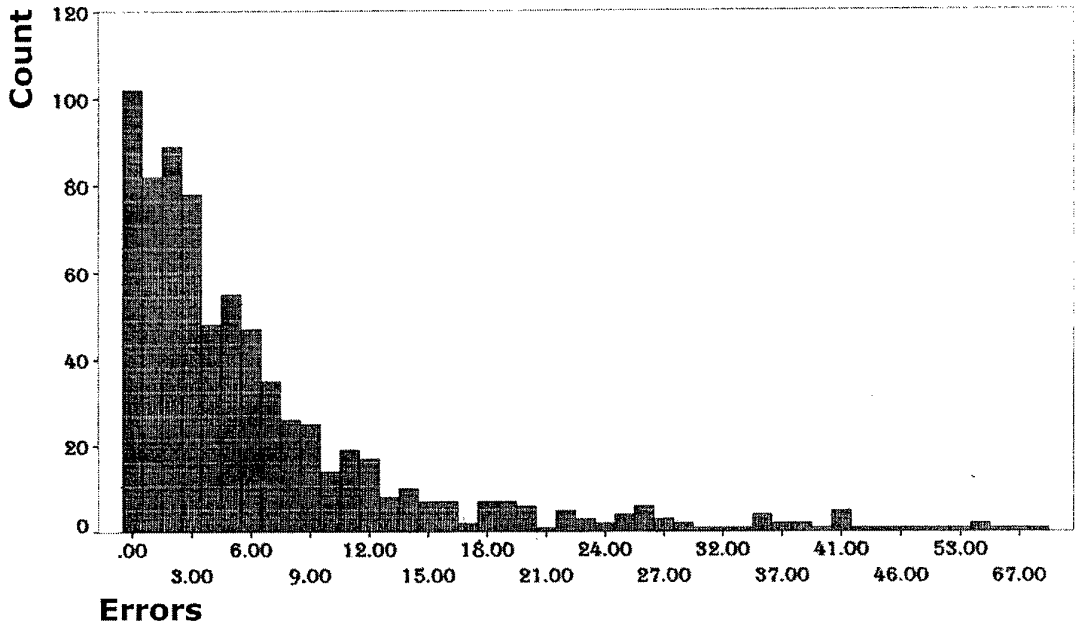


Fig. 8.: Histogram of results of measurement of total time of path pursue

Table 1 Orientational norms of precision factor for examinees in the 20 - 30 age class

AGE	N	ERRORS (silence)		ERRORS (noise)	
		M	σ	M	σ
20 – 30	745	7.02	9.60	4.16	7.70

Table 2 Orientational norms of speed factor for examinees in the 20 - 30 age class

AGE	N	PATH PURSUE TIME (sec) (silence)		PATH PURSUE TIME (sec) (noise)	
		M	σ	M	σ
20 – 30	745	277.03	103.64	253.30	85.00

Fig. 9. Frequency of individual error times

Factor analysis of our results for the tone-free situation (Varimax rotation in 4 iterations) yielded 3 factors (table 3).

Table 3. Factor saturations of individual measurement variables

Variables	Factor 1	Factor 2	Factor 3
Errors	0.920	-0.132	0.006
Time Errors	0.988	0.011	-0.008
Sliding	0.930	0.104	-0.006
Total time	-0.006	0.986	0.141
Hesit.time	-0.004	0.139	0.990

In conclusion, the variance of results of our measurements is determined by F1 (precision), F2 (speed) and F3 (not yet extracted) factors. Presumably F3 regards psychological structures related to personality aspects. The same factor structure is obtained with analyses applied with measurements in 50 Hz tone conditions.

During the measurement overall behaviour of respondents is observed, and remarks are filed into a record.

Evaluation and prognostic validity

The linear relationship between predictors and criteria in most cases is well known, whereby better performance on a predictor also guarantees performance on a criterion variable. However, the relationship between psychomotor tests as predictors and performance in actual job (criterion) is not linear, whereby a rise in predictor after reaching a certain level does not necessarily imply enhanced working performance (Petz, 1969). Also, prediction error in criterion variable is major with predicting from optimal score of predictor variable, and minor when predicting poor psychomotor test score. Furthermore, the decisive factor for performance in a job is not average or above average score, but rather not a poor score. The problem that remains is that of determining the "poor" score, as it is usually a function of strictness of selection.

Bearing in mind this principle and some known standards previously determined on Bonnardel's sinusoid on a sample of young people, we chose the "cut off point" precision and speed factors for "average" scores. In other words, a respondent is categorized as "acceptable" if his score equals or exceeds the average regardless of his chronological age, whereby older individuals who meet the criteria set with the younger population pass the selection. Raising the selection threshold would of course let in only individuals with superior psychomotor abilities, but that would result in lack of candidates for a job. The present selection criteria proved relevant in practice.

Finally, there is the crucial question on pragmatical validity of the selection applied, which is of *"a priori"* nature which is not easy to solve. There are data, however, that indirectly prove the validity of selection procedures for mine engineer job.

Croatian Mine Action Centre has data on mine engineers from Croatia and Bosnia and Herzegovina who lost their lives or got disabled. The comparison of the data of the two countries is justified, because the mines, minefield principles, terrain, war experience and educational background of mine engineers are very similar. Also, mine engineers in both countries are motivated for the job, and have been trained for it too. The only difference consists in Croatian mine engineers' obligation to pass rigorous medical and psychological selection prior to their specialist training.

Table 4 compares figures on killed and disabled engineers in Croatia from 1998 - (3 June) 2000 and in Bosnia and Herzegovina in 1999:

Table 4. Comparison of average mine-cleared surfaces per (1) engineer in Croatia and Bosnia and Herzegovina

	Croatia	Bosnia and Herzegovina
1 casualty	2.24 km^2 cleared surface	0.27 km^2 cleared surface
1 fatal	5.2 km^2 c. s.	0.62 km^2 c. s.
1 serious wounding	5.2 km^2	0.83 km^2
1 wounding	15.6 km^2	1.25 km^2

The data clearly advocates the selection procedure applied, even in case when no strict psychometric validation of predictor variables is employed.

Conclusion

The practice has shown that interconnected computer-assisted Bonnardel's sinusoids provide reliable and precise data on oculomotor coordination and hand movement precision. Psychomotor test devised as described here and computer-assisted assist psychologists in selection of large groups of respondents. Bonnardel's sinusoid as a psychomotor test appears to be a crucial component of selection and subsequent survey of psychomotor abilities of mine-engineers.

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TRAUMA SCENE: INITIATION OF THE PROCESS OF POSITIVE RESOLUTION OF TRAUMATIC EXPERIENCES IN GROUPS AND INDIVIDUALS

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ABSTRACT

The author presents his experience in assisting traumatized groups and individuals. Within the basic model of traumatic scene the author differentiates four groups of expected victims of psychological consenquences of traumatic event: directly exposed group, indirectly exposed group, wider group indirectly related to the event and the victims' families. Main features and support-providing approach to groups and individuals for the three basic types of trauma scene are presented in the paper.

Psychological impact of traumatic experiences becomes obvious usually during the first phase of war operations - as soon as first casualties come. Exposure to suffering, danger, extreme psychical demands and poor life conditions put whole units under enormous pressure that some individuals cannot cope with. Psychological techniques and procedures, because aiming at maintaining level of quantity and quality of human potentials on the one hand and reducing the stress level and suffering on the other, are appreciated both by commanders and soldiers.

Recently, frequently used various types of debriefing, have given a new, better opportunity for initiating the process of positive resolution of traumatic experiences in individuals and groups exposed. After nine years of working with those who were exposed to the traumatic experiences and five years of using debriefing techniques in Croatian Armed Forces, some new (old) questions have been raised : What kind of experience has stronger psychological effect on individuals?; Who is exposed to traumatic event?;What is relation between traumatic experience and PTSD symptoms? and many more.

Traumatic experience - symptoms relation

Various research done recently showed that relation between traumatic experiences and PTSD symptoms is not so simple as it seemed.

Research by Komar at al. (1998) showed that items of the Traumatic Combat and War Experiences Questionnaire taken as a set of predictors determined 31%. of variance of symptoms measured by CROSS (Croatian Sress Scale). Other research came up with corelation between experiences and symptom scales from 0,30 to 0,51 (Foy at al,1984, Resnick, at al, 1989).

Results of these research revealed many difficulties encountered in classification of various war experiences; specific meaning of particular experience for individuals; unique and bizzare experiences that cannot be classified, but also the same questionnaires measure one experience twice or even more times as they cannot discern the event from a wider context.

The research by this author since 1996. showed more relations between combat eperiences and symptoms of PTSD. Group of 59 diagnosed PTSD soldiers were asked to mark their most difficult experiences during the war (3 of them). Reasonable assumption was that they will mark experiences that are connected with intrusion symptoms, but also other symptoms of PTSD. During the Watson PTSD interview a month later 85% of them confirmed the marked experiences as most difficult (combat experience questionnaire was made in the way that location of particular event commanding officers and other circumstances could be checked).

Table 1. Combat experiences and percentage of those who marked particular as one of the most difficult

War experience	Marked as one of the most difficult
POW	92,3 %
Death of fellow - soldier	79,2 %
Wounded (severe)	54,5 %
Taking care of dead bodies	52,9 %
Withdrawing from enemy surrounding	38,7 %

Results of this research and later interviews suggest that there could be three kinds of exposure to critical incidents:

- "first-hand" experience of those who were directly exposed to traumatic event during the incident

- experience of those who were exposed to the consequences of the incidents (care of the wounded, dead bodies...), but they were not on the scene during the incident
- exposure through psyhological mechanisms - those who were near the place where incident happened or belong to same group as the deceased, wounded or primary exposed

Epidemiological estimates of PTSD suggest that 5% of male population in USA suffer from PTSD, (Kessler,R.C., at al) and in population of combat veterans some 30% suffer from PTSD, (Kulka R.A. at al 1990). This results may suggest that there is some difference between critical incidents during peacetime and critical incidents during the war. Baum, O`Keffe & Davidson (1990) gave the concept of acute and chronic stress and reactions that could explain the difference between prevalence rates of PTSD in general population and combat veterans.

Table 2. Concept of acute and chronic stress and reactions

	Stress	Reactions
Critical incident war	ACUTE CHRONIC	ACUTE CHRONIC
Critical incident peace time	ACUTE	ACUTE CHRONIC

Due to these differences it is possible to differentiate roughly two types of critical incidents:

- critical incidents during the war (on the battlefield)
- critical incidents during peacetime

Of course this distinction is not precise, and variations of both types are possible concerning the possibility of chronic exposure to stress during peace time (polution, flood, earthquakes...).The main difference between war and peace time incidents is that those who participated in war incidents were under pressure of other incidents and constantly exposed to a life treatening situation.

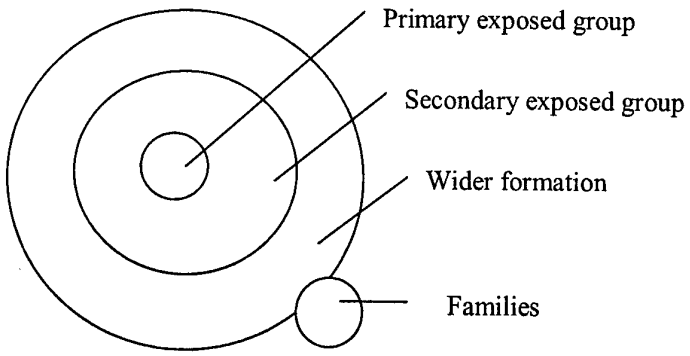
During the war it often happens that whole units are exposed to suffering, danger and witness to deaths of many fellow-soldiers. Such battles occur in every war and are a variation of "critical incident during the war".

Traumatic scene

Different types of critical incident together with types of exposure could be a basis for a traumatic scene concept.

Traumatic scene rises from critical incident and includes individuals and groups related. In every traumatic scene there is a possibility of determining position on acute - chronic axes (war-peace) and groups that are exposed. In some scenes the whole community is involved (major incidents, incidents including moral dilemma...), in others only a small group of people has been exposed. Families of deceased and exposed are also involved and exposed through psyhological mechanisms. Both families and community (public), can sometimes play a key role in resolving traumatic experiences of the exposed, by keeping them in an unsolved situation if they put them under pressure of guilt and responsibility, or initiate positive resolution through social support.

Figure. 1. Traumatic scene



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Through clinical experience and working with groups after critical incidents it became obvious that some individuals on the scene are out of their groups:

- individuals who developed strong acute stress reaction like stiffness, bizzare behaviour, catatonia
- severely wounded individuals are usually evacuated from the scene
- commanders (junior level) very often make part of the primary exposed group but in accordance with their status they usually try to establish control and stay out of the group

PSYCHOLOGICAL HELP

Critical incidents on the battlefield

Psyhological help for groups and individuals after critical incidents was organized according to the concept of traumatic scene.

Follow up meetings should be organized after some time to check reactions after traumatic experience. There is possibility that some soldiers from primary or secondary exposed group have seen another traumatic event, if so, reactions after them should be discussed at the follow-up meeting. The purpose of follow-up meetings is to normalize and discuss reactions from the traumatic event to the present moment. Follow-up meeting discussion gives a lot of information about individuals and points out those who could have serious psyhological problems and will need individual counselling. Critical incident stress debriefing sometimes isn't a proper procedure for secondary exposed group. Some modification could be done in phase of symptoms. Either because they usually witness to reactions of those in primary group or they just don't feel enough involved in the event, they themselves could see their reactions and symptoms not important or developed at the time. Longer focusing on the fact phase and according to development of debriefing, phase of symptoms could be transferred into the phase of education.

Sometimes (usually after several critical incidents in a short period of time) it is recomended to conduct a large group debriefing. During this debriefing officers from operations, or commanders explain what happened at the tactical and the operational level using maps, pictures and statements by those who witnessed key part of the event. The purpose of this procedure is to give a wider context of operations during which critical incidens occured. Some ventilation process could be expected, therefore the size of group and the plan of moderating the process should be prepared carefully.

Social support to large groups could be provided from higher command (military reward system) or media (community). Lack of social support, criticising and underestimating the effort could interfere with positive resolution of traumatic experiences. Families of deceased soldiers could sometimes put the primary exposed group under pressure by holding them exposed through psyhological mechanisms. As the negative impact should be at least assessed, work with families of the deceased should be directed to initiating positive relations towards the unit.

Severely wounded individuals are usually evacuated from the scene within an hour. In view of their psychical shape, debriefing could be done later, but it is recommended that they participate in follow-up meeting, if possibile.

There are several reasons why commanders should be treated separately. The main reason is that their role narrows the area of desirable behavior in the way that they cannot follow the main goals in debriefing phases. Another problem with commanders is that some of them interrupt the process of debriefing by making conclusions and taking the leading role. On the other hand, they could be very useful later because they can evaluate adaptation of soldiers after the critical incident. In the last phase of debriefing commanders were asked to evaluate the impact that critical incident might have the time ahead on the battlefield, and reminded of procedures that could decrease feeling of vulnerability and reactions could indicate serious problems. During a separate follow-up meeting they could give valuable information about adaptation of their soldiers after critical incident.

Table 3. Psyhological help organization after incident on the battlefield

Grouops/individuals	24 hours	24-72 hours	1-2 months	later
PRIMARY EXPOSED	DEFUSING	CRITICAL INCIDENT STRESS DEBRIEFING (CISD)	FOLLOW UP MEETING	COUNCELLING INDIVIDUALS
SECONDARY EXPOSED	DEFUSING	DEBRIEFING	FOLLOW UP MEETING	COUNCELLING INDIVIDUALS
WIDER INFORMATION	DEFUSING	DEBRIEFING	SOCIAL SUPPORT	COUNCELLING INDIVIDUALS
FAMILIES	VISITING ORGANIZING	CONDOLENCE	-	-
STRONG ACUTE STRESS REACTION	EVACUATION DEFUSING	DEFUSING/DEBRIEFING	DEBRIEFING FOLLOW-UP MEETING	COUNCELLING
SEVERE WOUNDED	EVACUATION	-	DEBRIEFING FOLLOW-UP MEETING	COUNCELLING
COMMANDERS	DEFUSING	CISD	FOLLOW-UP MEETING	COUNCELLING

Table 4. Critical incidents on the battlefield

	EVENTS	DEBRIEFINGS	SOLDIERS	ASR EVACUATION	PTSD PROBLEMS
PRIMARY EXPOSURE	7	7	34	6	5
SECONDARY EXPOSURE	7	5	25	-	2
TOTAL	7	12	59	6(10%)	7(12%)

Individuals with strong acute stress reaction were only in primary exposed group. Together with those who had significant PTSD problems that could indicate that experience of those soldiers was different from those from secondary exposed group. Some soldiers from the former group suffer from PTSD symptoms, which indicates that they should be treated as well.

In case of a larger-scale battle (with a lot of casualties in a short time period), possible solution is to treat the whole unit as exposed group, divide them into small groups (squads) and imply procedure for primary exposed groups.

Critical incident during peacetime

The procedure for this type of traumatic scenes is more or less the same as for the incidents on the battlefield. The main difference between those procedures is that secondary exposure is not so traumatic, and a larger formation probably won't need debriefing.

Table 5. Critical incident during peacetime psyhological help organization

Grouops/individuals	24 hours	24-72 hours	1-2 months	later
PRIMARY EXPOSED	DEFUSING	CRITICAL INCIDENT STRESS DEBRIEFING (CISD)	FOLLOW UP MEETING	COUNCELLING INDIVIDUALS
SECONDARY EXPOSED	DEFUSING	DEBRIEFING	FOLLOW UP MEETING	COUNCELLING INDIVIDUALS
WIDER INFORMATION	GIVING CREDIBLE INFORMATION			
ASR	MEDICAL CARE	DEBRIEFING (when possible)	FOLLOW-UP MEETING	INDIVIDUAL COUNCELLING
SEVERE WOUNDED	EVACUATION	DEBRIEFING (when is possible)	FOLLOW-UP MEETING	INDIVIDUAL COUNCELLING
COMMANDERS	DEFUSING	DEBRIEFING (if needed)	FOLLOW-UP MEETING	COUNCELING
FAMILIES	INITIATE POSITIVE RELATION TOWARDS UNIT			

Table 6.Critical incidents during peacetime

	EVENTS	DEBRIEFINGS	SOLDIERS	ASR EVACUATION	PTSD PROBLEMS
PRIMARY EXPOSURE	11	11	44	-	2
SECONDARY EXPOSURE	11	5	30	-	1
TOTAL	11	16	74	-	3(4%)

Closing the traumatic scene

By following these procedures it is possible to make a review of everything that has been done and evaluate the impact of a particular event on groups and individuals.

The traumatic scene concept is a result of clinical orientation towards critical incidents and people involved in them.

Regarding the fact that every critical incident is different, procedures in this paper should be taken in a flexible way, with the possibility of adjusting to cope easier with problems that could rise.

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PERSONALITY OF POLISH SOLDIERS AND THEIR WAY OF STRESS COPING DURING BOSNIA PEACEKEEPING MISSION

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ABSTRACT

There has been much concern about psychological consequences of stress during peacekeeping operation. The Polish Army is interested in how soldiers manage psychological stressor at various phases of mission. The paper deals with theoretical models describing coping style of stress "Eysenck"™ dimension (e.g. extraversion) relationships unfold in time. The aim of this study was to recognise and evaluate stress-coping styles developed by Polish soldiers during the peacekeeping operations in Bosnia (SFOR) in comparison with other Polish soldiers who were not there. The experimental group consisted of 50 soldiers taking part of UN peacekeeping mission in Bosnia and the control group involved 50 of soldiers from Representative Company of Polish Army. The another issue was to highlight the mechanisms of coping and to understand its value for individual soldiers. The preliminary results indicated some significant differences between groups which can be explained as a result of previous psychological selection.

There are different stressors affecting SFOR soldiers. These include both physical, psychological and sociological stress sources, and environmental factors and requires. The physical factors include geographical conditions under which military service is performed. The main psychological stress factors, connected with the participation in SFOR Peace Missions are danger, social deprivation and group characteristics. Military service always entails danger. It is very much the same as combat continuous awareness of danger, coping with anxiety and fear. Living far from the homeland results in treating everyday problems more seriously. No messages from home and bad news can be considered disastrous. General conditions and the nature of mission require intensive self-control. Besides, the soldiers have to observe numerous rules and orders, the duties performed are often tedious and the soldiers are highly dependent on their superiors (autocratic management style – typical for the army), so conflicts can be easily evoked. The social environment is different from that the soldiers used to live in.

