The Bulgarian Military Education at a Crossroads

Dr. Todor TAGAREV

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DISCLAIMER

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Preface

The Bulgarian system of military education is the most important source of officers for the Armed Forces. More than ninety percents of the Bulgarian officers are graduates of one of the three service academies. Furthermore, the graduation of the "G.S. Rakovski" Military College of the General Staff is a prerequisite for an appointment at commanding positions above battalion level, and the completion of the newly established strategic course at the "Rakovski" college - a requirement for command positions above brigade level. Therefore, we examine the quality of military education as a factor determining the future of the Armed Forces.

Since the 1960s, the service academies provide higher education to their graduates. Shaped after the Soviet style, the five-year long education at the academies is highly specialized with a strong emphasis on engineering sciences. This specialization reflects the compartmentalization of the Armed Forces, and continues during the officer education at the "Rakovski" military college. Although such education might have been rationalized in the years of the Cold War, in the author's opinion, it does not meet security, technological, and organizational demands of the post-Cold War era.

The current requirements to military education are shaped by the new world political order, economic, technological, and legal factors, and the development of Bulgarian democratic institutions. Some of these are general for military educators worldwide, while others are specific for the present situation in Bulgaria. Of a particular importance is the role of the military education for the development of democratic civil-military relations in Bulgaria. The most important single factor demanding change, however, is

the Information Revolution and the corresponding Revolution in Military Affairs. More than ever, military must be educated to anticipate change, cope with ambiguity, question traditional boundaries, and lead organizational transformation. To be effective, Bulgarian military needs a rapid transformation. The Bulgarian system of military education and the people responsible for it have the unique opportunity to lead in this transformation. They will either lead it or military colleges and academies will become anachronisms.

1. CHANGE, MILITARY, EDUCATION

- *Victory smiles upon those who anticipate the changes in the character of war, not upon those who wait to adapt themselves after the changes occur.*

Giulio Douhet

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Providing security in a rapidly changing and unpredictable world is a foremost task of every government - a task shaped by political, cultural, and technological characteristics of a nation and the potential of its people. Maintaining national security still depends to a large extent on the military, their morale, motivation, and specialized skills which are influenced by their academic background, professional education, and training.

After the end of the Cold War, profound changes shape the international politics. The countries from Central and Eastern Europe, including Bulgaria, are undergoing unprecedented transition from a centralized authoritarian rule to democracy. Revolutionary changes place information and knowledge at the core of national influence and military power. Budget cuts and technological developments are pushing for smaller and more flexible forces. The growing complexity of forces and missions requires a new level of weapon systems integration and organizational change.

To cope within such environment, we need military who anticipate change, who can deal with ambiguity and uncertainty, who can break traditional boundaries and lead organizational change even with the risk of questioning authority. There is no better place to prepare such people than in the system of military education.

In the current research report, we examine the characteristics of the environment in which the Bulgarian system of military education is undergoing evolutionary changes. Examined in detail are the requirements to military education placed by changing missions, revolutionary changes in

warfare, concerns for personnel, the process of transition to democracy in the country, the economic situation and the resultant severe financial constraints, and the profound changes in the legal framework. As a result, there is a shift of the emphasis in curricula of military academies and colleges, and we outline main parameters of this shift. Finally, the Information Age not only places requirements, but also provides opportunities to meet them. We conclude that the organization of military education has the chance to lead the changing military in the twenty-first century. It either becomes an agent for change or anachronism. Which will once more confirm the quoted words of the great Italian airpower thinker Giulio Douhet.

2. EDUCATIONAL ENVIRONMENT

The environment in which the Bulgarian system of military education functions can be characterized by several main factors. Some of them are general for any society at the end of this century, and others are specific for the transition in Bulgaria. The first group encompasses the changing international political situation, corresponding changes in doctrine and mission, and the impact of the Information Revolution. The second group incorporates the specifics of the Bulgarian transition towards democracy, the severe financial constraints, and the abrupt change of the legal framework.