Personality and Stress Coping

Statistics can evidence the preferable ways of stress coping in soldiers with certain personality traits. Psychologists have been interested in the ways people adapt to adverse conditions and fight stress. H. Eysenck (1970) assumes that individuals with level of neuroticism prefer the way of stress coping which is concentrated on emotions. Extroverts most often choose the style which is rather task oriented. N. Endler and J. Parker (1990), much the same as H. Eysenck (1970), claim that neuroticism is related to stress coping, concentrated on emotions, with a tendency to escape, stress avoidance and self accusation. Low level of neuroticism is characterised by stress coping style called "contact searching", which is the sub-scale of the avoidance oriented style. It consists in "neutralising" a stressful situation by contacts with friends, and talking about the ways of finding a rational solution to overcome stress, asking for opinions and different viewpoints upon the same situation. Low level of neuroticism may prove a high tolerance to stress and emotional stability, enabling rational analysis of the stressful situation. Introverts prefer the style concentrated on emotions; they are more introspective and more often experience emotional tension. As R. Lazarus and Susan Folkman suggest (1984, 1987) that some strategies of stress coping which may be noticed in both styles (action oriented and emotion oriented), depend on the personality, and especially on the tendency to experience positive or negative moods. In their studies, J. Strelau and P. Szczepaniak (1994, Strelau, 1996, p. 107) have proved that the task oriented stress coping style correlates with the features of temperament which are task oriented, while the emotion oriented style is connected with temperamental traits, concentrated on emotions (e.g. emotional reactivity).

Hypotheses

Based on the theories presented above, as well as some concepts and study reports, we may assume that there is a correlation between personality factors according to H. Eysenck and the styles of stress coping.

To be more particular, we can assume that:

1. A high level of the extroversion factor results in the task oriented style of stress coping by an individual;
2. A low level of the extroversion factor (high introversion level) results in the emotion oriented style of stress coping.
3. A high level of psychotics results in the emotion oriented style of stress coping.
4. A low level of psychotics results in the task oriented style of stress coping and searching for contacts.
5. A high level of the neurotic factor results in the emotion oriented style of stress coping.
6. A low level of neuroticism results in the task oriented style of stress coping and searching for contacts.

Moreover, we can assume that the experimental group is characterised by a higher intensity of the extroversive factor and the lower intensity of neurotic and psychotic factors than the controls, therefore the experimental soldiers will more often choose the task oriented style of stress coping as compared with the controls.

Studies:

In order to verify H.J. Eysenck's hypotheses concerning the correlation of personality, and the way of stress coping, psychological studies were performed in 100 soldiers, aged 18-26, 50 from SFOR and another 50 – from the Representative Company of Polish Armed Forces. Two survey techniques were applied, namely Eysenck Personality Questionnaire – Revised (EPQ-R) and Coping Inventory for Stressful Situations (CISS) by N.S. Endler and J.D.A. Parker.

Study Performance

The experimental group consisted of SFOR soldiers. 50 soldiers participated in the survey, 3 questionnaires however, had to be rejected as they were improperly filled in. The control group consisted of 50 soldiers from the Representative Company of Polish Armed Forces.

Significance of Differences

In order to examine the significance of differences between the results obtained in both groups, it was essential to determine variance distribution in the populations under study. This required computing average results and standard deviations for both result scales for the experimental group and the control one. Tables 1 and 2 present these results.

Table 1.

Average EPQ-R results for both groups

Personality	Experimental group		Control group	
	x	SD	x	SD
N	6,78	4,12	11,24	5,47
E	17,49	3,21	15,17	4,02
P	6,62	3,1	8,7	4,76
K	12,34	5,27	10,5	3,99

x-mean value, SD-standard deviation, N-neuroticism, E-extraversion, P-psychoticism, K-control scale

Table 2.

Average CISS results for both groups.

Coping Style	Expermental group		Control group	
	x	SD	x	SD
T	57,53	7,45	53,91	8,12
EM	36,72	8,76	42,22	10
A	51,4	7,49	52,2	7,63
RA	22,6	4,17	23,41	4,63
CS	18,96	3,03	18,22	3,44

T-task oriented, EM-emotion oriented, A-avoidance oriented, RA-reverse attention oriented, CS-contact searching oriented

In order to compare the results obtained in both groups, using each scale, Student t test for independent groups was applied. Application of this test requires the assumption of normal distribution and homogenous variances. Fisher's test was applied to examine equality of variances in both groups. In order to compare the differences between traits with incomparable

variances, the second version of Student t test was applied. The accepted significance level was & = 0.05. Tables 3 and 4 present the results of Fisher's and Student t test.

Table 3.

Values obtained using Fisher's and Student t test for CISS and EPQ-R in both groups.

Personality	Fisher' Test		Student' Test t -		
	F	α_F	t	df	p
N	1,76	0,059	- 4,45	91	0,000*
E	1,56	0,135	3,08	91	0,003*
P	2,36	0,004	- 2,50	91	0,014*
K	1,75	0,063	1,89	91	0,061

As far as personality is concerned, the differences between the experimental group and the control one proved to be statistically significant for: the neuroticism factor (t= -4.45; p = 0.000), extroversion factor (t=3.08; p = 0.003), psychotics factor (t= -2.50; p = 0.0014). The results suggest that the extroversion facto level is higher in SFOR soldiers compared to Representative Company soldiers. These soldiers are also characterised by a lower neuroticism and psychotics factor level than the controls.

The experimental group obtained high results in the lie scale. This could be explained by the fact that the subjects were selected for SFOR units, therefore they treated the studies as an additional selection that was made in order to determine their ability to perform a peace mission.

Table 4.

Values obtained in Fisher's and Student t tests for CISS Questionnaire applied in both groups.

Coping Style	Test Fishera		**Test t - Studenta**		
	F	α_F	t	df	p
T	**1,19**	**0,563**	**2,24**	**91**	**0,027***
EM	**1,31**	**0,375**	**- 2,82**	**91**	**0,006***
A	**1,04**	**0,899**	**- 0,51**	**91**	**0,615**
RA	**1,23**	**0,494**	**- 0,90**	**91**	**0,373**
CS	**1,29**	**0,395**	**1,11**	**91**	**0,274**

The differences between the results obtained in both groups, regarding stress coping styles, proved to be statistically significant for: the task oriented style (t = 2.24; p = 0.027), emotion oriented style (t = -2.82; p = 0.006). The analysis of stress coping styles shows that there are no differences in stress coping regarding avoidance, diverting attention and searching for contacts, the controls however, obtain higher results in task oriented stress coping. The reverse correlation occurred for emotion oriented stress coping with higher results obtained by the control group.

Studying correlation between the variables

Pearson r correlation was applied to study the relations between personality factors and stress coping styles. Tables 5 and 6 present the data concerning correlations between the variables.

Table 5

Correlation between Eysenck's personality dimensions and stress coping styles for the experimental group

Coping Style	Personality			
	N	E	P	K
T	**- 0,310 p = 0,836**	**0,146 p = 0,327**	**0,101 p = 0,502**	**- 0,290 p = 0,846**
EM	**0,694 p = 0,000***	**0,012 p = 0,937**	**0,192 p = 0,197**	**- 0,368 p = 0,011***
A	**0,121 p = 0,420**	**0,154 p = 0,303**	**0,005 p = 0,974**	**0,119 p = 0,425**
RA	**0,101 p = 0,499**	**- 0,121 p = 0,417**	**- 0,118 p = 0,429**	**0,074 p = 0,623**
CS	**- 0,145 p = 0,329**	**0,403 p = 0,005***	**- 0,303 p = 0,038***	**0,357 p = 0,014***

In the experimental group, significant correlations occurred between:

- the scale of neuroticism and the emotion-oriented stress coping style (r = 0.69, p = 0.000);
- extroversion scale and contact-searching-oriented stress coping style (r = -0. 403; p = 0.005);
- psychotics scale and contact-searching-oriented stress coping style (r = - 0.303; p =0.038);
- lie scale and emotion-oriented stress coping style (r = - 0.368; p = .011);
- lie scale and contact-searching-oriented stress coping style (r = 0.357; p = 0.011- lie scale and contact-searching style (r = 0.357; p = 0.014).

There were significant correlations in the experimental group between the scale of neuroticism and emotion- oriented stress coping style, extroversion scale and contact-searching oriented stress coping style, psychotics scale and contact-searching oriented stress coping style, lie scale and emotion oriented stress coping style. In the first two cases, the correlation was positive. In the remaining cases, negative correlations were noted.

Table 6

Correlation between Eysenck's personality dimensions and stress coping styles for the control group

Coping Style	Personality			
	N	E	P	K
T	**- 0,225 p = 0,132**	**0,369 p = 0,012***	**- 0,511 p = 0,000***	**0,239 p = 0,110**
EM	**0,509 p = 0,000***	**- 0,053 p = 0,729**	**0,168 p = 0,264**	**- 0,297 p = 0,045**
A	**0,044 p = 0,771**	**0,482 p = 0,001***	**- 0,161 p = 0,285**	**- 0,190 p = 0,205**
RA	**0,171 p = 0,256**	**0,468 p = 0,001***	**- 0,077 p = 0,611**	**- 0,303 p = 0,040***
CS	**- 0,125 p = 0,409**	**0,416 p = 0,004***	**- 0,367 p = 0,012***	**0,069 p = 0,645**

In the control group, significant correlations occurred between:

- the scale of neuroticism and the emotion-oriented stress coping style (r = 0.509, p = 0.000);
- extroversion scale and task-oriented stress coping style (r= 0.369; p = -0.012);
- extroversion scale and avoidance-oriented stress coping style (r = 482, p = 0.001);
- extroversion scale and attention diverting-oriented stress coping style (r = 0.468, p = 0.001);
- extroversion scale and contact-searching-oriented stress coping style (r = 0.416; p = 0.004);
- psychotics scale and task-oriented stress coping style (r = 511; p = 0.000);

- psychotics scale and contact-searching-oriented stress coping style ($r = -0.367$; $p = 0.012$);
- lie scale and emotion-oriented stress coping style ($r = -0.297$; $p = .0045$);
- lie scale and contact-searching- oriented stress coping style ($r = 0.303$; $p = 0.040$).

In the control group, significant correlations occurred between neuroticism and emotion-oriented stress coping style (like in the experimental group), extroversion style and task-oriented stress coping style, extroversion scale and avoidance-oriented stress coping style, extroversion scale and attention-diverting stress coping style, extroversion scale and contact-searching stress coping style, psychotics scale and task oriented-stress coping style, psychotics scale and contact-searching style, lie scale and emotion-oriented stress coping style, lie scale and attention-diverting style.

Based on the above mentioned hypotheses, we can conclude that the experimental group is more extrovert, less neurotic and less psychotic than the control group. In this group, task-oriented stress coping style is preferred, while emotion-oriented style is less often chosen, compared to the control group. The obtained data confirm the hypothesis concerning differences between individuals, in personality factors and stress coping styles being used. The results suggest that:

- A high extroversion level is connected with the contact-searching style
- (correlation found in both groups) and task-oriented stress coping style (statistically significant correlation occurred only in the controls) what allowed to confirm partly the first hypothesis (1).
- A low level of psychotics is connected with preference for the contact-searching style (correlation found in both groups) and the task-oriented style (correlation found in the controls) what allowed to confirm the fourth hypothesis (4).
- A high level of neuroticism is connected with emotion-oconcentrated stress coping style (correlation found in both groups), which allowed to confirm the fifth hypothesis (5).

Moreover, it was concluded that;

- A low level of social approval affects the choice of emotion-concentrated stress coping style (correlation found in both groups) and attention diverting (control group);
- A pronounced tendency towards social approval is connected with the contact searching style (experimental group);
- The results did not allow to confirm the second hypothesis (2) concerning the correlation between introversion and emotion-concentrated coping style, the third hypothesis (3) concerning the relation between a high psychotics level and emotion-oriented stress coping style and the sixth hypothesis (6) concerning the relation between a low level of neuroticism and contact-searching-oriented stress coping style. The results may be interesting, particularly for military psychologists as they complete the results of studies on the consequences of military service under particularly adverse conditions.

PSYCHOLOGICAL SUPPORT PROGRAMMES FOR PILOTS OF CROATIAN AIR FORCE

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PSYCHOLOGICAL SUPPORT PROGRAMME FOR CROATIAN AIR FORCE PILOTS

ABSTRACT

The profession of pilot is undoubtedly among those most demanding, as it is exercised in the circumstances of time pressure, imposed working pace and, above all, continuous psychological, sensory and psychomotor tension.

Pilots work in the physiologically unnatural environment (air), and are exposed to a number of specific loads and extreme stress factors. Stress factors, inherent in other professions too, in pilot profession are far more pronounced, and are accompanied by a number of pilot-characteristic stress factors.

If a pilot for extended time fails to overcome and resolve acute stress, he will be at the risk of developing chronic stress symptoms resulting in a series of functional disorders and - eventually - illness.

Prevention and quality psychological preparing contribute significantly to optimization of psychological stability and enhanced resistance to stress. Therefore, psychologists in the Croatian Air Force conducted special programs in stress-coping strategies and techniques, incorporated in regular psychomotor training programs for pilots.

Psychological programs included lectures on stress, stress reactions, stress coping techniques, ventilation groups, autogenous training as well as demonstration of progressive muscle relaxation, creative visualization and isometric exercises. Upon completing the program, the pilots assessed their satisfaction with the program and the exercises demonstrated, where, as judging by their ratings, they were most of all impressed to find out about the relaxation and stress reduction.

88% of pilots welcomed the initiative of relaxation techniques as regular practice in their bases, which has therefore been organized, in the form of quarterly courses in autogenous training in air bases; in addition, other relaxation techniques have been planned too, in view of their proven beneficial effect on psychological operative readiness for flight.

Performed in conditions of time constraint, forced working pace and continuous psychological, sensory and psychomotor strain, pilot profession undoubtedly is among the most complex.

Pilots work in physiologically unnatural environment (air), exposed to a number of specific loads and extreme stressors, requiring continuous adjustment.

Stress factors, common in other professions too, in pilot job are far more pronounced and accompanied by a series of pilot-specific factors.

Flying the aircraft pilots move extremely rapidly from one point to another, at a very fast working pace, unallowed to slow down or stop. Highly complex coordinated and fine motor movements cause immense psychological strain, accompanied by emotional tension too, especially in critical moments during the flight.

Should acute stress remain unresolved for extended time period, it may develop into chronic stress symptoms, resulting in a series of functional disorders and - eventually - illness.

Acute stress symptoms manifest in initial confusion, "tunnel vision", restricted attention, misapprehension of external stimuli and disorientation. Severe stress leads to disrupted functioning and concentration loss and consenquently in premature action, reacting to minor signals, or in slowed functioning and failure to detect important signals - all undermining processes, especially in critical flight stages. They may be followed by symptoms of avoidance of stress situations, social isolation, exaggerated distress and tension, and often by panic anxiety symptoms (increased heart rate, sweating etc). In time acute stress symptoms can accumulate, and get replaced by chronic stress symptoms, manifesting in impaired working and social functioning (most common is decreased working motivation, frequent discipline violation, conflicts in the working environment and in family, looking toward retirement, unexplainable fatigue and psychosomatic disturbances threatening flight safety.

A number of researchers attributed over 80% of air accidents to human factor, as a final result of failure to resolve stress.

Prevention and quality psychological preparation of pilots contribute significantly to psychological stability and enhanced resistance to stress. In that view, psychologists of the Croatian Air Force devised special programmes in stress-coping strategies and techniques and relaxation exercises, integrated into regular psychomotor training programs for pilots.

Psychological support program for pilots has been conducted annually during the 3-day psychomotor preparing programs with 12 groups on 4 different locations. Eight psychologists have been engaged in the programme.

The goals set were the following: training on stress and burnout syndrome, providing occasion for relaxation, systematic psychological support, instruction on stress coping strategies and techniques, relaxation techniques and individual counselling, and the programme content helped attain them:

1. each group of pilots attended 45-min training on stress that included lectures on profession-related stress, Air Force-specific stress, stress reactions, burnout syndrome and stress coping strategies.

2. each group followed three 45-min ventilation sessions, where pilots were allowed to let out personal frustrations relating to their job and stressors. Ventilation sessions too included instruction on useful stress-coping strategies and techniques to prevent chronic stress symptoms

3. pilots were also instructed on different relaxation techniques (3X45-min sessions):

a) **isometric exercises**: each group followed two successive sessions. Pilots were instructed on isometric exercises serving to warm the body, to improve general psychological and physical condition and for relaxation, on their usefulness in situations where other relaxation exercises would even increase tension and anxiety, on their practical quality (all settings, no additional space needed, short duration)

b) **progressive muscle relaxation**

progressive muscle relaxation exercises were demonstrated to show attendees where they accumulate chronic tension and to teach them correct relaxation. Namely, most people believe resting or sitting idly is relaxing, but in that way no physiological changes and no true relaxation are attained. Progressive muscle relaxation initiates physiological changes and is very effective in eliminating effects of unavoidable chronic stressors. At these sessions pilots were recommended regular exercising and and their attention drawn to body tension present while performing their usual tasks.

c) **autogenic training** - the first exercise - weight exercise was conducted with groups, as it quickly leads to relaxation. Attendees were instructed on the purpose of autogenic training -relaxation, regularly practiced, has psychological effect too, and helps cope with constant inavoidable stressors, and advised on the need of regular exercising (daily or at least twice a week) for lasting regulation of emotional states and relaxation.

d) **creative visualisation** - creative visualisation exercise was devised for this occasion specifically and tailored, based on extensive military psychological experience with pilot population, to its specific features

The benefit of the exercise for individuals exposed to chronic stressors or depleting situations (both in physical and psychological aspect) in quickly restoring calmness and satisfaction, was explained to the pilots; they were also told that different outcomes can be expected as few people are able to clearly visualise the exercise, and that the exercise serves a purpose even if one is not able to do so himself/herself, as visualisation has to be learned too.

Attendees received handouts with the instructions on how to do each exercise.

Following each exercise they were allowed 5 - 10 minutes to verbalise their impressions and ask questions.

4) Individual counselling pilots were also offered individual counselling if necessary, as it did not fit into group work.

The program was completed with satisfaction evaluation, conducted by means of a questionnaire whereby pilots rated their satisfaction with adequacy of the program, usefulness of "lessons learned", organisation of the program itself, the atmosphere during the seminar and how psychologists approached them. The factors were rated on 1-5 scales, and the evaluation was anonymous.

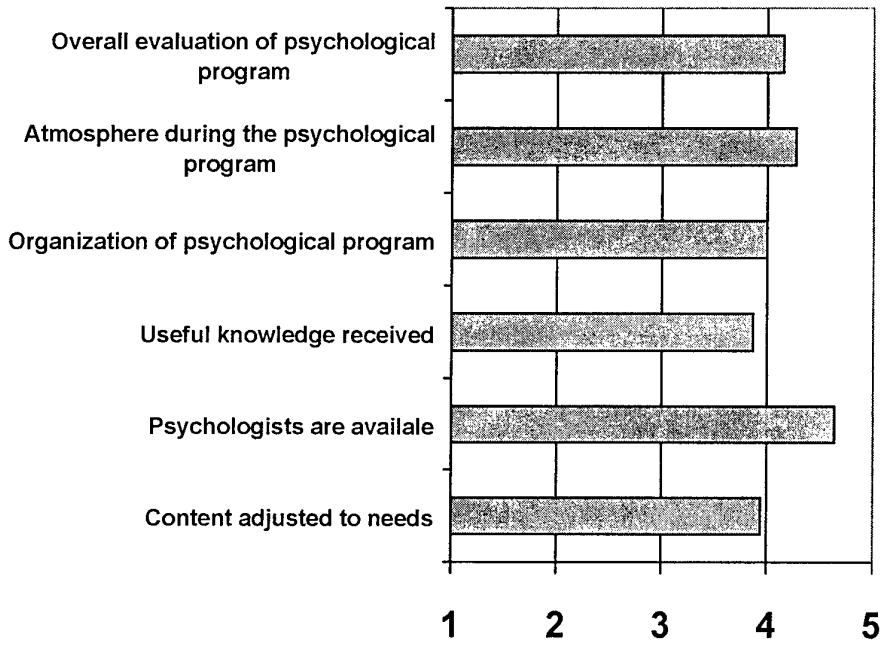

Figure 1: SATISFACTION WITH THE PSYCHOLOGICAL PROG RAMME

The results obtained are shown in Figure 1., revealing the best ratings for psychologists commitment and the atmosphere during the workshop, albeit other aspects won recognition too. Generally, pilots appreciated learning about relaxation and stress reduction. As many as 88% of them welcomed the idea of regular practice of relaxation techniques programs in their bases.

With this in mind, preceeding other parts of the Programme in air bases was autogenic training course, in view of its long-lasting effect in chronic stress situations. A manual was prepared for the purpose, and an audio-tape containing autogenic exercises to enable attendees practice them daily, which only ensures relaxation and lasting regulation of emotional condition.

In air bases each group follows a 3-month course (30-min exercises twice a week), conducted by military psychologists, who emphasise the significance of autonomous practicing (guided by the audio-tape) to complete the course itself.

The exercise log is kept with each group, where psychologists file their own observations and attendees' comments for future reference.

The course completed, attendees get certificates of attendance. The course has so far been conducted with 4 groups of pilots, and goes on with new groups. Courses on other relaxation techniques are being considered, in view of their benefit for pilots' psychological operational flight readiness.

THE GERMAN-NETHERLANDS CORPS AFTER FIVE YEARS: THE CULTURE OF A MULTINATIONAL UNIT

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ABSTRACT

Just a glance at the Bundeswehr's structure and organisation will already show that these armed forces today are almost completely put in an international frame concerning attachment, command and co-operation. The level of integration covers the attachment of complete divisions to bi-national and even multinational corps up to mixed units, as it is the case with both integrated headquarters of the German-Netherlands Corps. The history of this multinationality easily shows that it was rather created led by political-utilitarian considerations than by military-functional obligations of an optimal task accomplishment.

Nevertheless, this won't mean that the bi-national German-Netherlands armed forces had been created without rational intentions and aims. But not the military organisational aim was in the foreground at their build-up but rather political intentions. The differences between military and political interests result in a whole series of questions which have to be investigated on the organisational-theoretical field to find answers on the chances and risks of European or multinational armed forces. The elements to be linked together being supplied by different nations, the organisational-theoretical construct of 'culture' has been chosen to interpret the phenomenon.

This study arises from an accompanying survey of the German-Netherlands Corps since its commissioning and is based upon interviews with German and Dutch soldiers in 1995, 1997. and this year. It is confined to prove certain changes in the attitudes of the soldiers from both nations and tries to give an answer of the question whether the expectations expressed at the commissioning of the bi-national unit have come true or were deceived.

1. Introduction

The phenomenon of internationalisation is accompanied by a similar development also in the sphere of military, as is witnessed, among other instances, by SFOR, KFOR and a great deal of military missions under the umbrella of the UN. In the course of European integration, fundamental changes in structure have taken place – and continue to do so – in political, economic and financial spheres, and undoubtedly also throughout the armed forces of the 15 EU member-states.

One reason for building up the German-Netherlands Corps as an example of *multinationality* is given by the necessity of concentrating and rationalising resources, a general trend to be ascertained in the European context, as well as by the political goal of demonstrating the intended deeper European integration through action. Readiness for action was supposed to stay the same or even rise.

The phenomenon of *multinationality*[1], however, is much older than the GE/NL Corps. Within NATO, *multinationality* has always been an element of a integrated and commonly budgeted military structure, without being explicitly named. As a rule, this term related to units built-up in peacetime on the basis of bilateral or multilateral agreements which also stipulated the question of financing. But a problem of the technical use of this term seems to consist in the fact that not only the level, i.e. the assignment to political/strategic, operational, or tactical command and the differentiation between the structures of command and armed forces remain open, but moreover doubts are left whether this term describes structures built-up in peacetime or rather regards arrangements for a particular mission (Siedschlag 1999: 815 f). This form of *horizontal* multinational military co-operation between military alliances and UN peacekeeping missions therefore differs in its quality from *vertical multinationality* as developing in Europe since the end of the East-West conflict with the German-French Brigade and the GE/NL Corps. It is particularly distinguished by the fact that the multinational units mentioned stand also in peacetime under a common supreme command.

Generally, different steps of standardisation constitute the means to obtain military integration: compatibility (capacity of undisturbed interaction), interoperability (capacity of complementary cooperation), functional interchangeability of military equipment and personnel, up to the fourth step of equal equipment and training. But not only arms and equipment are covered here, but particularly the communication between the soldiers of several armed forces (Hahn 1997:341).

Now, five years after its entry into service, the GE/NL Corps as a model of modern multinational armed forces is to be examined under the aspect of *multinationality*[2] and its realization, with focus theoretical questions about organisations. Whether or not the soldiers from both nations came closer to each other, whether or not a feeling of solidarity developed or even a particular organisational culture of its own has been created – these questions (and more) were to be answered by a research study that was commonly led by the Royal Dutch Military Academy (KMA) in Breda and the German Armed Forces Institute for Social Research (SOWI) in Strausberg. The data here collected by means of the so-called 'Hofstede questions' could actually contribute to comparative cultural research in military-related sociology.[3] A first step in this direction was accomplished already by Soeters (1997) and Soeters & Recht (1998) by using the essential organisation-culture survey developed by Hofstede for IBM for the first time with regard to the military. They asked officer candidates from 18 military academies and imbedded the results in the discussion. Based on these works, this study will examine the question: which were the communities and differences between the German and the Dutch contingent of the

[1] A detailed presentation of literature dealing with *multinationality* is offered by P. Klein & G. Kümmel (2000): The Internationalization of Military Life. Necessity, Problems and Prospects of Multinational Armed Forces, in: G. Kümmel & A. Prüfert (Eds.): *Military Sociology. The Richness of a Discipline*, Baden-Baden (in printing).

[2] Despite the fact that the German-Netherlands Corps consists of soldiers from just two nations, in the following we will use the more complex term ‚multinationality' for describing the phenomenon.

[3] See the analysis of *multinationality* by J. Keller (1997): Multinationale Streitkräfte: Eine Untersuchung aus organisatorischer Sicht, in: Führungsakademie der Bundeswehr, Fachbereich Sozialwissenschaften (Ed.), *Europäische Integration, Prozesse – Strukturen – Perspektiven,* Hamburg, p. 301-321.

GE/NL Corps at the date of the survey, and which were the changes meanwhile to be ascertained. One question here is of particular interest: Is a common organisation culture principally possible, and if so, does it crystallise in the course of time?

The construct of *culture,* as it is developed by organisational theory, will be used to interpret the phenomenon of *multinationality*, since management problems within organisations tend to occur when interacting members belong to (organisational) cultures unfamiliar to each other. This is precisely the case when military forces from different nations are integrated to form multinational units. However, the military poses unique and specific problems for the question of multinationality, as Harold D. Lasswell's definition of military organisations' purpose reveals. Military organisations are, he writes, "The management of organised means for the use of force and for war."

This very specific role that the military plays demonstrates that the particular organisational aim of armed forces has traditionally been considered to be the orientation toward combat and toward the posing of a potential threat through the use of violence to attain political goals. For this reason, is it crucial to clarify from the outset whether or not the D/NL Corps fulfils the pre-conditions necessary to be an organisation proper, one which can realise such goals.

2. Military as an Organisation

From the organisation (or military) sociological point of view, this intercultural study deals with the military as a general organisation type since it is to be found world-wide in a similar form.[4]

For an analysis of the military as an organisation it is thus necessary to ask in a first step for its characteristics. Following the definition by Porter, Lawler & Hackman (1975), *organisations* show the following characteristics:

Organisations

- are composed of individuals and groups
- strive to obtain definite aims or purposes,
- namely by means of functional differentiation and rational co-ordination and leadership

and

- are conceived for a long duration.

Besides the importance of aims as influencing factors of organisational structure, Porter, Lawler & Hackman (1975: 78f) see the following function of *aims:*

- justification of actions against third parties
- information of members and non-members on the purposes of the organisation
- instructions for action, motivation
- scale for performance assessment.

For the GE/NL Corps, the aims are of political definition as delivered by the declaration of German and Dutch Ministers of Defence dated 30 March 1993 on the intended fusion of the I. German with the I. Netherlands Corps.

The purpose of multinational units generally involves the same societal mission as was formerly valid for the national units. Multinational units are, however, newly composed by elements or even complete organisations, and therefore they have to coalesce to new

[4] See J. Soeters (1997): Value Orientations in Military Academies: A Thirteen Country Study, in: *Armed Forces & Society,* Vol. 24 No. 1 (Fall), 24, who comes to the findings that there is an international military culture.

organisations in order to accomplish their purpose of an *organisation* according to the definition above. Organisational theory and management research can be used to identify the similarities and differences of cultures in organisations.

3. Culture

Sociological literature generally comprehends *culture* to be a system of value notions, behavioural norms and ways of thinking which has been internalised by a community of people, and which distinguishes this community from others. Besides these cognitive orientation patterns, the observable aspect of human behaviour is attributed to culture which is manifested by social interactions and objects such as organisations. Culture here is regarded as a determinant of behaviour within organisations, and as a complex multidimensional entity. Thus, the construct of culture particularly shows its proximity to organisation sociology.

Hofstede's directory research of 1980 on cultural values within organisations, however, starts at the invisible culture level of values. He starts from the supposition that environment-specific mental programs would characterise the behaviour in question. Thus, culture is a collective mental program shared by individuals within organisations, ethnic groups and cultural circles. Moreover his large-scale comparative management study based upon the evaluation of 116 000 questionnaires from 40 countries, he complied with the demand formulated by Lammers & Hickson (1979: 5) for an intercultural comparison at several dates, since managers of a multinational enterprise (IBM) were interviewed in 1968 and 1972.

Hofstede (1980) generated from these surveys four factors of culture which have been used since in further studies.[5]

- Power Distance: the extent to which unequal power relations within an organisation and within society are perceived and accepted.

- Uncertainty Avoidance: the extent to which uncertain ambiguous situations are perceived as threatening and the attempt is made to prevent them by formal rules

- Individualism vs. Collectivism: the extent to which whether life orientation is aiming at proper initiative, self-supporting and private life, or orientations towards the state and service and work for the community are placed in the focus

- Masculinity vs. Femininity: the extent to which the gender roles in a given society are clearly delineated (wherein both men and women fulfil traditional roles) or whether they overlap. In this context, 'masculine' values emphasise material reward and career success, while 'feminine' values put a higher priority on issues of communalism and sensitivity toward others.

Typology of military cultures

After the end of the East-West conflict, particularly in Europe a peace dividend was expected, accompanied by budget cuts for the defence departments. For reasons of new challenges and the budget cuts, armed forces were, as done in the industry for obtaining scale results - and following the same logic – integrated beyond borderlines. But, similarly to industries where difficulties are to be seen in financial losses[6], the integration of military organisations leads to problems. Hofstede explained these fundamental problems for the industrial sphere with the different cultures of the participants in the organisation concerned, thus essentially influencing the development of organisation theory and management research.

Oriented by the Hofstede factors, Soeters and Recht surveyed culture in military academies of eighteen countries including Germany and the Netherlands.[7] We can use this

[5] See J. Soeters (1997): Value Orientations in Military Academies: A thirteen Country Study, in: *Armed Forces & Society,* Vol. 25 No 1 (Fall), 7-32; M. Hoppe (1990): A Study of Country Elites: International Differences in Work-related Values and Learning and their Implications for Management Training and Development; Ph.D.diss, University of North Carolina Chapel Hill.

[6] See R. Olie (1994): Shades of Culture and Institutions in International Mergers, *Organisation Studies* Vol. 15, 381-405

[7] J. Soeters & R. Recht: Culture and Discipline in Military Academies: An International Comparison, *Journal of Political and Military Sociology,* Vol. 26 no 2 (Winter), 169-180.

survey, however, only with qualifications from the methodical point of view since Germany does not hold a military academy in the traditional sense; students of the Bundeswehr University in Munich were questioned for the survey. Thus, the results are only partly comparable with those of other nations.

On the basis of the first surveys in August/September 1995, the second ones in Summer/Fall 1997 and the third in Spring/Summer 2000 within the GE/NL Corps, in the following we will contrast the results of the military academies survey with our own results, and moreover draw conclusions that are question-specific.

Dimensions

Soeters and Recht combined the Hofstede factors on the one hand with the differentiation *Institution vs. Occupation* (I/O model) by Janowitz (1977) and Moskos (1977), and on the other hand with a *Bureaucratisation* approach:

Individualism and *Masculinity* were chosen to evaluate *occupation orientation* (I/O model) since reflecting on the one hand the importance of occupation compared with private life, and on the other hand the importance of high income and career chances compared with non-materialistic occupation contents.

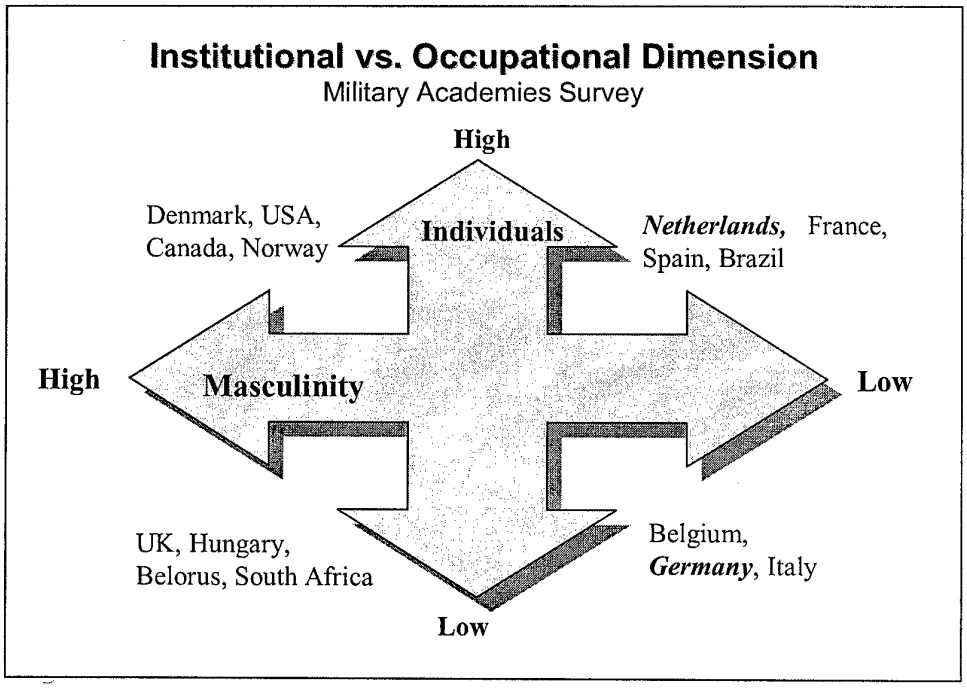
Power Distance and *Uncertainty Avoidance*, in their turn, present the dimension reflecting *Bureaucratisation* within the military culture concerned. This Dimension refers to the functional relation of hierarchy and co-ordination.[8]

Results

Survey of military academies

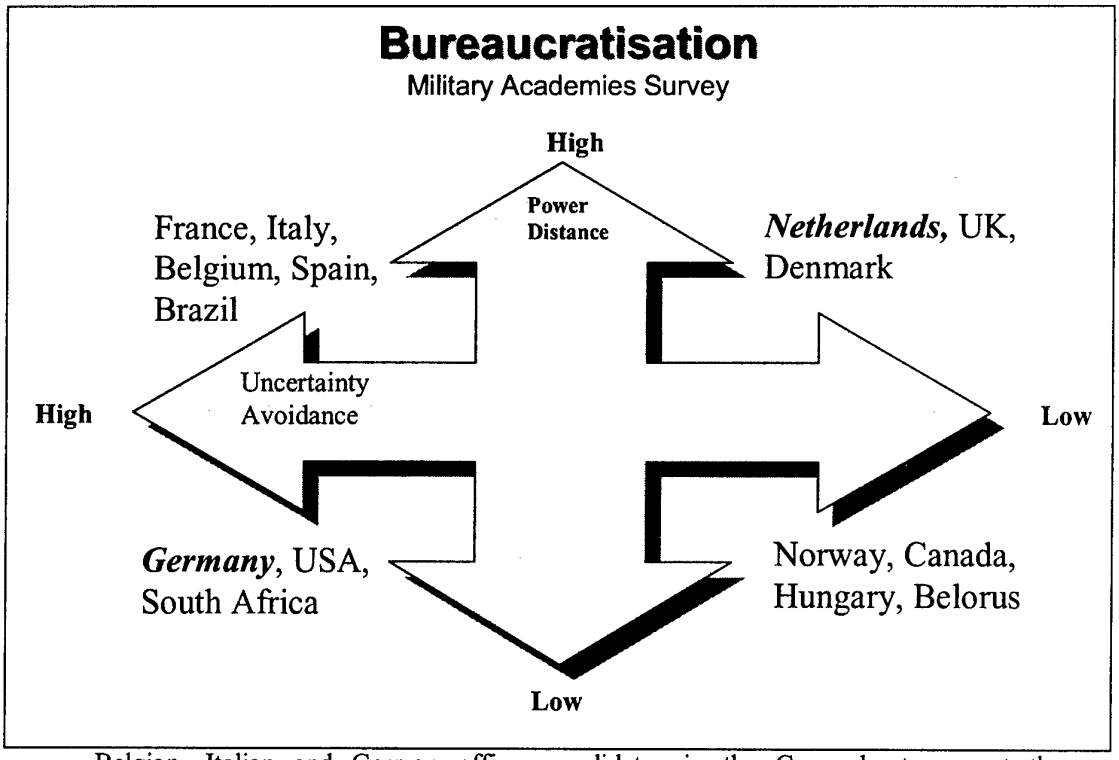
For the factors *Individualism* and *Masculinity*, i.e. the dimension of occupation orientation or the I/O model, Soeters and Richter present a differentiated picture for the Netherlands and Germany:[9]

This diagram shows how the responses of the officer candidates in the countries examined can be allocated to different cultural contexts. When considering the two characterisations before the background of the differentiation *Institution vs. Occupation* in its pure form, the North European and North American countries Denmark, USA, Canada and Norway stand for 'Orientation on the military as an occupation'.



[8] J. Soeters & R. Recht, op.cit., 173, choose the differentiation (machine-) bureaucratic vs. professional (-bureaucratic) by H. Mintzberg (1979): The Structuring of Organisations, Prentice Hall

[9] J. Soeters & R. Recht op.cit., 175.



Belgian, Italian and German officer candidates in the C quadrant support the interpretation of a proximity to *Institution*, whilst the candidates from the Netherlands represent a mixed type distinguishing in this survey from their German counterparts by a significantly pronounced individualism. The German and Dutch candidates are less materially oriented.

The study on military academies represents the Latin European countries France, Spain and Italy, as well as the partly Latin country Belgium, in the a quadrant, thus corresponding to the *bureaucracy model*. The c quadrant standing for a weak hierarchy comprehension and openness to uncertainty again collects Norway and Canada. As representatives of their organisation, the German and Dutch officer candidates are mixed types, with the Germans more shunning risk but acting in ways that are less dependent on hierarchies.

When trying to typify the two cultures by means of these results, the Dutch officer candidates show a tendency towards a post-materialistic, venturesome and individualist culture, whereas their German counterparts are oriented toward a vocation model, that is they seem to act more independently from authorities than the Dutch, despite shunning the risk.

This typification of the Soeters & Recht survey points at the differences between the German and Dutch military cultures which, due to different occupation and function comprehension, seem to make problematic a common organisation culture.

Survey of the GE/NL Corps

Our results, however, reflect a different picture. This certainly refers to the fact that the basic entity interviewed in the common German-Dutch study shows different compositions. Whilst 654 Dutch and 836 German soldiers participated in the first survey of August/September 1995; these were 739 Dutch and 566 Germans in the second phase of Summer/Fall 1997.[10]

From among the German samples, 14 and 17 per cent belonged to the integrated headquarters, this ratio running up in the Dutch sample to 22 and 16 percent. The education level of soldiers similar in both samples with 39 and 41 percent of Germans and 38 and 40 percent of Dutch with high school (or similar) certificate. Due to the suspension of conscription in the Netherlands, the 1997 sample did not represent any draftees whilst their ration was 36 per

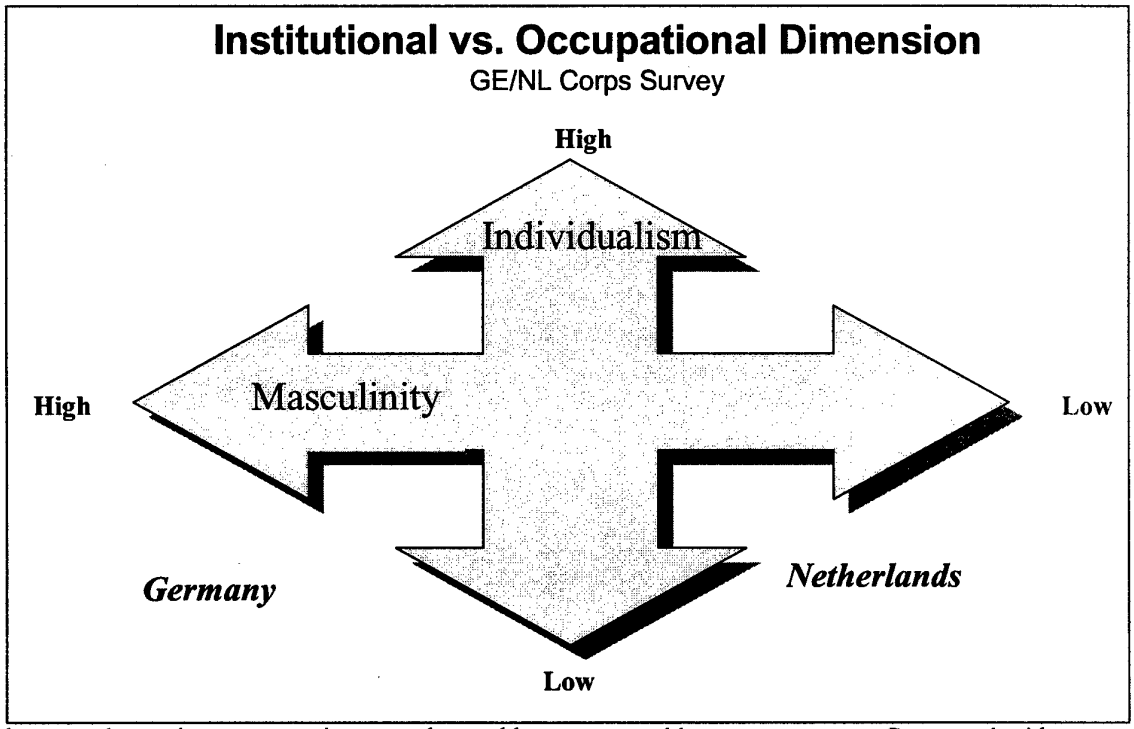
[10] The Dutch samples showed ratios of rank and file of 42 and 44 per cent, non-commissioned officers 33 and 29 per cent, commissioned officers 25 and 27 per cent. For the German samples, these ran up to 53 and 50; 31 and 29; 16 and 21 per cent.

cent in the 1995 sample. As for the Germans, this ratio ran up to 47 and 44 per cent of the soldiers[11]

The survey shows that German and Dutch soldiers in the common corps are very close to each other in three of the four characteristics as described above. Only the factor *Masculinity* shows slight differences. The course of time, however, shows a slight convergence of German soldiers to Dutch values for this factor and for the factor *Individuality*. This leads to the presumption that this year's survey evaluation probably could result in a certain congruency in all the factors, if the contacts with each other should lead to a approximation in work related values.