The changes in the *international politics* brought the end of the 'simple and stable' opposition of the Cold War. Answers to questions concerning players, capabilities, intentions, and perceptions, are not readily available anymore. Military students may nor presume who their opponent or coalition partner would be and how they would act.

New threats appeared and threat perception is changing. Terrorism, and especially international terrorism, international drug trafficking and organized crime are becoming targets of the military worldwide.

Respective doctrinal changes are taking places. New missions appear, i.e., international peacekeeping missions under the United Nations or the Organization for Security and Cooperation in Europe, and the emphasis is shifting towards participation in international missions, coalition warfare, peacekeeping and peacemaking missions, thus requiring from the military student a qualitatively new level of ethnic, religious, cultural, ecological, and human rights awareness.

The influence of technology, and the *information technology* in particular, is overwhelming. It impacts the process of planning and conducting military operations, organization, communication, command and control,

intelligence, procurement, education and training. A new kind of warfare emerged - Information Warfare.

The domestic political situation influences the military in two main directions: orientation of The Republic of Bulgaria toward integration in European and Euroatlantic security structures and building democratic institutions. The first requires education and training of the military for cooperation with new partners through participation in the Partnership for Peace program, leading the way to future *interoperability of military forces*. The latter is primarily concerned with building of *democratic civil-military* relations in Bulgaria. Both demand a stronger emphasis on leadership and cultural awareness of the military.

The preparation for such missions are taking place in a declining economic situation, financial limitations, and *force reduction*. Furthermore, democratic transformations are paralleled by changes in attitudes of the population. Armed forces are faced by changing patterns of behavior and changing motivations of society at large (Gilman and Herold, 1993). Changes in the value system of the Bulgarian society reflect in an emphasis on the 'occupational' versus the 'institutional' trend in the attitudes toward the military profession (Williams, 1995).

Finally, part of the process of democratization are the corresponding changes in the legal basis of the society. For example, the new Bulgarian Constitution places the military under a generally elected civilian as a Supreme Commander. The new *Law on Defense and the Armed Forces* further elaborates the implementation of democratic principles to the civilian control of the military. Of particular importance for the military education is the new *Law on Higher Education*, introducing new (for Bulgaria) academic degrees and a system of accreditation of the institutions for higher education, including the service academies and the "G.S. Rakovski" Military College.

Some of the factors outlined place short-term, and others - long-term requirements to the system of military education, which are examined in the following two sections of this paper.

3. REQUIREMENTS TO MILITARY EDUCATION

- *Education is a two-edged sword. If it indoctrinates with rigid principles, constantly hammering home the fixed and immutable nature of those principles, and if it offers neat solutions to every human problem in terms of these fixed principles, then change and development cannot take place.*

To cope with the factors of change or to use them to our own advantage, we need military who are critical thinkers, officers who can anticipate the change and deal with ambiguity and uncertainty, leaders who can promote organizational change in the face of traditional attitudes and adverse economic situation.

Bulgaria and Bulgarian military do not need **an** educational system. Reaction, and even more so - the delayed reaction, of the educational system to demands of time will doom our military to low effectiveness, futile resource spending, and loss of the brightest and most able young people. We need a proactive system for military education, leading doctrinal and organizational changes in the Armed Forces - a system which will provide the people for the Armed Forces of the next century.

In this and the following two sections of this paper, we outline the requirements to such military education.

3.1. Mission requirements

After the end of the Cold War the possibility for a large scale conflict has decreased significantly. The new missions require an increase in international, interagency, and interservice cooperation. The Bulgarian participation in a limited or a low-intensity conflict as a coalition partner requires from the officers, at least from the higher ranking commanders, more diplomatic skills and unconventional decisions than specific military skills. This is even more important when troops are used in the relatively new and broadening tasks of peace-keeping and peace-enforcement operations under the UN flag. These new missions demand from the officers, often even on a platoon level, deeper knowledge of psychology and social behavior, languages, history of the conflict, cultural and religious peculiarities of the fighting factions. Communication skills on every level become critical (Gray and Tagarev, 1995). A proper attitude of an educated officer can speed up the solving of the conflict and lower the casualties among the soldiers, as well as among the civilian population.