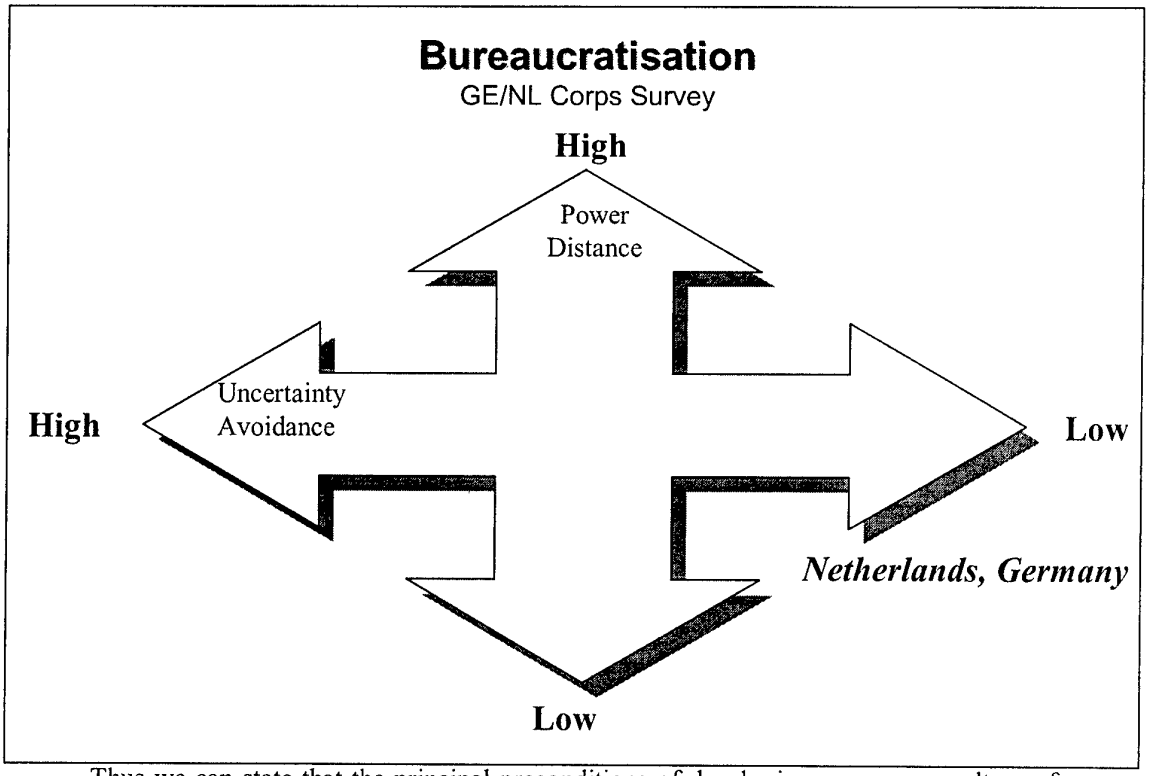
A view of the dimension *Occupation Orientation* (I/O model) shows here the Netherlands in the c quadrant – a place occupied by Germany in the military academy survey. Thus, Dutch soldiers represent the type oriented toward the *Institution*, whereas the Germans correspond to a mixed type since they show higher values for the factor *Masculinity* with equally low *Individuality* values.

As for the factor *Bureaucracy*, the Netherlands and Germany as well are to be found in



the c quadrant, thus representing an only weakly pronounced bureaucracy type. Compared with the military academy survey, the German average value for *Power Distance* remains exactly the same, whilst Dutch soldiers here obtain an even lower value. The factor *Uncertainty Avoidance* shows a nearly equal low distribution among both nations. A presumable draftee effect cannot be affirmed, as far as the Dutch side is concerned, since this value remains constant even after the suspension of conscription there.

[11] See P. Klein, A. Rosendahl Huber & W. Frantz (1996): Das Deutsch-Niederländische Korps im Meinungsbild seiner Soldaten, SOWI-Arbeitspapier N° 97, Strausberg, 6f.



Thus we can state that the principal preconditions of developing a common culture of the Corps are given. Moreover, tendencies show approach of German soldiers to their Dutch comrades regarding the values of the attitude *Uncertainty Orientation.*

The study by Klein, Rosendahl Huber & Frantz nevertheless showed a rather poor acceptance of the Corps among its soldiers. This is certainly due to the fact that community in the GE/NL Corps is actually visible only in the two integrated headquarters.[12] After this rather disenchanting statement, the last section shall involve the question: Despite these problems, are there also medium-term and long-term chances for a common culture of a multinational unit such as the GE/NL Corps?

Chances of a multinational culture of the armed forces

Soldiers in the troops still scarcely recognise that they belong to a multinational large unit since there are only few characteristic signs. This could be changed by means of increased common exercises, training and symbols. The survey in 1997 of the GE/NL Corps showed that in-duty and off-duty contacts received essentially (reserved) positive evaluations. This fact given, efforts should be taken to create opportunities for more contacts. Particularly the approach of twin companies is worthy of further consideration since social events in this frame are a good way to become acquainted with each other. A deeper integration also should be taken into consideration. For this purpose, German and Dutch soldiers should live in common barracks thus making them into meeting points, without any changes in national subordination relations. In any case, common Dutch-German barracks would be a symbol to highlight the idea of multinationality.[13]

Essential elements of a common military culture already lie in the communities, even though they rank behind national differences since the identity-generating function of the nation[14] seems to be imbedded in a more decisive context. In order to obtain a common organisation culture, one demand should read that the link of soldiers to a nation should be weakened in favour of a border-crossing identity, thus enabling a common efficient army in the framework of European unification on the basis of the already-existing communities.

[12] See this study, 120 f.
[13] See this study, 122.
[14] See Ernest Gellner, Nationalismus 1999, 19.

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ALLOCATION OF THE NEXT JOB FOR MILITARY PERSONNEL

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ABSTRACT

Military personnel in the Royal Netherlands Army (RNLA) change jobs (within the organization!) every three years. Until 1995, the following job was chosen by the organization. Since 1995, military personnel is responsible for getting a new job. To qualify for a job, military personnel have to fill in an application form and send it to a central department.

This central department takes care of the preselection of candidates. Alle preselected candidates are invited for a job interview with the potential new manager. The manager is responsible for the final selection.

In 1999, when this new system was operational for almost five years, we evaluated this system of job allocation. Parties with different points of view were involved in the evaluation. We interviewed employees who are responsible for the preselection, managers who are responsible for the final selection and of course military personnel who is responsible to find a new job every three years.

The results of the evaluation make it possible to answer the following questions:
To what extent has the RNLA succeeded in realizing the purposes of this system of job allocation?

What side-effects are caused by this system of job allocation?

To what extent are managers and personnel satisfied with this system?

Introduction

The Royal Netherlands Army, or RNLA, also has to deal with a changing environment. The RNLA has faced far-reaching reorganisations over the past decade, whereby the personnel complement has been reduced. These changes make new requirements of the personnel policy. Part of that personnel policy is the job allocation process for subsequent functions. The job allocation policy ensures that military personnel fulfil several functions during the course of their careers. After all, military personnel are appointed for a career, not for a specific function. In the RNLA, it is usual for military personnel to change functions every three years. The method for allocating the next function was changed radically five years ago.

Until 1995 the organisation appointed personnel to their next functions. Military personnel had a little say in the procedure. Since 1995, however, that has changed: military personnel are now themselves responsible for finding a new function: they have to apply for a function. Commanders have also been given more responsibility: they must ensure that their unit remains manned.

The new system of job allocation was evaluated in 1999. This was done using a large-scale study performed by the RNLA's Behavioural Sciences Division.

This study forms the core of this paper. In view of the scale of the study, we have decided to only look at part of it. This means that of the four sub-studies, only two will be discussed here. These are the studies into the opinions of the major players: the commanders and the individual military personnel. The opinions of these players have been mapped out using various methods. The commanders study was of a qualitative nature; the study into the opinion of the individual personnel was chiefly quantitative. Together, the two sub-studies provide a good insight into how the job allocation process is structured, how it works in practice, what its weaknesses are and how satisfied both commanders and personnel are.

In order to place the two sub-studies in context, a description is first given of how the system of job allocation is applied within the RNLA. The process is described in outline; it would be going too far to look at individual steps in the process in detail.

The job allocation process

The new RNLA philosophy prefers decentralisation to central implementation. The personnel policy is therefore implemented decentrally as much as possible (by personnel services for the units) and coordinated at organisation level. The job allocation process is also decentralised. This means that commanders have been given many responsibilities which used to lie with the organisation.

The new responsibilities mean that the commander describes how he wants to man his unit with regard to quality and quantity, and how to keep it manned. He also indicates when vacancies are to arise for which military personnel can or have to be posted and the degree of priority attached to filling that vacancy. The name and functional requirements of the vacancy to be filled are passed on to the central service, which publishes the vacancy in an internal vacancy bulletin.

Individual military personnel can then apply to the functions published in the bulletin. The central service makes a preliminary selection from the applicants. The commander then has to choose from the candidates by holding interviews.

In exceptional cases, it is still possible for the organisation to appoint personnel to a function, just as in the past, without the military personnel having to give their approval. This occurs, for instance, in the case of special functions or for functions for which no (suitable) military personnel have applied.

Commanders and military personnel are the key to the new job allocation process. The sub-studies map the opinions of the commanders and military personnel. The method of data collection is described below.

The methods used for the two sub-studies

Sub-study 1: inventory of the opinions of the commanders

As the job allocation process is complex, it was expected that commanders would be able to give a great deal of information which the researchers would not think of in advance. It is for this reason that it was decided to hold semi-open face-to-face interviews with the

commanders. The use was made of a checklist containing a number of important topics which definitely had to be dealt with. The idea was to allow the 25 commanders to talk as freely as possible about the job allocation process. The topics from the checklist were discussed with all the commanders, but not always in the same sequence. Furthermore, many topics which were not included in the checklist were also discussed. Whenever new, important topics[15] were brought up, the opinion of the commander was then 'tested' against that of the next respondent. Thus, we were ultimately able to chart the entire process from the point of view of the commanders. After about 15 interviews, no new aspects were brought up. After holding 20 interviews, we were able to establish that we had a complete picture.

Sub-study 2: inventory of the opinion of the individual military personnel

It was decided to hold a quantitative survey of personnel using a representative random selection, in order that statements could be made about the entire military population. We wanted to use a quantitative study in order to express the opinions of the military personnel in figures. It was decided to interview 1,000 military personnel by telephone. The actual interviews were contracted out to an external opinion poll company. The questions for the interview were developed by the RNLA. The survey consisted largely of closed questions. In view of the large number of personnel we wanted to include in the study, this was necessary in order to be able to process the answers quickly and thoroughly.

The results of the sub-studies

The results of the study of commanders: what do commanders think of the job allocation process?

The most important change for commanders is that they have gained many more authorities than before thanks to the introduction of the new system. This means not only that they are able and allowed to do more, but also that they must do more. Commanders are now able to choose their employees themselves, but they are also responsible for the quality of personnel in unit and they can be made accountable for this.

Commanders themselves are positive about the influence they have been given by the job allocation process. They can determine themselves which requirements are made of a function, they can make a choice from different candidates by means of an interview and they can hold onto good employees for longer by offering them extensions to their contracts. They are, however, dependent on others in this. In particular the availability of (suitable) candidates is a crucial factor.

In general, the commanders succeed well in guaranteeing the manning of their units with respect to quality and quantity. They therefore fulfil their responsibilities. However, many temporary gaps are created as replacements have not always been selected when old employees leave.

For certain functions there is under-capacity. This is chiefly due to the personnel complement: non-existent personnel cannot be conjured up out of thin air. Unpopular functions are also difficult to fill. These functions receive no or few applications.

Although commanders would not want to lose these new responsibilities, they are not totally positive about the job allocation process. This is due to the side effects which the process has according to the commanders. I will deal with these side effects later.

Sub-study 2: personnel

Personnel appreciate the system as they have influence over their own careers. Most military personnel succeed in finding their next function themselves. Those who do not succeed are found a new function by the organisation. This occurs after the six-month period in which the personnel should have found a new function.

The study shows that personnel are satisfied with the allocation of current functions; the average figure given is 7.4. Three quarters of the personnel like being able to find their next function by means of applying for functions. Military personnel in the lower ranks (younger personnel) particularly like being able to apply for functions. They can thus influence their own

[15] New aspects were earmarked as 'important' if they were not unit-specific, but could apply to several units.

careers and make choices based on issues they consider important. Older personnel prefer the old system (in which they were appointed to their next function).
A negative aspect of the job allocation process is the experience of being rejected. Being rejected is an inherent part of the system: 70% of military personnel have been rejected at some time or other. 67% of them thought the reason for being rejected unfair (but is it not 'healthy' to believe that you are really the best candidate for the function?).
The table below gives the figures and percentages of unsatisfactory scores (average of lower than 5.5) for some aspects of satisfaction with the process.

Table 1

Satisfaction on various aspects of the job allocation process expressed in an average figure (on a scale 1-10) and percentage of unsatisfactory scores (avarage lower than 5.5)

	Average figure	*% unsatisfactory*
The fairness of the job allocation process	5.2	54%
The speed of the job allocation process	6.3	23%
The way in which the job allocation process generally occurs	5.9	30%
The influence of the commander on the job allocation process	6.0	33%
The supervision of the job allocation process by the organisation	5.8	30%

Side effects of the job allocation process

Both sub-studies highlighted side effects of the job allocation process. These side effects are often undesirable. Not all side effects are equally serious and, furthermore, most side effects are in principle solvable.

The most frequently cited side effects of the system are summarised below:

- **Compartmentalisation between the sectors and result-responsible units**
  This is the effect whereby military personnel have great difficulty in moving from one sector to another. As commanders prefer familiar candidates (from their own unit), candidates from other sectors have less chance of getting the function. Consequently, military personnel continue to work in the same sector. This results in military personnel who work in a sector which sends a lot of personnel on missions abroad experiencing greater pressure as a result of missions than those who work in sectors which hardly send any personnel on missions abroad. Compartmentalisation also means that military personnel are less widely deployable as they have not gained experience in different sectors.
- **Manning problems**
  As military personnel may accept a new function after 2½ years, there is a risk of personnel leaving before a replacement has been found. As a result, gaps move through the organisation. Long-term vacancies arise because military personnel only apply for popular functions.
- **Unfairness**
  The fairness of the system is doubted by individual military personnel: 54% give an assessment of unsatisfactory to the fairness of the system. The old boys' network is named as the most important reason for the unfairness of the process. According to commanders, military personnel experience unfairness in different ways. The process itself is fair, but the way in which it is used is not always fair. In addition, military personnel do not always have insight into how job allocation occurs, sometimes resulting in a sense of unfairness.
- **Promotion to higher ranks is more difficult**
  The idea is that candidates who already have the required rank have priority over those candidates who do not yet hold that rank. This means that promotion is the most probable if there is no competition from candidates who already have that rank. In order to gain promotion, military personnel sometimes sometimes apply for unpopular functions and then move on as quickly as possible to a popular function in the rank which has since been obtained.

Finally

The new system fits in with the changing circumstances; not least because military personnel make different requirements of their career than in the past. They want to have a say in their next function (and the location). We presented both commanders and military personnel with three different options. One of the options was the current system of job allocation. The younger military personnel in particular opt for the system as it currently is. Commanders are divided on their preferences. Some prefer the current system, others want to return to the old system when the organisation sorted everything out. Commanders do agree on one thing however: they do not wish to lose their newly acquired authorities. Viewed in this light, the evaluation shows that the system, in spite of a few side effects which could be improved, has sufficient support within the RNLA. Furthermore, the objectives are achieved. This means that:

- The organisation is well manned;
- Commanders ensure quality in functions within their own units;
- Military personnel find their next function as much as possible under their own steam.

PREVENTION OF ONSET AND DEVELOPMENT OF POSTTRAUMATIC STRESS DISORDER IN THE ARMED FORCES OF THE REPUBLIC OF CROATIA

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ABSTRACT

The model of prevention of onset and development of PTSD in the Croatian military is based on theoretical models of PTSD as well as on military psychology experience from the Homeland Defence War.

Prevention of PTSD is conducted through the following adequate procedures and activities by all factors within the military:

1. SELECTION

- administration of psychological and other methods to select the candidates most apt for the military, and to screen out individuals having psychopatological and other characteristics unacceptable for the military.

2. SETTING THE FRAMEWORK FOR COMBAT OPERATIONS

activities directed towards achieving stress resistance, encompassing physical preparedness, instruction on stress, military discipline, routinization, improved unit effectiveness, attaining knowledge and skills and setting up cultural and social framework for the military

3. COMBAT PREPARING

- activities directed towards establishing a set of acceptable responses to stress; executed through psychological prepairing, emphasizing assets and capabilities of the unit one belongs to; realistic training, enhanced cohesion in the unit and establishing motivational framework for combat

4. ACTIVITIES PRIOR TO COMBAT

directed towards reducing the unknown and the anxiety, and conducted through briefing, role definition, anticipating difficulties and responses to difficulties, definition of immediate goal and through psychological support

5. ACTIVITIES CONCURRENT WITH COMBAT

- establishing frame for positive emotions and acceptance; conducted through care for others, respect of moral standards and rules of warfare; emphasizing justifiedness and positive connotation of fighting, objectivization of the enemy and its strength

6. ACTIVITIES FOLLOWING COMBAT OPERATION

- activities directed towards recovery and rationalization of the experience, conducted through providing sufficient amounts of water, food and ensuring enough rest (sleep), as well as analysis of unit activities, debriefing, psychological support and defusing

7. POST-COMBAT ACTIVITIES

activities directed towards better adjustment; conducted through counselling (legal, psychological, marital...) , social support and psychotherapy

All the activities imply continuous activity by military psychologists, commanders and other factors in the military, as well as cooperation with relevant civilian institutions and organizations

Stress has over the last several decades aroused both research and public attention. The aggression on Croatia and the post-war period have brought war stress problem before the Croatian experts too. Adverse health effects and costly treatments of war-caused disorders prompted relevant subjects in Croatian Armed Forces to work on prevention strategies. Modern international research practice has presented several effective PTSD coping strategies, that ensure:

a) systematic prevention aimed at stress minimising
b) alleviation of impact of traumatic experiences

The extensive psychological research and practice and insight into foreign experiences have proposed a number of strategies of prevention of war trauma-induced PTSD. The strategies are mostly focused on resistance factors and risks detected in all theoretical models of PTSD, some however deal with alleviating stressor effects through "de-activating" them. This paper will therefore address stress resistance acquiring procedures, their relevance to the Croatian Armed Forces units, and the PTSD onset and development prevention procedures.

Some of the strategies are in psychology domain, while the others are interdisciplinary. Activities and procedures directed at stress effects prevention are categorised as follows:

1. selection
2. setting the framework for combat operation
3. combat preparation
4. pre-combat activities
5. in-combat prevention activities
6. post-combat activities
7. peacetime transition activities

The following is account of each of the categories, stating their principal goals and the activities and procedures employed:

1. SELECTION

The issue that we are addressing here is quite a frequent one - can PTSD-prone individuals be detected by means of quality selection of candidates, especially for top units? The issue also defines the goal of selection within the prevention of onset and progression of PTSD. The psychological part of the overall medical screening procedure includes standardised tests and questionnaires to assess cognitive abilities and personality.

Studies on Vietnam war veterans (as referred by Foy, 1994) showed that early life traumas and deprivations result in maladaptative behaviours that in interaction with PTSD become specific. PTSD symptoms show similarity with some personality disorders (e.g. antisocial personality disorder, accompanied with obsession with arms and violence, failure to accept social norms, poor empathy etc. and borderline disorders characterised by instability, poor relationships network, chronic depression, outbursts of anger), or may occur accompanied by other personality disorders (e.g. paranoid, narcistic, schizoid). Put simply, PTSD may interact with disorders resulting from earlier traumatic experiences. Similarity and overlapping of symptoms are confusing, especially for non-experts, who often perceive a causal relationship between earlier disorders and PTSD.

Some of these findings parallel Croatian experience. Soldiers manifesting neurotic or deviant behaviours (primarily alcoholism and drug dependence), or other maladaptive behaviours in peacetime perform poorly in combat, and their symptoms exacerbate. Upon return from combat they have difficulties adapting to the life in the primary group and the environment in general. However, studies (including Croatian studies of the Homeland Defence War too) see the disorder severity related to trauma exposure degree. The general opinion does not see personality characteristics as a disposition factor for PTSD.

Selection for disposition to neurotic responding selection is justified inasmuch humans can learn to adapt to functioning under stress. High disposition to neurotic responding to stress

threatens one's adaptation to extreme demands of combat, thereby reducing his combat readiness. Selection for PTSD aims to prevent the interference of PTSD symptoms, should they appear, by other disorders.

The admission system comprises psychological testing with thorough medical examination and demanding training providing and testing basic military skills to ensure each soldier possesses minimum psychological and physical capabilities required.

Additional target examinations serve to assess abilities for more demanding or specific duties. Specific abilities and characteristics enable the individual to acquire specific skills too and thus lift his/her level of adaptability to extremely stressful situations.

2. SETTING THE FRAMEWORK FOR COMBAT OPERATION

Procedures of setting of framework for combat operation aim at building stress resistance prioritizing physical prepairment, essential for any combat activity. Combat stressors largely involve physical stressors, finding easy prey in underprepared individuals. Systematic building of physical preparedness improves resistance to physical stressors thereby also enhancing self-confidence and altering cognitive attitude towards endurability. The benefit of physical preparedness shows in later training phases, and in combat especially.

Military training basically is about superb physical preparedness, accompanied by enhanced self-confidence and sense of ability to meet highest demands acquired through martial arts and weapons training. Some studies show (military psychology papers, folio, 1993) physical exercising itself to have a stress-resistance-promotion effect. Recent experiences have revealed periodic hardship ("de-comfortization") drills involving extreme psychophysical efforts to be a most effective combat prepairment to supplement superb training and physical preparedness. In view of non-predictable course of events in combat, where extended exposure to stressful situations impose double strain, such training makes optimal simulation of combat conditions. Rather exigent, it can only be conducted occasionally and in special venues, so it is more a practice of special units and some leader training centres.

Another activity in this framework (and phase) is instruction on stress, comprising basic notions on stressors, stress onset symptoms, stress results and stress coping strategies, which, optimally, is to convince soldiers of stress and stress reactions as normal, thereby minimising the risk of pathological reactions and stress-induced conditions.

The following step is mastering necessary military routines; its value as a stress-fighting strategy has been proved in a series of studies. This activity extends into military discipline and skills acquisition. Military skills and knowledge mastered (including education on stress), physical readiness attained, self-confidence and faith may guarantee soldiers resistance to and timely recovery from (acute) stress or combat fatigue and return to their duties.

It is in this phase, concurrent with joint training, that soldiers develop social relationships network and their own social framework, which can have critical part in combat, in view of the demonstrated benefit of social support in stressful situations. Soldier comradeship is a fine matter of which unit cohesion is made of and nurtured by, and the principal asset in facing failures and losses in combat.

3. COMBAT PREPARATION ACTIVITIES

This phase and activities serve to prepare soldiers psychologically for combat in order to reduce its stressful impact on soldiers and comprise psychological preparation, realistic training and developing a sense of unit (group) superiority, thus facilitating unit cohesion and setting a combat motivation framework.

Psychological preparation for combat combines instruction on stress with a series of self-regulation techniques.

Stress situation brings about an array of changes at the physical, the emotional, the cognitive and the behavioural level respectively. In some individuals physical and emotional arousal may well outlast the situation, causing cognitive disturbances, social conflicts, psychosomatic dysfunction and the like, all od which call for self-regulation of psychological condition and nerve system arousal upon stressor termination.

These are some of the techniques:

breathing exercises -

breathing is an autonomous, life-essential process which in stressful situations changes in depth and rate. Stressful situations are also characterised by anxiety, tension and low intake of oxigen due to short breathing, which in its turn impairs functioning, especially cognitive. This is often accompanied by intrusive thoughts. By exercising some of specific techniques (abdominal breathing, meditated breathing, focusing on breathing or another breathing technique) these thoughts can be repelled or at least alleviated

muscular (progressive) relaxation -

stress situation and stress coping are characterised by higher muscle tonus, which can outlast stress, aggravated by anxiety and concern. This is what we refer to when we say one is tense, hard-relaxing and the like.

Muscle tension can be reduced through isometric exercises, Jakobson's progressive relaxation or a modification of those techniques; the techniques are also indicated for the effects of cold, a common combat stressor too, as they help heat our body where it is not possible otherwise.

visualisation of relaxedness

in stressful situations humans' thoughts are usually occupied with details of the situation, Negative perceptions, or the situation itself, lasting for extended time period expose an individual to increased tension and arousal, and tint his/her cognitive processes negatively. Such conditions exacerbate stress reactions, calling for alteration of processes, which is best achieved by means of visualisation of pleasant past experiences or projection of future "happy end" situations. People often do it spontaneously when in harsh situations, as witnessed by former prisoners of war too.

physical relaxation and intrusive thoughts repelling -

the need for physical relaxation is often sensed, especially following a hard day or exciting experiences, and is accompanied by thinking of past or future events, which interferes with relaxation. In such cases different relaxation and intrusive thoughts-repelling procedures are indicated.

Body awareness and focusing exercise is a simple procedure for segmential relaxation by successive focusing on body parts and breathing, thereby eliminating tension, a "body inventory" of a sort.

Modified yoga nidra is a similar procedure, whereby one "cruises" throughout his/her body, and visualises different sensations and events in all sensory channels.

Both physical relaxation and intrusive thoughts repelling are focused on the procedure itself, in order to repel intrusive thoughts, with relaxedness transferring into the psychological sphere too.

permanent control of psychological and physical arousal - autogenous training

autogenous training is a technique of relaxing skeleton muscles, vessel muscles and internal organs, which facilitates tissue blood supply thus restoring overall health condition. Muscular relaxation transfers into psychological relaxation. By exercising daily, an individual can attain a general level of relaxation and enhance his/her stress coping capacity.

free emotion expressing and exchange

those who are able to express their thinking and emotions also cope with stress better and are less susceptible. By expressing one's thoughts and emotions tension and fear are reduced, while communication with other people ensures social relationships and support, which itself is an effective stress-reducing means too. Therefore, training should not miss to underline the importance of expressing of emotions.

planning the expected activities; difficulties coping planning

other stressors common in combat include unpredictable course of events, time constraint, a sudden reverse in situation; they can be fought best by planning and predicting different scenarios. One's response (behaviour) to different adverse situations can be planned in this way. While situations can only be predicted to a certain extent, it is the awareness of having several possible courses "rehearsed" that reduces surprise and consenquently stress.

the sense of unit's superiority

the training is also concieved to instill the sense of being a part of a superior unit in each member. This is achieved through emphasising the basic values and mission of the unit and cohesion-reinforcing procedures, aimed at enhancing self-confidence.

realistic training

on very joining their military units soldiers can anticipate to take part in combat as the basic military purpose.

Different behaviour of combat-experienced soldiers versus those unexperienced is readily perceivable. Combat is a very stressful experience for "newcomers", who not only experience excessive stress (inable to recognise real threats), but also lack of trust by the experienced peers and, consenquently, psychological support. Experience obviously being a salient factor in adaptation to stress, training contains as much combat simulation as possible.

Realistic training of the kind aims at helping the soldiers develop a sense of positive combat experience, and assumably plays a critical role in enhancing resistance to stress.

The unit as a group can by means of preparation procedures minimise stressors and their impact on its members and unit performance in general.

This phase contains several factors ameliorating coping with a stressful situation:

well-organised unit

military unit is a complex organisation with different segments and individual units performing different functions. Synchronised operation, planning, performance and correction during plan and order execution is a condition of unit effectiveness. Members of well-organised units feel safe and have a sense of belonging to a well-stress-coping unit that takes care them. They are also much less likely to be affected gravely by stress than soldiers in poorly organised units.

interpersonal relationships

interpersonal relationships within a unit is another factor facilitating coping with stress. In the military those relationships are built over time, and they give unit members a sense of safety and belonging. Stressful situations have been found to affect far worse the individuals lacking acceptance from peers, isolated individuals and those admitted recently, that have not established satisfactory horizontal communication (with peers). Concern for the interpersonal relationships among the subordinated is a commander responsibility, who should introduce appropriate joint activities to improve them.

4. PRE-COMBAT PREVENTION ACTIVITIES

- uncertainty and anxiety-reducing activities

Preceeding other activities is realistic insight into the present situation - a clear outline of the unit's mission and of other units included in a joint operation, of possible problems along the way etc. It also includes spacial and temporal orientation and orientation within the predicted course of activities, and operational information about the enemy.

Defined and clear roles, both one's own and peers', help cope with stressors better. Therefore, vital in this phase is to check comprehension of the roles by each member and to practice the roles in advance.

Predicting possible adversities and pre-defining response sets is another important pre-combat preparation activity, serving to reduce uncertainty and anxiety and thus reinforce self-confidence. This activity is affine with mission goal definition.

Mutual support and assistance is a critical stress repellent; awareness should be fostered of necessity of good interpersonal relationships, of readiness to help one's peers and of seeking help not as a sign of weakness but of sense of safety and identification with others.

The escape reaction rather than facing the situation is a normal and evolutionally conditioned reaction of humans perceiving a situation extremely dangerous. Training should also address the replacing of the natural escape reaction with the appropriate conditioned reaction.

By training adjustment reactions to extreme stressors conditioned taking of responsibility is reinforced, and this reflects on stress experience too.

5. IN-COMBAT PREVENTION ACTIVITIES

- activities establishing a positive emotions and acceptance framework (i.e. averting self-destructive or antisocial behaviour).

The focus is on concern for unit members, especially by the commander (e.g. avoid unjustified exposure to enemy fire and unjustified casualties, ensuring enough rest, food, water, assistance for wounded and killed); soldiers take it hard to see the wounded or killed peers remain out of reach and fall to the enemy's hands and they rate such situations as the most stressful.

Another important factor in combat is respect of ethical and warfare norms (i.e. international norms of warfare, refraining from inhuman treatment of enemy soldiers, prisoners etc)

Awareness of justifiedness and value of "the cause" is an important aspect of in-combat stress prevention, including prevention of motive conflict in soldiers and facilitating coping with the combat hardships as well as embitterment and questioning after. Realistic assessment of enemy's power is another activity in this phase; the enemy's power it should not be overrated nor underestimated, to avoid excessive fear, panic and hazardous behaviours.

6. POST-COMBAT ACTIVITIES

These activities are focused on recovery and rationalisation of combat experiences.

Stress exposure calls for special strategy (or strategies) of inactivation of traumatic experience and stress-induced changes.

This is achieved through three groups of activities:

- ensuring sufficient quantities of water, food and appropriate conditions for sleeping and resting to make possible physical recovery and to eliminate physiological stress effects;
- in most cases rest and food will do. Soldiers should be provided a proper and a safe place for quality sleep (off the battlefield, or at least well-protected) and thus proper rest too.

Soldiers' impressions, emotions and moods following a combat mission (either successful or not) may result in dysfunctional behaviour and misinterpretations, often contradictory. Post combat period is often characterised by an array of behavioural, cognitive and emotional disorders. Prevention in this aspect consists in ***mission or activity analysis,*** which is conducted by each sub-unit separately, and lead by the respective leader. Soldiers are encouraged to express their experiences, which has a ventilating effect, and at the same time helps "reconstruct" the entire situation. It is in this phase that severe stress reactions can be detected, and the proper psychological counselling organised.

Commanders are expected to highlight the positive elements of the experience behind the unit, and to complete the procedure with the "lesson learned" and its elements useful work for future unit effectiveness.

In case of casualties or exposure to other intensive stressors, the ***debriefing procedure*** is employed, conducted by unit psychologist assisted by another trained person, and the commander. Debriefing is best scheduled within 2-3 days following the stressful event, although in combat conditions this might mean a week or two, even more, depending on the situation and the unit members (and psychologists) themselves. Experience by Croatian military psychologists reveals delayed debriefing is better than no debriefing at all.

The formal debriefing procedure is conducted through a 6-phase model:

- phase I - military psychologist (moderator) introducing himself/herself and explaining the reason and the rules of the procedure and other (technical and organisational) details as well
- phase II - the facts phase; the moderator encourages the soldiers to speak of their sensations (visual, auditory, olfactory etc), of their role in the event and the like
- phase III - feelings phase - soldiers speak of their feelings during the combat situation, after the stressful event and of their present feelings; they sometimes express their feelings in the phase II, or skip the phase III due to social inhibition, so the moderator is advised not to insist upon expression of feelings

- phase IV - symptoms verbalisation (symptoms experienced during the stressful situation and following it)

- phase V - psychologist provides instruction on stress, trauma and reactions, with the emphasis on presenting trauma reactions as normal behaviour in abnormal situations

- phase VI (completion phase) - psychologist answers soldiers' questions and, if necessary, schedules another meeting with the group, or offers individual counselling for those who may need it

Debriefing procedure is very demanding, and calls for a trained moderator (the effort should be shared between two moderators minimally), capable of dealing with a stream of emotions expectable.

7. PEACETIME TRANSITION ACTIVITIES

Peacetime transition activities are focused on assisting the soldiers adjust to new, non-combat or peacetime conditions, and involve counselling focused on post-combat problems, mostly manifested in re-adjustment to the family, friends, neighbours and return to daily peacetime activities. Some soldiers will have alcohol abuse or other dependence problems, calling for appropriate counselling support.

Some soldiers will need social support, either as understanding. Others may need assistance with pursuing their rights through administration mechanisms, exhausted from combat as they are they lack patience for them. Assistance in this regard (and phase) consists in appropriate counselling and instructions with the administrative procedures, but also counselling of the administration personnel on interaction with the ex-combatants to minimise or avoid the problems.

Even with debriefing, counselling and social support, some soldiers may still have not resolved stress effects, and need psychotherapy. By the medical and psychological service organisation in Croatian Armed Forces, they are referred to psychotherapists (psychologists and psychiatrists) in specialised medical institutions. However, basic military unit continues to have an important role in this phase too, by providing additional support to its members, as also do military psychologists, who co-work with the institutions and, if necessary, are included in therapy, especially group therapy.

To conclude, all the aforelisted activities call for constant involvement of military psychologists and commanders, as well as of other subjects within the military, and for cooperation with relevant civilian institutions and organisations. Also, the model presented allows integration and extension with new research achievements and findings.

CONSTRUCTION AND VALIDATION OF COGNITIVE STRESS APPRAISAL QUESTIONNAIRE

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ABSTRACT

The military makes a challenging context for study of stress in humans. The authors set to compose a cognitive stress appraisal questionnaire adjusted to military environment and military-specific problems, then to test its psychometric properties and, finally, to determine the relationship between cognitive appraisal of stress and some personality characteristics.

The questionnaire was administered with 123 young servicemen at their specialist training in Rijeka. At pre-testing, te respondents (N=50) were asked to describe stressful situations they encountered while doing their term of service. To the situations yielded and then analysed were added situations described in reference to create a 26-item questionnaire describing stressful situations. Also administered was the three-part Cognitive Stress Appraisal Questionnaire, with 26 tems placed in the centre and supplemented with Likert scales placed on the left and right side respectively, to measure stressfulness and controllability. The respondents' task was to rate stressfulness and controllability for each of 26 situations. In addition, the EPQ and STAI questionnaires were administered.

Analysis of metric properties of the Cognitive Stress Appraisal Questionnaire revealed the following:

a) Factor validity of the stressfulness questionnaire yielded 3 factors, based on which 3 sub-scales of stressfulness were created:

1) deprivation of one's habits, life standards and style (alpha=0,90)

2) physical and psychological exertion involved in training (alpha=0,85)

3) separation (alpha=0,72)

b) Reliability of the questionnaire was found high (alpha= 0,93), allowing the use of global index of stressfulness

c) Factor validity of the controllability questionnaire was tested in the same way as the stressfulness questionnaire, and yielded 1 factor

d) Reliability of the controllability questionnaire was high too: (alpha=0,96), allowing thus the use of the global controllability index

e) Analysis check-out revealed the expected high positive correlation between the stressfulness questionnaire and the three sub-scales, whereas the correlation between controllability and stress was found statistically significant and highly negative. Controllability was negatively correlated with the stress subscales, the highest figure being the correlation with the second factor, somewhat lower the correlation with the first factor, and the lowest with the third factor.

f) No association was found between personality characteristics in the EPQ questionnaire and cognitive appraisal of stress, but there it was between anxiety as a personality trait and cognitive appraisal of stress by young servicemen

Studies of the kind bear considerable practical value for the military, and the results obtained recommend further research of peace-time stress in young servicemen.

Introduction

The study is based on the Richard S. Lazarus stress model (1985), defining stress as an individual-environment relationship perceived as over-demanding and threatening his/her wellness. Therefore, stress is the discrepancy between the demands and the individual's perception of his/her abilities. According to this model, the intensity of reactions to stressful arousals is by large a function of subjective perception of the situation, or of cognitive appraisal as a key intervening variable (along with coping) determining the effect of stressful situation. Lazarus (1985) states 3 types of cognitive appraisal:

- **threat** (implying perception of an environmental arousal as threatening and harmful. This stage is primarily characterised by anticipation of threatening signs and mobilisation of cognitive processes manifested subjectively as uncertainty and indecision

- **primary appraisal of threat** - cognitive process of assessing environmental signs by the individual's own experience, expectations and attitudes

Primary appraisal is determined by 2 types of factors: factors related to the psychological structure of the individual (self-confidence, anxiety, self-assessment, individual goals), and on the other it is situational factors (balance of strength between the external threat and the individual's defence mechanism, arousal ambiguity, and conflict imminence). Briefly, the function of the primary appraisal is to assess the threat of a situation to the individual. When a threat is perceived, the following reaction stage occurs:

- **secondary appraisal** of stress situation - cognitive process of choosing the most appropriate defence behaviour. Secondary appraisal is also determined by environment factors and factors of psychological structure of the individual.

It should also be underlined that primary and secondary appraisal do not necessarily occur in that order, as they may co-occur too. The function of secondary appraisal is to determine the effectiveness of defence behaviours.

Secondary appraisal will result in reactions to stress situations, categorized into 2 main groups (Lazarus):

1) direct reactions to stress (escape, attack, withdrawal etc.)

2) defence cognitive mechanisms such as rationalisation, projection, identification etc.

Successful coping with stress can lead to positive stress reactions (enhanced resistance when facing future stressors) or even prevent them.

Unsuccessful coping, especially with intensive or extended stressful experience, can have various negative consenquences ranging from maladjusted behaviour to psychological and/or physical distress and illness. Unsuccessful coping is a result of inadequate appraisal of situation and of one's own capacities. In conclusion, trust in one's own ability to handle events determines the importance attached to them and vice versa, and the overall cognitive appraisal leads the choice of the coping strategy and affects the coping process itself.

Military environment and organisation differ from the civilian in many a way (chain of command, combat, rotating manpower, continuous extensive involvement of young servicemen in their unit's life, transparency, exposure to psychological and physical strain, deprivation of previous habits (living standards, quality of life) of emotional support, demands and standards imposed by the military organisation. It is therefore a very useful setting for stress research. War trauma and PTSD have been the subject of a number of studies already, whereas our study focused on peacetime stress in young servicemen of Croatian Armed Forces by using variables from Lazarus's model of stress - mostly primary and secondary appraisal of stress.

The goal of the study was to construct a stress scale relating to external stressors and their effects and covering specific conditions and problems in military organisation. The scale would serve to at least alleviate unnecessary stressors and their effects, if not prevent, and its results would complement the standard battery of psycho-diagnostic instruments for a more effective assessment of adjustment problems of young servicemen (adjusted and maladjusted behaviour as stress reactions).

The **goal** was to construct a stress questionnaire appropriate for a military setting and its specific problems, and to test its psychometric characteristics.

Demands:

- determine the situations perceived by Croatian Armed Forces members as stressful
- determine the reliability and validity of the stress appraisal questionnaire
- check the relationship between stress intensity and controllability of problems caused by stress situations
- determine the relationship between cognitive stress appraisal and some personality characteristics

Procedure:

- the study was administered on a sample of 123 young servicemen (average age - 20) during the specialist training (Median)

The Cognitive Stress Appraisal Questionnaire has 3 parts. The middle part contains 26 items describing stressful situations, and is encircled by Likert-type scales of stress and controllability. Respondents are supposed to rate subjectively 26 situations on a 1-5 scale (1="not stressful at all" to 5= "highly stressful". The same list of situations was then to be assessed in terms of controllability, with 1="impossible to control anything" and 5="control over problems arising from the situation was absolutely possible".
In addition, the EPQ and STAI questionnaires were administered.