So far, another dimension of the use of military force--the ecological impact--has been largely unaddressed by the Bulgarian military. However, the ecological dimension of a military operation could affect both the circumstances under which the Armed Forces are used and the way they are used (Rokke, 1995). The area of ecology is still to receive attention from our military educators.

3.2. Preparing for twenty-first century warfare

Perhaps no single factor has as much potential as the *information explosion* for changing the way in which military organizations function during peace and war (Rokke, 1995). Breakthroughs in sensors, information processing, communications, and visualization will make huge amounts of information available to the individual soldier, sailor, and airman. Time will shrink, and space will expand. Furthermore, emerging technologies will allow knowledge-level information to become largely the responsibility of computers rather than responsibility of individuals (Shalamanov and Tagarev, 1996). To effectively implement these technological developments, military needs unprecedented delegation of decision-making authority, decentralization, and flatter organizational structures.

In the author's opinion, however, the current organization of the Bulgarian Armed Forces is characterized by strict hierarchical command structure with very detailed planning, combined with an absence of sound procedures and adequate means for consultation, situation assessment, decision-making and operational control. To overcome these problems, the emphasis of the education and training of military personnel should be put on critical thinking; value orientation towards professionalism, ethics, and cooperation; good academic background in the field of Operation Research, System Analysis, Artificial Intelligence, Networking, Organization of Life Cycle Support; command of foreign languages, law and economics competence, as well as development of research experience and strive for quality.

3.3. Personnel challenges

Challenges such as new warfare forms, combined with the technical environment, will mean that officers have to be more comprehensively trained, less specialized and will have to cycle back through school often during their careers. They will need a broader range of skills in order to be more flexible (Spacecast, 1995). Secondly, from a point of view of career, retirement from the military is not really a retirement but merely a change of careers. Therefore, to respond to personnel challenges, to contribute to the recruiting and retention of the best-qualified personnel, professional military education must tailor its education to individual needs.

The need to have a better educated and trained force requires continuous education that involves every military member, allowing individuals to broaden their experience and become educated in areas outside their primary career fields. For a commercial environment, Tom Peters (1991) outlined the following principles: (1) invest in human capital as much as in hardware; (2) train entry-level people and then retrain them as necessary; (3) train everyone in problem-solving techniques to contribute to quality

improvement; (4) train extensively following promotion to the first managerial job, then train managers every time they advance; and (5) use training as a vehicle for instilling strategic trust. Military education can and must apply these principles to provide quality people for the Armed Forces.

After the examination of general requirements to military education for the Information Age, let's turn to those challenges specific for the Bulgarian military education in the transitional period. At the end of this section we examine requirements, placed by financial constraints and legislative developments. The specifics of the Bulgarian transition to democracy and related demands towards military education are examined in the next section.

3.4. Education in a shrinking military

The system of military education has to cope both with the problem of force reduction (examined qualitatively) and with its impact on attitudes and behavior of military members.

In the author's opinion, the attempts to preserve the system of highly specialized education at the new force levels are doomed to fail. Among the reasons for such a grim forecast are changing personnel characteristics, lower incentives to retain highly qualified faculty members, and nearing problems with accreditation of institutions and specialties.

The impact of downsizing is further aggravated by the severe financial limitations not only for the combat training, but in the everyday functioning of the military. When there is a perception that the military has broken its "psychological contract" to care for its people, loyalty to the organization is reduced. This has a detrimental effect on the military, and leads to more "occupational" as opposed to "institutional" motivations among military members (Williams, 1995).