RESULTS:

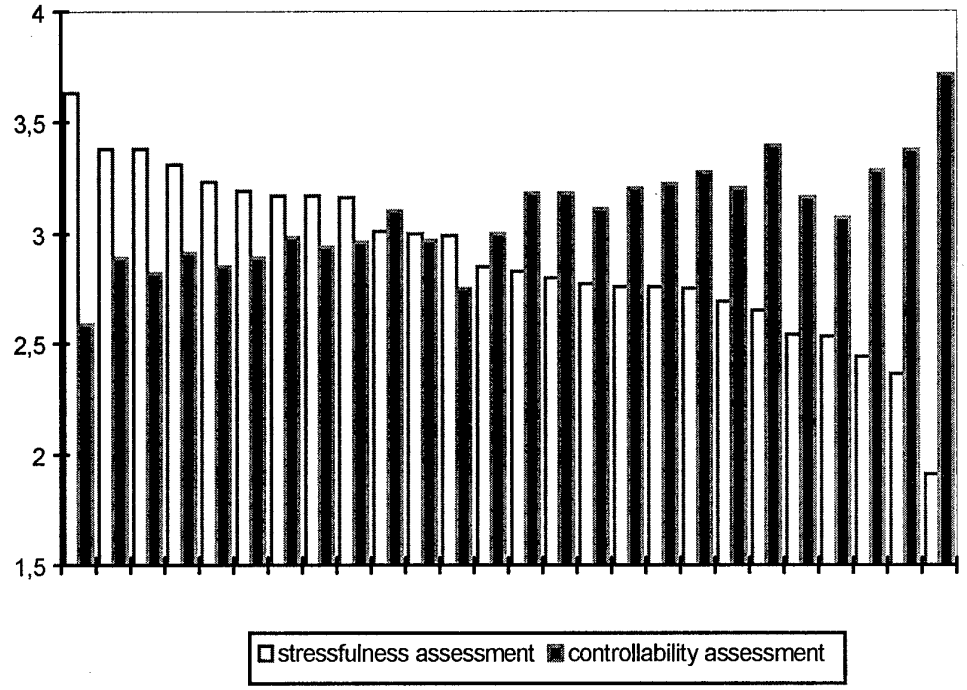
Perception of intensity and controllability of stress:

Table 1.: Mean values (arithmetic means) and dispersion (standard deviation) for each of the 26 situations

No.	Item (nr. of item in the Questionnaire)	Stressfulness of the situation		Controllability	
		M	SD	M	SD
1.	Unjustified punishment (15)	3,63	1,20	2,59	1,33
2.	Hygienic conditions (11)	3.38	1.29	2.89	1.39
3.	Uncertain weekend-leave (20)	3.38	1.24	2.82	1.39
4.	Reduced free time (26)	3.31	1.20	2.91	1.29
5.	Non-availability of daily shower (24)	3.23	1.20	2.85	1.27
6.	Separation from girlfriend/wife/children (06)	3.19	1.36	2.89	1.32
7.	No privacy (22)	3.17	1.25	2.98	1.33
8.	Inability to solve problems at home (13)	3.17	1.35	2.94	1.31
9.	Insults from the part of immediate superior sergeant (18)	3.16	1.45	2.96	1.45
10.	Hygienic conditions related to food (07)	3.01	1.28	3.10	1.40
11.	Collective punishment instances (08)	3.00	1.27	2.97	1.37
12.	Unfair, biased rewarding (25)	2.99	1.43	2.75	1.44
13.	Threats from the part of immediate superior s. (refused weekends off) (03)	2.85	1.28	3.00	1.32
14.	Poor concern for soldiers (12)	2.83	1.28	3.18	1.26
15.	Sergeant shouting at soldiers (18)	2.80	1.44	3.18	1.44
16.	Restricted leaving the barracks (14)	2.77	1.22	3.11	1.30
17.	Working in time-constraint (09)	2.76	1.26	3.20	1.26
18.	Psychological and physical strain in training (04)	2.76	1.20	3.22	1.26
19.	Separation from friends (10)	2.75	1.16	3.27	1.32
20.	Separation from parents/brothers (01)	2.69	1.22	3.20	1.34
21.	Insufficient information on the situation outside the installation (17)	2.65	1.19	3.99	1.31
22.	Strict behaviour rules in the military (19)	2.54	1.03	3.18	1.26
23.	Unclear orders issued (05)	2.53	1.11	3.07	1.33
24.	Failure to meet criteria in training (16)	2.44	1.10	3.28	1.23
25.	Changed nutrition habits (21)	2.36	1.18	3.87	1.36
26.	Behaviour exposed to comments and criticisms from other servicemen (02)	1.91	1.04	3.71	1.27

Fig. 1 Average rating of stress intensity and controllability

The horizontal axis contains 26 situations (items), while the vertical shows average ratings of stress intensity and controllability.



Factor validity and reliability of stressfulness questionnaire

All 26 items of stress intensity were factor analysed for common factors by means of Oblimin rotation and Caiser-Guttman criterion of factor extraction. The analysis yielded 3 factors (results are shown in Table 2).

Table 2. Factor analysis of stressfulness questionnaire:

ITEMS	root	% accounted variance	factor saturation
Factor I: deprivation from previous habits and life quality	**9.246**	**35.6**	
24) Non-availability of daily shower			0.76117
11) Hygienic conditions			0.71661
15) Unjustified punishment			0.69986
18) Insults from the part of immediate superior			0.61440
17) Lack of. information on situation			0.61440
26) Reduced free time			0.59728
25) Unfair, biased rewarding			0.54665
08) Collective punishment instances			0.53011
07) Hygienic conditions of food			0.51534
22) No privacy			0.50279
21) Changed nutrition habits			0.49955
14) Restricted leaving the barracks			0.45453
12) Uncertain weekend-leave			0.40356
13) Inability to solve problems at home			0.37002
Factor II: Psychological and physical strain in training	**1,51742**	**5.8**	
16) Failure to meet criteria in training			0.74489
02) Behaviour exposed to comments and criticism by other servicemen			-0.67138
04) Psychological and physical strain in training			-0.65764
23) Yelling from the part of immediate superior serviceman			-0.58777
09) Working in time constraint			-0.58573
03) Threats from the part of immediate superior serviceman (refused week-ends off)			-0.44661
05) Unclear (uneven) orders issued			-0.41338
19) Strict behaviour rules in the military			-0.36775
Factor III Separation	**1.11768**	**4.3**	
01) Separation from parents/brothers			0.71206
06) Separation from girlfriend/wife/children			0.70589
10) Separation from friends			0.41615

Factor reliability of the questionnaire (Cronbach alpha) = 0.93

Factor analysis yielding 3 factors, 3 subscales of the questionnaire were constructed as more specific parameters of stressfulness:

scale 1: stress due to separation from previous (civilian life) habits and life quality
scale 2: stress due to psychological and physical strain in training
scale 3: stress due to separation from the family, friends and partners

Reliability of single Cronbach alpha scales had following values:
I deprivation: (α=0.90)
II psychological and physical strain (α=0.85)
III separation (α=0.72)

In view of high reliability of the entire scale of stressfulness and the factor I accounting for the highest variance of the questionnaire, the questionnaire is also recommendable as an integral scale, i. e. summary result of all items can be calculated, as an overall index of stressfulness.

Correlation values between the stressfulness factors

	Factor 1	Factor 2	Factor 3
Factor 1	1.00		
Factor 2	-0.51	1.00	
Factor 3	0.40	-0.22	1.00

Comparison of factors by stressfulness:

Table 3. Mean values of stressfulness of individual factors

Factors	M	SD
1Deprivation	3.06	0.83
2.Psych.&phy. strain	2.57	0.85
3.Separation	2.88	1.00

Extracted mean values show the factor "deprivation" to be the most stressful, followed by "separation", whereas "psychological and physical strain in training" was perceived as the least stressful.

Factor validity and reliability of the controllability questionnaire

All 26 items of the questionnaire were included into factor analysis for common factors through the Oblimin rotation, by means of Scree test criterion of factor extraction. (Table 4)

Table 4. Factor analysis of the controllability questionnaire

ITEMS	root	% accounted variance	factor saturation
Factor I: controllability	18.61825	52.4	
03) Threats from the part of immediate superior serviceman			0.85948
09) Working in time constraint			0.79820
05) Unclear (uneven) orders issued			0.78787
18) Insults from the part of immediate superior serviceman			0.76411
26) Reduced free time			0.76375
23) Immediate superior shouting at soldiers			0.75645
10) Separation from friends			0.75335
08) Collective punishment			0.75283
24) Non-availability of daily shower			0.74996
22) No privacy			0.74809
17) Insufficient information on the situation outside the installation			0.74440
20) Uncertain week-end leaves			0.74208
16) Failure to meet criteria in training			0.73706
12) Poor concern for soldiers' problems			0.73188
25) Unfair, biased rewarding			0.73150
14) Restricted leaving the barracks			0.72968
19) Strict behaviour rules in the military			0.72404
07) Hygienic conditions of food serving			0.70747
11) Hygienic conditions			0.70733
04) Psychological and physical strains in training			0.70592
15) Unjustified punishment			0.68699
21) Changed nutrition habits			0.66103
01) Separation from parents/brothers			0.65272
02) Behaviour exposed to comments and criticism by other servicemen			0.61800
13) Inability to solve problems at home			0.60684
06) Separation from girlfriend/wife/children			0.51589

Factor analysis yielded 1 factor accounting 52.4 % of the total variance of the questionnaire

The Cronbach alpha questionnaire reliability was found very high (α=0.96), justifying the use of global controllability index.

Variables of psychoticism, extroversy, neuroticism, frankness, propensity to crime and anxiety as predictors of cognitive appraisal of stress.

To test the extent of stressfulness appraisal (a type of cognitive appraisal) accounted by the variables of psychoticism, extraversion, neuroticism, frankness, propensity to crime, anxiety and stress control incompetence, the gradual regression analysis was conducted.

Table 5. Results of gradual regression analyses of variables of psychoticism, extroversy, neuroticism, frankness, inclination towards crime, anxiety and stress control inability.

Criterion	STRESSFULNESS				
Predictors	B	SE B	Beta	T	Sig T
STAIOS	.43	.15	.28	2.81	.006
STAISAD	.40	.15	.26	2.64	.010
Multiple R	.48		F= 16.634		
R Square	.23		Sig F= .000		

STAIOS = anxiety as a personality characteristics
STAISAD = anxiety as a condition
Variables not in Equation : EPQ - N, EPQ - P, EPQ -L, EPQ - E, EPQ - C

Table 5 shows the last step in the gradual regression analysis, covering only the variables found significant. Multiple correlation coefficient was statistically significant ($F(2, 112) = 16.63$, $p < .000$)
The results of the analysis show anxiety as personality trait and as condition too as the best individual predictors of stressfulness appraisal, with each of them accounting for 15% of the total variance of the result. The aggregate accounting for the stressfulness variance was 23%.

CONCLUSION

1. In terms of the stress level, the situations found the most stressful were unjustified punishment, bathing hygienic conditions, uncertain week-end leaves, reduced free time and inavailability of daily shower. Among the least stressful were behaviour exposed to comments and criticism by other servicemen, changed nutrition habits, failure to meet criteria in training, unclear orders issued and strict behaviour rules in the military.

2. The study yielded 3 (satisfactorily reliable) stressfulness scales:
- stress relating to deprivation of one's habits and of civilian living standard and quality
- stress relating to psychological and physical strain encountered in training
- stress relating to separation from the family, friends and partners

High coefficient of internal consistency for the entire scale justifies the dual use of the questionnaire, i. e. as an overall stressfulness scale and as 3 separate stressfulness subscales.

Testing the controllability yielded unidimensional and highly reliable scale (0.96)

3. Correlation between stressfulness and controllability was found negative (-0.51). The highest negative correlation was found between controllability and psychological and physical strain in training, followed by the correlation between controllability and "deprivation", and, finally, between controllability and "separation".

4. The best individual predictors of stressfulness appraisal were anxiety as a personality train and as general condition at the moment. The two variables account for 23% of stressfulness variance.

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REPORTS FROM WORKSHOPS

INTEGRATED MULTINATIONAL FORCES

Ulrich vom Hagen

Moderator and presenter: Ulrich vom Hagen

In this workshop, scholars participated from the Czech Republic, Denmark, France, Germany, Latvia and Malta. The aim of the workshop was to discuss the phenomenon of multinationality while foregrounding the experiences and the attitudes of populations in the participants' home countries. Furthermore, we felt it necessary to think about the consequences of this multinationality for military psychology. From the start it was clear that we would not find any simple solutions for the problems that arise in conjunction with multinationality.

To what extent is multinationality desirable?

How much do multinational units change cultural identity?

What are the differences for multinationality between times of peace and times of war?

After a short introduction to the topic by the moderator, the participants reported on their countries' experience. The French have a lot of experience with the German-French Battalion, a battalion which uses a form of vertically integrated multinationality. French and German soldiers work side-by-side in an integrated staff in Strasbourg and they are under one constant command. In the North, the Nordic Brigade consists of soldiers from Denmark and the Baltic countries. The Nordic Brigade deploys a form of horizontal co-operation at the command level. Besides these permanent forms, there is also multinationality that exists only for special operations. Operations like KFOR which operate under the umbrella of the UN, would be of this type. In Kosovo there are Czech soldiers under British command and Portuguese under Italian command. Although they co-operate only at a horizontal level, cultural differences – especially in the Portuguese case – showed up. Cultural identity in multinational units is, in this context, one of the major questions.

There are different forms of multinationality. Simple co-operation – horizontal multinationality - is found mostly in temporary operations. In permanent multinational units, we find different forms of integration. Depending on the level of integration, this vertical multinationality poses challenges at three levels: state-sovereignty, military organisation, and soldiers' identity. At these three levels, discussion should continue about the extent to which multinationality is required, is desirable and is, indeed, possible. As well, for the discipline of military psychology, new questions at the level of the individual – ones which investigate the implications of multinationality for individuals – could become a significant area of study.

MILITARY PSYCHOLOGY IN PERSONNEL MANAGEMENT

Arthur C. Graesser

Moderator: Dylan Schmorrow
Presenter: Arthur C. Graesser

ABSTRACT

The fundamental challenge of personnel management in the military is to assign the right person to the right job at the right time. This process is traditionally broken down into problems of recruitment, selection, classification, and retention of soldiers. The workshop on "Military Psychology in Personnel Management" explored how these problems are handled in different countries and how science and technology can facilitate the process. Participants in the workshop expressed interest in collaborative projects between nations.

Personnel management in the military has traditionally has been subdivided into the problems of recruitment, selection, classification, and retention. Soldiers are recruited through advertisements, through interactions between recruiters and prospective soldiers, and sometimes by government policies. Prospective soldiers are selected if they meet some set of standards, such as minimum cut-off scores on tests. Soldiers are classified to jobs and billets by matching the their profile of test scores, histories, and interests to the minimum requirements of the jobs/billets. And finally, soldiers are retained if there is a sufficient amount of incentives and stimulation to keep the soldier interested in a military career.

The above four problems become progressively more challenging to the extent that there is a demand for more jobs and there is competition from other enterprises. For example, when the economy is extremely good, individuals find it much more attractive to work in business and industry instead of the military. It becomes extremely difficult to fill jobs in high technology and medicine when the salaries are doubled or tripled in the private sector. As a compensation, the military can attempt to promise stimulating environments, adventure, travel, and a sensitivity to the interests of the soldier. The military can also assist the soldier in exploring the risks and benefits of future career paths. Nevertheless, serious shortfalls in particular jobs and skills make it extremely difficult to assign the right person to the right job at the right time.

Participants in the workshop discussed methods of trying to solve these four problems of personnel management. There were a number of differences between countries, but most of the problems were sufficiently similar that there was interest in collaborative projects between nations. One country had no problems in recruitment and selection because all citizens served in the military at some point in their lives. Many countries are facing serious problems in recruitment, because of the excellent economy, and are implementing aggressive advertising campaigns. The problem of selection disappears when there is a serious shortfall in personnel; most applicants are selected. Prospective young soldiers expect the military to train them in the use of high technologies, so there is a pressure to meet these expectations after soldiers are recruited.

It is widely acknowledged that the process of selection and classification is improved to the extent that there is standardization and validation of psychological variables, using both quantitative and qualitative methods. However, the countries had rather different practices in the use of statistical and mathematical models in selection and classification. It is particularly difficult to measure the interests of young people because their interests change and many have very little idea of what their interests are. This makes it particularly difficult to incorporate "interest" variables in models that match sailors to jobs on the basis individual profiles (training, skills, scores on psychological tests, interests). There needs to be more global theories of these selection mechanisms -- theories that are grounded in empirical data.

It is much cheaper to retain soldiers than to recruit new ones in many countries. Therefore, the military somehow needs to earn the loyalty and trust of the soldiers. There needs

to be more sensitivity to the long-term evolution of the careers of personnel. Financial incentives, promotions, and assignments need to be planned strategically to optimize the likelihood of retaining the good personnel. Retention is presumably facilitated by honest communication about expectations in contracts and about changes in the soldiers' roles.

Technology is expected to play a major role in personnel management in the future. The Internet allows rapid exploration of jobs and billets that are available to soldiers. Potential recruits can learn about the armed forces through captivating Internet sites, including those with games and virtual reality environments. They can explore their own interests and abilities (both cognitive and personality traits) completing tests and surveys on the Internet on-line. Games and virtual reality environments can be developed for personnel at all levels of experience and expertise. For example, there could be a forecast simulation game that allows a person to track alternative long-term career paths. There can be VR depictions of prospective jobs and physical environments. An intelligent software agent could be associated with each soldier, to advise and assist the soldier. The software agent would match the soldier to alternative jobs, would recommend possible billets, and would help the soldier plan for future career development. And finally, software tools can be developed to assist policy makers in personnel management.

Some of the salient challenges of personnel management in the future are cultural. Representatives from most countries acknowledged that there was a gap between (a) the perspectives and attitudes of the younger generation and (b) the traditions and attitudes of the older generation. The older generation is frequently resistant to changes, which aggravates problems of recruitment and retention. Another cultural problem lies in coordinating activities in educational institutions, the military, the government, and the private sector. Individuals want to know whether taking courses X, Y and Z in school prepare them for job J in the military, or whether having a job J for N years in the military prepares them for job K in the private sector. These constraints often are not apparent to soldiers so it is nearly impossible to engage in strategic life planning. The military could be a leader in these efforts to coordinate multiple enterprises in a country.

Participants in the workshop uniformly recommend collaborative programs of research between nations. Many countries share common problems and challenges in the areas of manpower and personnel, so it would be prudent to compare insights and solutions.

QUALITY OF LIFE IN THE MILITARY

Jacques Mylle

Moderator and presenter: Jacques Mylle

INTRODUCTION

Of the 23 countries participating in IAMPS, the following nine sent one or two participants to the workshop (in alphabetical order): Belgium, Bosnia-Herzegovina, Croatia, Germany, Czech Republic, Portugal, The Netherlands, United Kingdom, USA.

To further a discussion that is well focused on different issues related to the subject, the chairman proposed to address the following questions:

1. What is Quality of Life? What is it not?
2. Why is it important for the military?
3. Which are relevant parameters? Which is their relative importance?
4. How to measure it?
5. For what purposes is it used?
6. Who are the users?
7. How is dealt with the representativity of the sample(s)? Are the results reliable?

1. WHAT IS QUALITY OF LIFE? WHAT IS IT NOT?

This definitorial issue is important because it will have an impact on the content of the instrument used to assess Quality of Life (QoL) and in determining who are the "actors" responsible for some aspects the QoL.

QoL refers to the physical, psychological and/or social well being of a person. Ideally, QoL deals with these three aspects simultaneously; this means a global approach of the person in relationship to his environment (interactionnist point of view).

Not the objective values of the parameters are important but the way these variables are perceived or experienced by a subject.

QoL encompasses those things that produce (job)satisfaction.

QoL concerns the life conditions of a person.

QoL has not to focus on the individual alone but on the soldier in his military interpersonal network and in his private network as well.

One participant asked if QoL is finally not a "trash bin concept" in which you put everything and that in the end does not explain anything anymore.

It has been stressed that QoL is not a pure psychological issue but, given the definition, interdisciplinary collaboration is necessary. For example QoL implies (aspects of) occupational medicine, work & community psychology, social services, etc.

2. WHY IS QoL IMPORTANT FOR THE MILITARY?

QoL is important for at least three reasons.

First, the *image* people have of a job in the military and the work conditions in the Armed Services will determine for whom in the target population the Armed Services are attractive and for whom they are not. In the British Forces, this idea is coined "civil accreditation".