Williams (1995) further elaborates that even a more serious possibility exists - the survivors of downsizing may feel that they have been abandoned by a society, which in its pursuit of new values sacrificed the job security, career progression, combat readiness, and the quality of life of its military. Such changes in attitudes may result in a widening of the gap between the military institution and the society it serves and raises the serious potential for what Morris Janowitz described as 'unanticipated' militarism.

Answers to such problems are not readily available. We can only outline the general direction for adaptation to reality - keep in touch with the world, change organization in time, and respect your people.

3.5. Legal requirements

Currently, the reaction of military educational institutions and the bodies for their control (both civilian and military) is aimed at restructuring according to the new educational degrees and requirements stemming from the Law on Higher Education. The new Law envisages three-level educational degrees - 'bachelor', 'master', and 'doctor'. Traditionally, by the time of their commissioning, the Bulgarian officers have higher education. Most probably, the new Bulgarian system of military education will combine initial military training with an accredited academic program for a 'bachelor' or 'masters' degree.

Secondly, the Law introduced a system of accreditation of all Bulgarian institutions of higher education, including the military academies. An *Instruction* on the functioning of a National Accreditation Commission is still in the making. The joint proactive effort of civilian and military experts produced a *Concept for the Reform of the Military Educational System of the Bulgarian Armed Forces*. The latest developments were discussed at a conference on "Military Education: Problems and Tasks" (April 1996) at the Bulgarian Army Academy.

The fulfillment of the legal requirements will be hindered by problems previously outlined. Nevertheless, changes are pending - changes that do not allow delays.

4. EDUCATIONAL SUPPORT FOR DEMOCRATIC CHANGES

One of the main features of democracies is the civilian control over the Armed Forces. Even countries with long-standing democratic traditions pay significant attention to maintaining such control. Main objective of the education, and the military education in particular, in societies where the military is subordinate to political power is "to harmonize professional efficiency and democratic values which are determining factor in the civil-military interrelationship" (Gilman and Herold, 1993). Traditionally, professional men and women tend to stress their special technical expertise which in many cases may lead to alienation from society. To provide professional efficiency without such an alienation, the education of officers (and future officers) should never be confined purely to the technical aspects. The general academic aspects are equally as vital. In the rapidly changing values and motivations of the society, understanding and accepting the principle of civilian control require constant attention.

Presently, the principle of civilian control of the armed forces is accepted both by Bulgarian military and society. The problems encountered are mainly in the way civilian control is understood and exercised (Pantev, et. al., 1996). These problems are not unique for the countries in transition toward democracy, but in the latter case they are aggravated by:

- the military's understanding of the concept of boundaries between rights and responsibilities of political authority and military (predominantly dichotomous): Even though they accept the principle of civilian control, most senior military leaders consider the responsibility for the formulation of military doctrine, force structure, planning and conduct of operations, promotions, military education and training, as entirely theirs and examine civilian participation as unacceptable. This fact should not be surprising, because historically that has been the case in Bulgaria since regaining independence in 1878;
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- the civilian strategic community is in its infancy, and, practically, there are no civilian experts in military doctrine, force structure and deployment, planning and conduct of operations;
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- low level of relevant knowledge in mass media, and respectively the public.

The result is over dependence on the military for an expert advice. Given the corporate spirit of the military profession, the appointment of a recently retired Vice Admiral as Minister of Defense, and a recently retired General as a Chairman of the Parliamentary Commission on National Security, will hardly help to overcome the problem. Also, given the above mentioned lack of civilian expertise, the heavy reliance on military advice was further strengthened with the reinstitution of the Inspectorate as an instrument for control, exercised by the civilian Minister of Defense.

Furthermore, the military educational system is practically isolated from (civilian) academia, and the continuing compartmentalization of the military education impacts the military profession. Both trends do not support the harmonization of the Bulgarian civil-military relations. Additionally, a recently adopted *Instruction for Postgraduate Qualification of the Officers from the Bulgarian Armed Forces* (1995) gives exclusive rights for planning and control to the General Staff--another contradiction with the principle of civilian control.