Second, the QoL will determine the *performance level* of the soldier through his achievement motivation (at a certain moment for a certain task). If he considers his QoL as good, his performance will be (nearby) optimal. On the contrary, if he judges his QoL as unsatisfactory, his work behaviour will be more or less suboptimal.

It is clear that people, who experience continuously (or at least regularly) their QoL below their "standards", will ask for another work place or even leave the Armed Forces. In other words, QoL has a strong impact on the personnel *turnover* and the *retention*.

In summary, QoL is an important determinant of the *operational readiness* of an individual soldier, a unit and even the different Services.

3. WHAT PARAMETERS ARE RELEVANT? WHAT IS THEIR RELATIVE IMPORTANCE?

QoL has to contribute to the *realisation of societal values* that a person ought important. For example, one wants to join the Army to participate in peace support operations because of the humanitarian character but not to fight against another nation or population.

Human beings are social beings. Thus, *good interpersonal relations* are important. If we place the subject in the middle of a network, QoL concerns in the first place the relationship with his most significant others – both professional and private, second his team members and comrades, and his superior(s), third other members of the organisation and finally his society.

It is beyond doubt that *intrinsic aspects of the job* are important parameters of the meaningfulness of work and thus of QoL

Given that human behaviour is purposive, *expectations* or *believes* with respect to the attainment of some (self-set) goals contribute to the perceived QoL. The ultimate goal is of course *self-realisation*. Therefore opportunities for *development* are to be taken into account. A (partial) internal *locus of control* is thereby essential.

Satisfactory *financial conditions* (earn money to live and not live to earn money) and *material life conditions* according to standards of the modern society are necessary but not sufficient conditions for good QoL.

In summary, what pulls one in the military vs. what pulls one out of the military into the civilian world and what pushes one in vs. out (see the presentation of Kate Haysman).

Thus, QoL refers to the meaningfulness of professional work, which in turn can easily be linked to theories of motivation such as the pyramid of needs (Maslow) or the two-factor theory of Herzberg.

4. HOW TO MEASURE QoL?

The simplest way of doing is to look at the end of the chain; i.e. to *observe outcome behaviours*. If these behaviours contribute to the realisation of the mission, implicitly QoL is good. On the contrary, if these behaviours are dysfunctional (e.g. "escape behaviour), QoL is unsatisfactory.

A better way of doing is using *objective performance indicators*; for example, meeting some technical or tactical standards, or the number of days of sick leave.

A more personal and direct procedure is a *structured interview*, in face to face. A *telephone survey* shows the same advantages and disadvantages as an interview but is more distant too.

To grasp better the interpersonal relationships *focus groups* can be used. The typical hierarchical relationships in the military may constitute a drawback, even if a group is "diagonally" composed[1].

These three techniques are rather time-consuming and need a lot of workforce who must be trained for that particular job.

GroupWare is a technique that combines most of the advantages of the former ones without its major drawbacks. Each participant of group answers individually to questions on a computer that is connected in a network.

[1] This means that no two participants belong to the same chain of command but each to an adjacent or even more distant one. For example, if the private man belongs to squad A, then the squad leader in the focus group may not belong to squad A but perhaps squad B. In the same vein, the platoon leader in the focus group may not be the commander of the private men and of the squad leader.

The easiest solution (in its application, not in its conception) is the *questionnaire*. All participants in the workshop agree that questionnaires should only be used if there is no alternate solution. There are two major reasons to avoid the use of questionnaires. First, people receive too often questionnaires and thus feel reluctant to answer. The consequence is a low response rate (often between 30 and 40%). More important is the (uncontrollable) response bias, which leads to difficulties in generalising the results to the population.

5. FOR WHAT PURPOSES IS QoL USED?

Assessment of QoL can be useful for at least five reasons.

First, to have an idea of the current situation in terms of causes, mediating variables and outcomes; in other words to establish a *diagnosis* as a first step in a SWOT analysis[2].

Second, an evaluation of the QoL before and after an important event (e.g. the change of a commander) will show the *impact of that event*.

Third, in the same vein, a deliberate *intervention* in the functioning of a unit, intended as remediation of a weakness discovered through a diagnosis, will highlight the effects of that intervention.

Fourth, using the same instrument, and as far as norms have been established, it allows for a *comparison* of units: to what extent are they similar and on what parameters do they differ. For example, the QoL of two infantry battalions of one single brigade can be compared with respect to the interpersonal relations (among other leadership style).

Finally, when the same parameters are assessed repeatedly in the same target group, the *evolution over time* of the QoL can be evaluated. For example, how did the (perceived) QoL evolve before during and after a long lasting mission such as a "tour of duty" in a peace keeping operation.

6. WHO ARE THE USERS?

Two fundamentally different approaches appeared during the discussion.

In a first vision, results are aggregated at a high level and serve only for *these high-level decision*-makers.

In the second vision, a *unit commander* must be able to assess the QoL of his own unit and use that information to enhance the proficiency of his unit. If he is able to do it he can ask for the assistance of a military psychologist. This approach requires of course open-minded commanders.

When dealing with this issue it became clear that the role of the military psychologist is a very difficult one. At the one hand, he has to be the counsellor of the commander of a given echelon and at the other hand he has to act as a counsellor for the individual soldiers. This role ambiguity lead often to a fundamental question in the mind of the subordinates: is he a *psy or a spy?*

No matter how the data have been collected, it is extremely important to give *feedback* to the *respondents*!

7. HOW IS RELIABILITY OF RESULTS REALISED?

A necessary but not a sufficient condition for reliability is the *representativity* of the sample for the population or the target group. According to the two aforementioned approaches two ways are followed. In the first case, a large sample is drawn stratified by military and biographic parameters (e.g. rank, gender) within and/or across services. In the second case, the complete unit is called for collaboration.

In principle collaboration is on voluntary basis and anonymous. Anonymity is a drawback in the case of repeated measures because it is not possible to constitute paired samples and exploit the full information load of the data.

[2] Strengths, Weaknesses, Opportunities and Threats.

CONCLUSION

1. As often, there is a definitorial problem. At the one end, there is a very restricted definition of QoL and at the other hand a very large one.
2. QoL is an important issue for the military for attracting people, to reach high performance standards and to retain people.
3. Efforts are undertaken in several countries in assessing QoL, but with different purposes, using different techniques to collect partially different data.
4. Military psychologists play an important role in this field, but he should act in strong collaboration with other staff members and services to cover all relevant aspects of the person and the situation that person is working in.
5. The workshop allowed for a "first sketch". Further collaboration between countries is indicated as they are called more and more to work together in a multinational or an international setting. It will at least prevent one of inventing again the wheel. But – and this is more important – common efforts might allow also the creation of more powerful tools on the basis of a better scientifically based insight in the bio-psycho-social functioning of the soldier. [This conclusion has been added by the chair and does not necessarily reflect the opinion (of a part) of the participants].

ORGANISATION AND MILITARY PSYCHOLOGY

Kristina Pollack, Elena Boradjieva

Moderator: Elena Boradjieva
Presenter: Kristina Pollack

To get an idea about the state of art in the different countries represented at the meeting each participant was asked to make a presentation of their professional background and experience in the military organisation they represented. We were as well asked to make a survey about the domains, activities or involvements of military psychology in our different military organisations.

We found of course similarities as well as big differences due to history, culture and factors related to the size of the country as well as closeness to "reality" due to the task and missions the military organisation is committed to in the different countries.

The closeness to the "reality" and the conditions the military organisations primarily are trained and ment for, are of greatest importance in consideration to how the need of military psychological support and knowledge has developed and at the same time been recognised.

Consequently, the need for military psychology knowledge is more obvious in wartime and in the process to develop high-tech systems and to handle high-tech operations related to safety and efficiency.

To be able to fulfil the tasks the military organisations are asked to do, technical equipments, materials and capable manpower are necessary for the operations. To integrate these two components to each other to be sufficient for operation is a tricky and is not at least a very complex task.

This means, that we have to handle the human being in the system in the same way as we handle the technical systems, which means that we have to specify them, to "run" them , to modify them, to up-date them and to conduct them etc, but human beings have to be motivated as well. For all these purposes the need of military psychology is obvious, but however in fact not yet taken into application in all parts of the world.

The reasons for it are several. Psychology as a science is still quite a young discipline, compared to other disciplines, such as medicine. Consequently psychology was not the first discipline "on the scene" in the military organisation dealing with the human being.

The development of psychology as a science has however developed over the years and psychological knowledge in the military is not just related to the individual but as well related to management and organisational issues, which very clearly separate the science of psychology from the science of medicine. However, military psychology, is still in some military organisations a part of the medical branch, which very obvious limit the application and recognition of military psychology due to organisational obstacles.

There are however examples of military organisations, in which military psychology is an independent core and discipline. The Croatian military psychology establishment is an excellent example how psychology is asked for as an independent discipline and working on a parallel level together with the rest of the human-related disciplines to support the military organisation at all levels.

The benefits or disadvantages to have military psychologists in uniform or not, were as well discussed. There were no obvious favour to one or the other. The benefits and disadvantages were very much related to the conditions and the situations in which the psychologists have to operate.

Conclusions

Following issues concerning military psychology service in the armed forces were highlighted in the workshop and have to be penetrated further more:

- *The organisation and structure of the military psychological service*
  To be represented in all levels in the military establishment

- *Professionalisation of military psychology*
  A systemic approach in all areas, domains and activities in the military psychological service such as in;
  Selection
  Training
  Management/Leadership/Organisation
  Follow-up /audit
  Support (operational, clinical etc)
  Accident investigation (human factor)
  Human engineering (design, automation etc)

- *Criterions of military psychologists*
  Advantages and disadvantages to have psychologists in uniform or not.

- *The implementation of research to application.*
  The way to communicate and get acceptance in the organisation, which means to built up confidence and trust for psychological knowledge.

The moderator closed the sessions and the participants agreed that the question raised above were of great importance to continue to work for together.

PSYCHOLOGICAL FUNCTIONS UNDER EXTREME CONDITION

Mirko Drenovac, Fuad Topić-Ibrahimpašić

Moderator: Mirko Drenovac
Presenter: Fuad Topić-Ibrahimpašić

At the workshop PSYCHOLOGICAL FUNCTIONS UNDER EXTREME CONDITIONS" that took place on 14 th September at the Undersea and Hyperbaric Medicine Department of the Croatian Naval Medicine Institute 12 participants and 2 moderators took part.

The main topics of the workshop was Influence of increased pressure of air 2 - 4 bars on the efficiency of complex mental processing. This pressure exposure is correspondent to the so-called "shallow air diving" to the depths ranging from 10 to 30 meters (Fig.5).

The environment of the research was presented (Fig 11) as well as the instruments for research of mental functions used in this study - a computerized system of electronic psychological diagnostic tests - the CRD series (Fig. 9)

Presented was the thesis that changes in the efficiency of mental processing that occur already at 2 bars (10 meters) and deeper, at 3 and 4 bars (20 and 30 meters respectively) could be very positively attributed to the increased partial pressure of nitrogen, i. e. nitrogen narcosis of the "rapture of the deep" (Fig. 16). This was also the topics of the discussion.

The main problems of methodology of the type of research were stressed out:

- the selection of instruments enabling multiple retesting
- solving the problem of great interindividual differences among subjects in small groups
- the problem of elimination of the effect of learning during multiple retesting

The discussion also covered the questions that were leading to the presentation of the results of some other studies that had the same or similar methodological problems:

- the influence of circadian rhythm on mental processing during day and night, and "longitudinal" research of deterioration of mental functions as a function of aging.

Among problems in research of the factors determining extreme conditions discussed were:

- the question of variations of mental processing under hyobaric conditions, which is of interest in aviation psychology and medicine
- the question of provoking exhaustion by sleep deprivation, etc.

The workshop ended at 17.30.

CLOSING REMARKS, 36TH IAMPS SYMPOSIUM

15 September 2000

Craig Dorman

VADM Stipetić, Assistant Minister Batušić, Major General Grdić, Colleagues:

I would like to start by adding my thanks to those of earlier speakers, for the excellent arrangements and extremely valuable program of this symposium. The week has been intellectually stimulating and useful to all of us in serving out militaries, as well as very enjoyable, both for the companionship of friends and the beauty of Split and its surroundings.

In closing this conference, I would like to discuss two topics. First, I want to update you on the programs of the Office of Naval Research - ONR - and in particular the portions of our research which are most applicable to military psychology. I believe this should be of interest because ONR has sponsored this Symposium since its inception, US science is well known for its scope and quality, and ONR's research programs are competitively accessible to all scientists. More to the point of our gathering here, however, it serves as a backdrop to the second part of my talk, where I will issue you all a challenge.

As Dr Pestorius mentioned on Monday, ONR's overall expenditure on science and technology (S&T) is roughly US $1.5B per year. This covers, in approximately equal parts (from a funding perspective), basic research, applied research, and advanced technology. What ONR does is develop technology-based options for future Navy and Marine Corps capabilities; and when one of those options is selected for implementation, another part of our acquisition organization has the responsibility for maturing and fielding it in the forces. We like to say that our part of the job is to inspire and guide **innovation,** where innovation is defined as a process that couples **discovery and innovation** with **exploitation.**

For management purposes, we indeed divide our efforts into those two parts:

- first, the early phases of research, or discovery and innovation (D&I), which focus on the future a decade or more ahead and thus are unconstrained by specific military 'requirements' - this approach is sometimes referred to as 'technology push'; and
- second, a more tightly constrained part of our research program that 'exploits' novel ideas and technologies, and demonstrates products which can be 'delivered' to others for implementation. This 'exploitation and delivery' (E&D) part of our program can also be viewed as the part that responds directly to 'requirements pull'.

ONR's D&I program addresses a very wide range of naval interests, military psychology among them. The way the program works is that senior management determines strategic priorities and allocates funds to the several Departments that are responsible for different scientific and engineering disciplines. But once the money is distributed, management of the program within any field is left in the hands of the Program Officers, who are most familiar with the science itself and the academic, industrial, and laboratory scientists and technologists who must perform it.

We have several ways of categorizing our D&I efforts. For example, we talk about Grand Challenges that address stressing but transformational ideas that may take 30-50 years to accomplish (like new energy sources, or 'materials by design'); we fund National Naval Responsibilities that cover advances we must have, in fields where ONR is the only US sponsor (like ocean acoustics and underwater weapons); and we put the majority of our funding toward 'Building Blocks' for advanced capabilities, that support research in platforms and their weapon systems, Sailors and Marines, knowledge management in evolving 'network centric' naval operations, and the maritime environment itself. But in spite of these several ways of explaining what we do, for a scientist looking to be sponsored by ONR, the key is to talk and work with a Program Officer, who both is the expert and the final arbiter or research in one or more topics.

Because the more mature S&T in the exploitation and delivery (E&D) part of the program is tightly tied to requirements and to schedules of weapon system development, the funding and management procedures are somewhat more formal, and involve a wider set of participants. Basically, because the funds we have are inadequate to meet everyone's needs, we focus E&D on a set of "Future Naval Capabilities" (FNCs) that have been selected by the Navy and Marine Corps senior leaders that constitute the Department of the Navy S&T Corporate Board. There are currently 12 of these FNCs[1], and I am going to briefly discuss the one that deals most closely with the issues that IAMPS addresses, Capable Manpower, both as an example and to emphasize our most stressing concerns in military psychology. First, though, it's worth quoting our new Chief of Naval Operations' "Assuming the Watch" message:

"Number One of my Top Five (priorities) is manpower. I believe this is, and will be, the biggest challenge of my tour. Nothing is more important to our Navy than recruiting Sailors, retaining Sailors, and attacking attrition of Sailors. The quality of service alignment priorities directly affect our ability to retain the people we need to make our Navy work. I need the involvement of every leader at every level to achieve our goals"

Just to give you an idea of the magnitude of our problem, Navy has 546,000 active duty enlisted and officers. The bill for these men and women is some $24 Billion per year. Annually there are 186,600 promotions, 85,400 separations. Some 110,000 enlisted personnel are reassigned each year, and half get training en route. Overall, at any given time we have some 150,000 students. Reassignment moves cost $848 million, and our training budget is $7.5 Billion (5 times what we spend on S&T!). Every year we need 77,000 new recruits, and we dedicate 6,600 experienced Sailors as recruiters to obtain them. And perhaps the most shocking statistic, as LCDR Schmorrow pointed out earlier this week, is that we lose some 45% of these incoming people before the end of their first tour. It's no wonder that our CNO sees manpower as his biggest challenge. And I should note, I use Navy only as an example - Army, Air Force, and the Marines face not incomparable challenges.

The Capable Manpower FNC is designed to help us attack some of the problems; as the FNC leaders put it, the objective is to achieve "fully prepared sailors and Marines fighting and winning in an information rich, distributed fire power battle-space using human-centered hardware and systems". The FNC is led by an Integrated Product Team (IPT) with Flag Level representatives from Navy and Marine Corps Headquarters and the Acquisition Commands, from S&T (ONR - in this case, Jan Dickieson whom many of you know; this new responsibility explains why she can't be with us here at IAMPS), and the S&T Resource Sponsor.

Given the overall FNC objective, the IPT was required to reach consensus on "Enabling Capabilities" to achieve their goal, and then agree on "Supporting Technologies" that are prioritized within each Enabling Capability. Because funds are limited, some of the lower priority technologies have been deferred; for each of the others, the IPT has developed a detailed list of products to be delivered to specified customers at agreed-upon times. While it is Jan's job to manage the resulting program, each member of the IPT continues to be responsible, to ensure that the needed requirements, S&T funding, and transition plans and funds remain in place. I have attached some of Jan's slides that depict the Enabling Capabilities, Supporting Technologies, and Products for the Capable Manpower FNC, so that those of you with similar interests and programs can work with her. I want to stress that although we are of course focused on US problems, we are very well aware that almost all of our operations will be conducted in conjunction with multinational forces, and that there is some extremely excellent, and applicable, research underway in your countries. By its very nature, as exemplified by this symposium, and by our International Field Office and its programs, our ONR research outreach is global in scope.

Which takes me to the challenge - or perhaps I should say opportunity - that I want to offer to you. Very simply, I am suggesting that after 36 years, we use the annual IAMPS forum not just to tell each other what we have been up to in our own countries, but rather to plan, promote, and discuss jointly conducted research that addresses issues of common concern.

[1]Information Distribution, Time Critical Strike, Decision Support Syustemns, Organic Mine Countermeasures, Autonomous Operations, Littoral Antisubmarine Warfare, Total Ownership Cost Reduction, Platform Protection, Misile Defense, Expeditionary Logistics, Warfighter Protection, and Capable Manpower.

I was struck during this week, for example, by the similarities among the peacekeeping troop surveys reported by the US Army, Czech Republic, and Germany; Francois Lescreve's discussion of recruiting challenges in Belgium reminded me very much of similar problems we face in the US; and the simple Croatian screening test for mine clearance personnel would appear to be widely applicable. I could easily cite many other examples. Even more significantly, the excellent reports from Thursday afternoon's Workshops indicated to me that you all share my opinion, that many of the issues we face, and much of the research we need to conduct to help our military services, is the same irrespective of what nation we come from. This is hardly surprising given global commonalties among people, and the increasing importance to us all of operating as multinational forces.

So, I don't believe that my challenge to you is at all unusual or even difficult; really, I believe that the sort of collaborative research I propose is a very natural extension of what you are already doing. Making the switch I suggest will, however, require some effort on your part, and indeed will change the nature of future IAMPS meetings.

Now, my experience in managing S&T both in the US and in Europe tells me that there are two primary things that need to be overcome to start something new, such as the joint military psychology research I propose. The first is money. Planning research with new partners requires travel, and maybe some workshops, or perhaps for some of you, new computers or software, or even funding for telephone calls or faxes, to help communications. Perhaps some may need the help of a graduate student or postdoc to help define and try our new lines of research. And, perhaps some specialized equipment, or common tools for the collaborating teams, may be required. These are legitimate needs, and no one has planned or budgeted for what I propose, so ONR will make $100K available to stimulate the development of IAMPS-based joint research projects.

Money alone is not enough, however, because when you start to do something new and different, the 'bureaucracy' often needs to know why. Basically, it's important to have some justification for changing the way you do business. And here, hopefully, the fact that the US Navy has officially established this new opportunity for collaboration to augment its own FNC, and as an extension of IAMPS with its 36 year history, will be adequate justification to help overcome any bureaucratic obstacles.

So how should we proceed? First, I am going to ask Dr. Pestorius to take charge of this new opportunity at the ONR International Field Office (IFO). Many of you are familiar with the IFO's current programs (Visiting Scientist Program, Conference Support Program, and NICOP - see http://www.ehis.navy.mil), and this new task is a logical extension of them. Plus of course the IFO is here in Europe (as well as in Asia) which makes the logistics somewhat easier. And Igor Vodyanoy, and when she returns to the IFO Yvone Masakowski, both have significant interest in your activities. Jan Dickieson, LCDR Dylan Schmorrow, and I will all want to stay involved, of course, but basically this new 'challenge' will be managed by our IFO in London. They will provide you with more specific guidance shortly.