Nevertheless, in regard to the current level of civil-military relations in Bulgaria, the following conclusions could be made:

- Although it is a matter of degree, we could reason that the current pattern of civil-military relations in Bulgaria, defined by Johnson and Metz (in Snider and Carlton-Carew, 1995) as dominant even for countries with solid democratic traditions, is for the military to accept or attempt to seize functions that it perceives civilian leaders or agencies as not performing or not performing adequately.

- With the understanding that tensions between the military and the political authority are not unusual and may be even healthy for instituting effective civilian control, the process of establishing democratic civil-military relations in Bulgaria might be regarded as irreversible.

The obstacles in the process of building democratic civil-military relations in Bulgaria are not insurmountable, and the system of military education may play the most significant part in institutionalizing the democratic pillar of civilian control of the military. This statement is supported by the recognition of the importance of military educational institutions for the successful democratic development of the country by the Bulgarian political leadership. A sign, supporting this statement, is the participation of the President and the Prime Minister in the celebrations of the 50th anniversary of the Bulgarian Air Force Academy. This credit of confidence should be fully utilized. An initial study of the role of military education for harmonizing Bulgarian civil-military relations allows to highlight the following areas of influence:

- Preparation of the military to understand and accept civilian control in all its aspects;
- Education and training of civilian defense and security experts (e.g., such attempts were made in Russia and Romania);
- Preparing the society (journalists, youngsters, the public).

5. WHERE TO FOCUS CURRICULA OF MILITARY EDUCATION

- *The new military needs soldiers who use their brains, can deal with a diversity of cultures, who can tolerate ambiguity, take initiative, and ask questions, even to the point of questioning authority.*

Alvin Toffler

The military of the twenty-first century, more than ever, will need *leaders* able to anticipate change, to deal with uncertainty, to present ideas, to communicate vision, and to lead organizational change. There are no ready solutions. Some changes in the emphasis of the curriculum of military academies and colleges, however, cannot be postponed.

5.1. Ambiguity and unpredictability

In the Information Age security environment, the first requirement for the curricula is to ensure that military students do not presume to know who their future opponents or coalition partners will be. This appreciation for uncertainty is the beginning of wisdom in the post-Cold War era (Rokke, 1995). Students must understand more than their predecessors about economics, technologies, and diverse cultures to make sound judgments. The emphasis of military curricula is shifting from preparing managers to preparing leaders.

Following Capozzoli (1995), let's first examine the cognitive difference in the 'Managers vs. Leaders' dilemma.

Managers function in the lower cognitive domain of knowledge, comprehension, and application. Leaders function in the higher cognitive domain of analysis, synthesis, and evaluation. Managers are people who do things right and leaders are people who do the right thing. The difference may be summarized as activities of vision and judgment – *effectiveness* versus activities of mastering routines – *efficienc*y. Capozzoli (1995) provides the following definitions:

Knowledge is the ability to remember facts, terms, concepts, theories, and structures.

Comprehension is the ability to translate communication and the ability to interpret facts, terms, concepts, theories, and structures.

Application is the ability to apply facts, concepts, theories, and structures.

Analysis is the ability to recognize unstated assumptions; the ability to recognize which facts or assumptions are essential to a situation; the ability to distinguish relevant and irrelevant statements in a situation; the ability to identify complex relationships.

Synthesis is the ability to put together elements and parts from different sources to form a whole; the ability to identify patterns or relationships in information and events; the ability to convey meaning by developing a concept, model, or theme; the ability to develop creative solutions and new insights into problems; the ability to tap relevant knowledge and experience without much conscious awareness.

Evaluation is the ability to identify and appraise judgments and values that are involved in a course of action; the ability to apply sophisticated criteria (the highest known standards) to the judging of actions taken.