Second, as I have already mentioned, the Workshops of this conference gave us a great head start. They have already generated some excellent ideas. And, having listened to the conversation over the past week, I am aware that several of you are already starting, on your own, to talk about collaborating. So, I am going to suggest that we use four of the 36th IAMPS Workshop topics as focal areas for developing collaborative projects:

- Integrated Multi-National Forces,
- Military Psychology in Personnel Management,
- Quality of Life in the Military, and
- Organization and Military Psychology.

With that, I again thank our Croatian hosts as well as all the participants for an exceptional symposium and for the opportunity to address you. I look forward to seeing you all next year in Prague, where the Czech Republic will host the 37th IAMPS, and I hope at that time to hear about the initial responses to my challenge.

Capable Manpower

Enabling Capabilities of EQUAL PRIORITY

- **Acquire and match Sailors and Marines to the right jobs at the right time while balancing individual and Navy-wide needs**
- **Design affordable warfighter-centered systems, organizations and jobs by applying knowledge of human capabilities, limitations, and needs**
- **Equip Sailors and Marines with effective mission-essential competencies when and where they are needed at affordable cost**

Supporting Technologies were prioritized within each Enabling Capability.

Enabling Capability Definitions and Prioritized Supporting Technologies

Acquire and match Sailors and Marines to the right jobs at the right time while balancing individual and Navy-wide needs

1. Whole Person Assessment
2. Sailor/Marine Career Management System
3. Personnel Planning and Policy Analysis

- Recruiter Selection and Productivity Technologies (future supporting technology)
- Personnel Knowledge Management Library (future supporting technology)

Design affordable warfighter-centered systems, organizations and jobs by applying knowledge of human capabilities, limitations, and needs

1. Selection/Training Criteria & Validation
2. Design Support Systems

Equip Sailors and Marines with effective mission-essential competencies when and where they are needed at affordable cost

1. Advanced Distance and Distributed Learning
2. Objective-based OJT and Maintenance Support for Individuals and Teams
3. Virtual Technologies / Environments
4. Visualization-based Training and Support Systems

- Computer Generated Forces for Team Training (future supporting technology)

Capable Manpower [redacted]

Supporting Technologies & Products to Fulfill/Meet Operational Capability Gap

Product	Date	Transition Sponsor
Whole Person Assessment		
• Job and Occupational Interest in the Navy	FY02	N13, CNRC
• Skill-Job Matching Algorithm	FY02	N13, CNRC, CNET
• Personality (Non-cognitive) Measures	FY04	N13, CNRC
• Job Classification Interface	FY06	N13, CNRC
• Attrition Reduction Technologies	FY06	N13, CNRC, CNET
• Culture and Values Selection	FY07	N13, CNRC
• Whole Person Assessment	FY07	N13, CNRC
Sailor/Marine Career Management System		
• Sailor/Marine Assignment Matchmaker	FY04	Sailors,Marines,NPC,MCAs
• Broker Agent	FY04	NPC, CNET
• Distribution Incentive System	FY05	N13
• Web-Based Marketplace for Sailors/Marines and Jobs	FY07	PERS-4
• Career Case Manager Technologies	FY07	PERS-4
• Sailor/Marine Career Management System	FY07	Sailors,NPC,MCAs
Personnel Planning and Policy Analysis		
• Personnel Force Threat Detection	FY05	N13
• Artificial Intelligence Data Quality Tool Set	FY05	N13, PERS-3
• Cross-Functional Policy Analysis System	FY05	N13, CNET, PERS-4
• Personnel Cost/Quality Tradeoff Model	FY07	N13, PERS-4
• Personnel Situation Monitoring, Analysis, Response Tech	FY07	N13,PERS-4

Capable Manpower [redacted]

Supporting Technologies & Products to Fulfill/Meet Operational Capability Gap

Product	Date	Transition Sponsor
Selection/Training Criteria & Validation		
• Simulation-based Warfighter Test Battery	FY04	PEO(S) DD-21, PEO(Carriers),
• Future Surface Warfare Skill Set	FY04	ATRC, SWOSCOLCOM
• Surface Warfare Performance Tests and Selection Set	FY05	"
• Training and Skills Assessment Tool	FY05	"
Design Support Tools		
• Human Performance Parameters for Use in Revolutionary Design [initial demo]	FY02	PEO(S) DD-21, PEO(Carriers), RDA-CHENG Collaborative
• Knowledge Acquisition Tool and Advanced Cognitive Modeling Capability [initial demo]	FY03	Engineering Environment, Newport News Shipbuilding
• Human-Centered Design Guidelines, System Architecture, and Design Tool Interface	FY04 / FY06 / FY07	"
• Human Performance Parameters Captured on Key Military Tasks Saved as Software Library Accessible by Human Performance Modeling Tools [final demo]	FY05	"
• Knowledge Acquisition Tools Including Advanced Cognitive Modeling Framework [final demo]	FY05	"
• Library Containing Data Associated with Developing Developing Warfighter-Centered Systems; Including History of Design Decisions and Analyses	FY06 / FY07	"
• Mathematical Performance Multiplier Functions that Effectively Model the Impact of Environmental Stressors on Human Performance	FY07	"

Capable Manpower [redacted]

Supporting Technologies & Products to Fulfill/Meet Operational Capability Gap

Product	Date	Transition Sponsor
Advanced Distance and Distributed Learning		
• ADL Implementation of Basic Electricity and Electronics Courseware	FY03	CNET, N7, N869,N889,N931, NAVSEA, NAVAIR, SPAWAR,
• Guidelines for Optimizing ADL Effectiveness based on Individual Differences and Organizational Factors	FY04 / FY07	MCCDC
• Authoring Tools to Support Pedagogically Sound ADL Development: Demo I	FY04	"
• ADL Basic Electronics and Electricity Course with Learner Support Features	FY05	"
• Recommendations for learner support in ADL	FY05	"
• ADL Basic Electronics and Electricity with Advanced Learner Support Features	FY07	"
• Authoring Tools to Support Pedagogically Sound ADL Development	FY07	"

Capable Manpower [redacted]

Supporting Technologies & Products to Fulfill/Meet Operational Capability Gap

Product	Date	Transition Sponsor
Objective-based OJT and Maintenance Support for Individuals and Teams		
• Intelligent agents to enhance learning in large scale M&S exercises (i.e. JSIMS)	FY03	CNET,N7,N869,N879,N889,N931, NAVSEA, NAVAIR,SPAWAR,
• Computer-aided system for generating objectives & measures of performance for scenario-based team training	FY04	ATG
• Computer-aided system for generating objectives & measures of performance generalized to maintenance training	FY05	"
• Instructional system for identifying and managing objective-based mentoring relationships	FY05	"
• Demonstrate integrated IETMs, performance aiding and maintenance training	FY06	"
• Demonstrate technologies for facilitating non face-to-face mentoring interactions including reach-back capability for maintenance performance support	FY07	"
• Demonstrate objective-based team training across multiple, distributed platforms	FY07	"

Capable Manpower [redacted]

Supporting Technologies & Products to Fulfill/Meet Operational Capability Gap

Product	Date	Transition Sponsor
Virtual Technologies / Environments		
• Combat Vehicles, CAS, NSFS, FO/Air Controller	FY03	CNET, MCCDC,N85
• CQB, MOUT Mission Planning & Rehearsal Systems	FY06	CNET, MCCDC,N85,N88,PEO-EW
• Full Spectrum VE Integrated Infantry Combat System	FY07	CNET, MCCDC,N85
Visualization-based Training and Support Systems		
• Deployable Sonar Operations Training	FY03	COMSUBLANT,COMSUBPAC, N87 Acoustic-Rapid COTS Insertion Program
• Visualization of Environments Effects on Sys. Perf.	FY04	OP-96, METOC Centers, OA divs aboard CVs
• Multi-media Visualization for Sensor-Ops Training	FY05	CTFs, DESRONs, CVBGs
• Battlegroup-level Advanced USW Visualization	FY06	CTFs, DESRONs, CVBGs, ships, subs, VP, HS, HSL squadrons
• Multi-Platform Distributed, "Network Centric" USW Training System Using Advanced Scientific Visualization	FY07	CTFs, DESRONs, CVBGs, ships, subs, VP, HS, HSL squadrons

Panel on "Organization and military psychology" - Introductory words by chairman Pierre Azulay

Pierre Azulay

Ladies and gentlemen,

I am very honoured to have been asked to chair this panel for two reasons:

- First, the "poster section"opened this morning gave us the opportunity to discover the various psychological support programs which are currently implemented in the Croatian armed forces, proving if necessary the development of this discipline, the high degree of scientific sophistication it has reached, and the assistance it can provide.
- Secondly, the role and the place of psychology in the military organisation have not always been clearly defined and are still, in some countries, under discussion: the high command at least accepts it when it does not consider psychology as not necessary; the military medical services consider it as a non-medical (non-clinical) speciality and, as such, reject it from their own structure; and as regards the soldiers themselves, they are simply out of the debate, their opinion being non requested.

The situation is changing rapidly under the influence of two fundamental factors which are affecting the basic structure and the general organisation of the military.

These factors are well-known: let me however recall them briefly as a consistent background to our further discussion.

1. The first one is the dramatic change in the overall format of the armies due to the "professionalization" and the subsequent suppression of conscription in a large number of countries. This phenomenon has been called by Prof. Karl HALTINER of the Polytechnic university in Zurich "the end of mass armies" turned into all-volunteer armies.
2. The second is the growing implication of the armed forces in new missions (the so-called "peace-keeping operations") combining tasks which are familiar to the soldiers (combat, respect of cease-fire, defending a position or buildings etc.) and others which are less familiar to them and for which they have not always received an appropriate training; police duties or even tasks of a more civilian aspect such as control of elections or maintaining a minimum of civil (and sometimes economic) order.

These two changes certainly raise for the psychologists a new challenge, but at the same time they offer them a new chance, new opportunities to prove their utility within the military and convince everyone, at all levels of hierarchy, that they can better serve the institution.

These new trends lead to emphasise the role of the psychology in the military, and this panel offers us the chance to listen to five different national experiences.

The first expose' will be given by Doctor Christian LOHWASSER, who will present the new model of the psychological readiness (fitness) for military duty set up in the Austrian army.

The second paper, by Dr. Yvonne Masakowski and Mr. Neil HARDINGE, (presented by Dylan Schmorrow), deals with a technical issue, comparing the cognitive decision-making process in sonar operations in the US and UK navy.

The third, by Mrs. Elena BORADJIEVA, presents the impact of the military educational environment on the current reform in Bulgarian Army.

The fourth presentation, by Mr. Aurelio PAMPLONA, is devoted to the sensitive problem of commanding versus leadership and the experience in this field by the Portuguese Army.

Finally, Mr. Jacques MYLLE will also speak of leadershio, seen from the Royal Military Academy (Brussels) and the Young Cadets trained in this famous school.

LIST OF PARTICIPANTS

COUNTRY	*FIRST NAME*	*LAST NAME*
AUSTRIA	CHRISTIAN	**LOHWASSER**
BELGIUM	JACQUES	**MYLLE**
	FRANCOIS	**LESCREVE**
BIH	IRENA	**LEKO**
	MARKO	**ROMIĆ**
	SANDRA	**JOVANOVIĆ**
BULGARIA	ELENA	**BORADJIEVA**
CANADA	LUC	**LEVEILLE**
CZECH REPUBLIC	DANIEL	**STROBL**
	JIRI	**KLOSE**
	KATERINA	**BERNARDOVA**
	VLASTIMIL	**TICHY**
DENMARK	MIKKEL	**JEPSEN**
	STEN	**MARTINI**
FRANCE	PIERRE	**AZOULAY**
GERMANY	WOLFGANG	**WEBER**
	HANS JUERGEN	**HAETTIG**
	HEIKO	**BIEHL**
	HERBERT	**ASCHENBRENNER**
	KLAUS	**ARNDT**
	REINHARD	**MACKEWITSCH**
	ULRICH	**VOM HAGEN**
ITALIA	ERNESTO	**BONELLI**
	FULVIO	**GIARDINA**
	SANDRO	**TRAVERSI**
LATVIA	JANIS	**TURKS**
	ZANDA	**DIŠLERE**
MALTA	JOSEPH	**CARUANA**
NETHERLANDS	BEATRICE	**VAN ZEVENBERGEN-SNEL**
	HANS	**JETTEN**
POLAND	JAN	**TERELAK**
	OLAF	**TRUSZCZYNSKI**
PORTUGAL	AURELIO	**PAMPLONA**
	JOAO	**SILVEIRA**
	TIAGO	**MATOSO**
ROMANIA	GHEORGHEA	**PERTEA**
RUSSIA	SERGEY	**LYTAEV**
SLOVENIA	TOMAŽ	**KOVAČ**
SWEDEN	KRISTINA	**POLLACK**
SWITZERLAND	PATRICK	**BOSS**
UNITED KINGDOM	KATE	**HAYSMAN**
	MICHAEL	**COURT**
USA	AMY	**ADLER**
	ARTHUR	**GRAESSER**
	CARL	**CASTRO**
	CRAIG	**DORMAN**
	DYLAN	**SCHMORROW**
	FREDERICK	**PESTORIUS**
	IGOR	**VODYANOY**
	MICHAEL	**DRILLINGS**

CROATIA	ZORAN	**BATUŠIĆ**
	SANJA	**BENDER HORVAT**
	VESNA	**BUŠKO**
	MAJA	**ČEPULO KOMAR**
	DIJANA	**DENAČIĆ**
	MIRKO	**DRENOVAC**
	TOMISLAV	**FILJAK**
	DARKO	**GRDIĆ**
	FUAD	**IBRAHIMPAŠIĆ**
	LJUBOMIR	**KAČIĆ**
	VLADIMIR	**KOLESARIĆ**
	ZORAN	**KOMAR**
	BISERKA	**KOREN**
	ŽELIMIR	**PAVLINA**
	JADRANKA	**SEKULA-GOLUBIČEK**
	NIKICA	**STRAŽIČIĆ**
	SUZANA	**ŠTEFAN**
	GORAN	**TIŠLARIĆ**
	MLADEN	**TRLEK**
	VESNA	**TRUT**
	VESNA	**TRUTANIĆ**
	ANTO	**ZELIĆ**
	VESNA	**ŽARAK**

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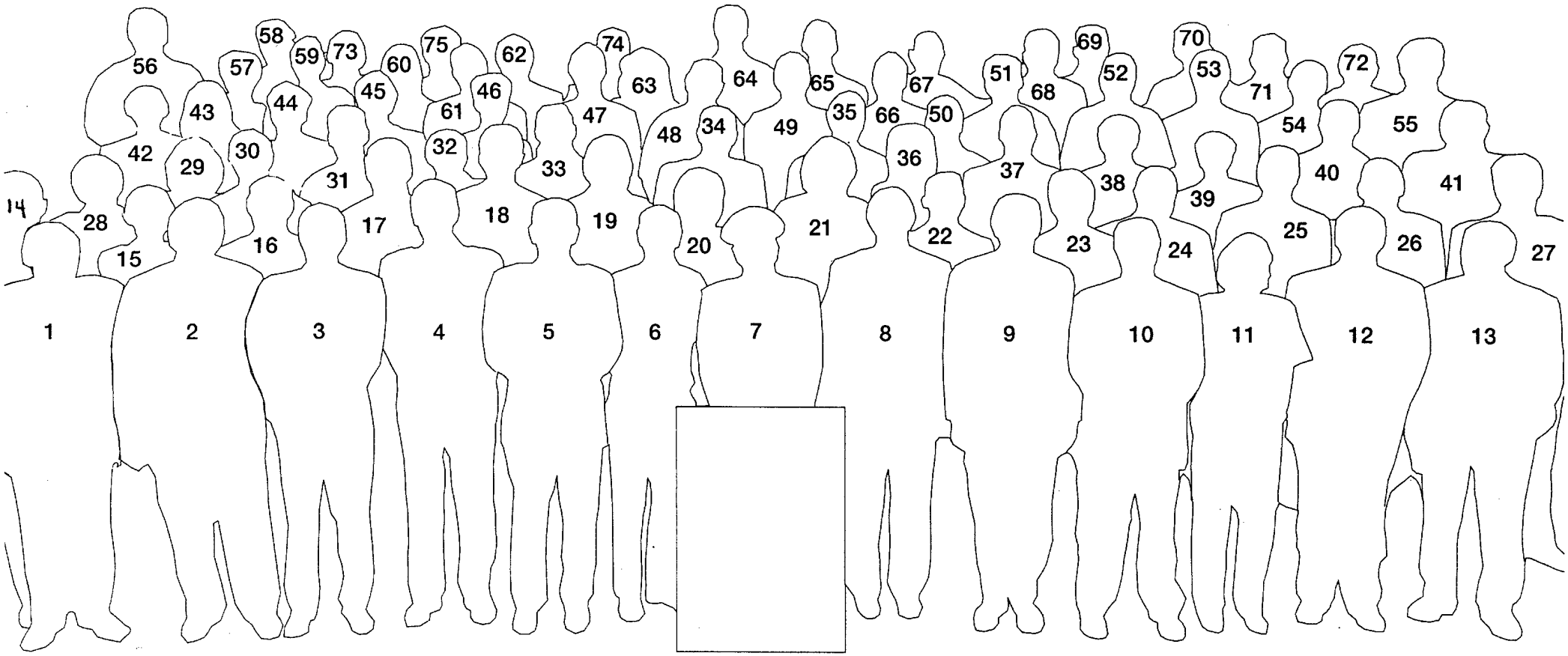
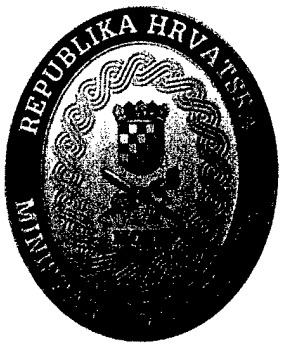


1. Želimir Pavlina, 2. Jan Terelak, 3. Olaf Truszczynski, 4. Zoran Komar, 5. Darko Grdić, 6. Craig Dorman, 7. Vid Stipetić, 8. Frederick Pestorius, 9. Vladimir Kolesarić, 10. Ernesto Bonelli, 11. Katerina Bernardova, 12. Hans Jurgen Haettig, 13. Herbert Aschenbrenner, 14. Tomislav Filjak, 15. Suzana Štefan, 16. Igor Vodyanoy, 17. Sergej Lytaev, 18. Janis Turks, 19. Zanda Dišlere, 20. Irena Leko, 21. Sandra Jovanović , 22. Dylan Schmorrow, 23. Arthur Graesser, 24. Wolfgang Weber, 25. Joseph Caruana, 26. Mirko Drenovac, 27. Trpimir Jurić, 28. Vesna Trut, 29. Biserka Koren, 30. Sten Martini , 31. Patrick Boss, 32. Kate Haysman, 33. Jiri Klose, 34. Gheorghe Pertea, 35. Sandro Traversi, 36. Elena Boradjieva, 37. Carl Castro, 38. Michael Drillings, 39. Amy Adler, 40. Joao Silveira, 41. Ivan Čeko, 42. Vesna Žarak, 43. Maja Čepulo-Komar, 44. Kristina Pollack, 45. Dijana Denačić, 46. Beatrice van Zevenbergen-Snel, 47. Hans Jetten, 48. Tomaž Kovač, 49. Francois Lescreve, 50. Jadranka Sekula Golubiček, 51. Marko Romić, 52. Michael Court, 53. Daniel Strobl, 54. Tiago Matoso, 55. Boris Milavić, 56. Goran Tišlarić, 57. Sanja Bender-Horvat, 58. Željko Salamunić, 59. Renata Bebek, 60. Vesna Trutanić, 61. Jacques Mylle, 62. Vlastimil Tichy, 63. Nikica Stražičić, 64. Mikkel Jepsen, 65. Fuad Ibrahimpašić, 66. Christian Lohwasser, 67 Luc Leveille', 68 Fulvio Giardina, 69 Reinhard Mackewitsch, 70 Mark Nickerson, 71 Mladen Trlek, 72. Aurelio Pamplona, 73. Zoran Šimić, 74. Anto Zelić, 75. Klaus Arnd

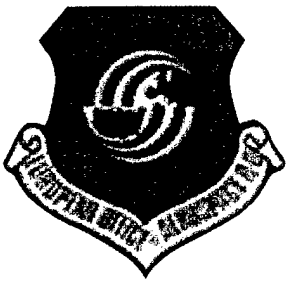
HOST



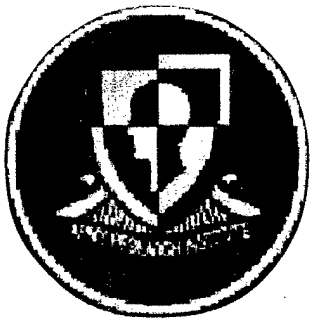
Ministry of Defense of The Republic of Croatia

SUPPORTERS

Office of Naval Research



European Office of Aerospace Research and Development



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