Fig. 1. From specialized to leadership education (simplified abstract representation).

(1) Current Bulgarian military education; (2) Curricula for twenty-first century

Please, refer to the hard copy.

The dilemma in the military education how to provide balance between the academic and the specialized education, as well as between the humanitarian and the technical education, is not new. In the Information Age, however, the initial educational phase of preparation of a specialist is quickly rendered obsolete by the rate of progress. It is not only special skills and knowledge we should be seeking but a higher level of abstract thinking which can be acquired from a higher academic education and a system of life-long learning. The need to shift the curricula emphasis from specialized to leadership education is depicted, although simplistically, on figure 1.

Insight in the problem is provided by Herold and Radbruch (in Gilman and Herold, 1993):

'Leadership curricula for the military profession have to stipulate specific learning objectives as precisely as possible, but they also have to state interdisciplinary, general learning objectives. Whereas specific objectives may vary, the general objectives will ensure that the corporate unity of the military profession remains intact irrespective of changes in modern society, modern warfare and modern defense policy. These objectives are: participation; creativity; flexibility; critical reasoning; the ability to obtain information and organize it; the ability to communicate and exchange information; social awareness; endurance in conflicts; readiness to accept responsibility and criticism, and the ability to inspire corporate unity.'

5.2. Cultural awareness and human rights

The transition of the Bulgarian society toward democracy, the new international realities, and the cultural changes of the Information Age (Toffler, 1993) require military, well versed in human rights problems. Officers should be aware of problems concerning

- rights of own individual military members;
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- rules of engagement and respective international legislation;
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- rights of the civilian population, especially in peace-keeping and humanitarian missions.

According to McCaffrey (1995) "A great challenge for those of us who serve in uniform is addressing human rights training without suggesting that respect for an enemy, its soldiers, and civilians detracts from the central objective of winning the war. … such respect actually contributes to military effectiveness." Furthermore, disrespect for human rights may lead to the case of winning the war and losing the peace.

The respective shift of military curricula should also address the importance of culture in conflict, in peacekeeping, in everyday military life. We should remember that the main failure of culture is imagination. It's very hard to think outside the boxes--cultural box, institutional box, political box, religious box--that we are all, everyone of us, imprisoned in (Toffler, 1993). Cultural unawareness will keep us imprisoned in our own traditional attitudes and will prevent adaptation of the military to the demands of the Information Age.

5.3. Information revolution

Advances in technology are hardly new phenomena. Recently, however, breakthroughs related to warfare have occurred with greater frequency, more substantial impact on quality versus quantity tradeoffs, and increased organizational implications. The information explosion and the changing way in which military organizations function, both during peace and war, must be reflected in military curricula.

The military student needs an understanding and appreciation of the blurred boundaries among military, diplomatic, economic, media, and psychological tools for influencing an opponent, as well as the specific requirements of interagency and international cooperation. An example of a study of the new dimensions of information impact on security in all aspects is provided in (Shalamanov and Tagarev, 1996).

Information navigation (searching) skills will be critical for all who expect to navigate the rapidly increasing sea of information. The ability to 'navigate' Internet is becoming a prerequisite for effective use of information resources. A recognition of the importance of Internet for the development of modern security institutions is the research workshop, organized by NATO in Budapest earlier this year, in which high-ranking official from both NATO and partner countries took part.

A good starting point for the military student in Internet navigation is the home page of NATO:

http://www.nato.int/

A sample of other Internet sites with diverse information on military education, civilian universities, and various security-related organizations, as well as free-access search engines, is provided in the Appendix.

In conclusion to this section, the most one can do is to prepare the military student for uncertainty. The classic approach to the curricula dilemma is a balance among academic disciplines, the interests and backgrounds of students, and the demands of theory and practice.

6. INFORMATION TECHNOLOGY AND NEW EDUCATIONAL OPPORTUNITIES

- *Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young. The greatest thing in life is to keep your mind young*.
  Henry Ford

Personally, I'm always ready to learn, although I do not always like being taught.
Winston Churchill

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The Information Age technology and its all-encompassing influence not only demand changes, but also provide tools facilitating life-long education. Today's distance learning, multimedia, virtual reality, and telepresence concept allow to develop a new concept of officers education and a relevant restructuring of the military educational system.

Technology enables us to facilitate learning in new and innovative ways and to provide access to the wealth of information available. Schools, academies, and colleges can serve as the catalyst for these changes. Technology cannot substitute for good teachers but can allow a teacher to facilitate and tailor learning for individual students. The emerging concept requires redefining the way military schools are organized and what occurs within the school, as well as rethinking how teachers teach and students learn. Both formal and informal learning opportunities can be fostered. Technology enables this restructuring of the military educational system by (Houston, 1995):

- providing new and more powerful ways for students to receive, understand, and manipulate information;
- enabling students to become active learners;
- escaping the boundaries of a fixed location school to facilitate interaction with people and events in faraway places;

- encouraging international, multi-disciplinary project-oriented education;
- promoting cooperative learning;
- allowing both independent and distance learning opportunities;
- matching teaching methodologies to student's learning styles and preferences;
- developing new ways of assessing student performance.

6.1. Virtual learning environment and distance learning

One can easily imagine a virtual high school, technical school, or university, which provides access to information and expertise that is anywhere in the world. Even difficult concepts, skills, and attitudes might be taught using vivid, three-dimensional and tactile representations of real world objects and issues (Jacobsen, 1993). Multimedia and virtual reality provide effective ways for the military student to acquire technical skills, 'combat' experience, practice in planning and 'conducting' conventional, as well as non-conventional, i.e., peace-keeping, military operations.

Furthermore, Jacobsen (1993) envisions embedding of this kind of learning environment in the work environment, even when the latter is a non-virtual one. In such way, a 'virtual residency' education may provide a system for distance learning. This Information Age education is [not transportation but] communications intensive: The learner can access educational resources produced and distributed anywhere in the world. The application of this concept to the military education has the potential to train more military members, more effectively, for less.

A positive example is provided by the experience of the US Air Command and Staff College in teaching operational art combining multimedia, the college World Wide Web homepage, and dedication of enthusiastic faculty members (Kinner, 1996).

6.2. Continuous education

In the Information Age, formal schooling provides only the first step in a lifelong process of learning and utilizing technology. Learning is truly becoming a life-long endeavor rather than an activity that ends with formal schooling. Thus, students must learn 'how to learn' which means being able to collect, organize, analyze, evaluate, and communicate all types of information. Military students must become active problem solvers and collaborative learners. They must also learn to become effective users of information technology (Houston, 1995).

Their education must be continuous, combined with training, coherent with the whole process of professional development and career planning. A long educational process or training apart from a real practice is not the remedy. The Information Age technology provides means for everyone to learn what they need, at a time they find convenient, from the place they are, in the way they prefer. Furthermore, the new technologies will greatly facilitate comparison shopping for education (Jacobsen, 1993) and will contribute to the emergence of a reliable education assessment system.

A prerequisite is the openness of military academies and colleges to each other, toward civilian universities, as well as toward foreign and international military and civilian colleges.

6.3. Openness of military educational institutions

The telecommunications aspect of military education will have a positive impact not only on the student but on the faculty as well. The strength of an academic department today depends on the extent to which each faculty member is interconnected with other professionals--worldwide--pursuing similar interests.

Furthermore, to efficiently use military resources, information should be shared with other military colleges and services, as well as with civilian institutions, especially in research and curriculum development. For example, for a small country like Bulgaria, and especially in this early stage of more independent and free development, integration and support in the field of education, training and professional development may be achieved through the development of a network of situation centers (Stoichev, et. al., 1994). It is vital to use foreign as well as to build in Bulgaria testbeds as centers for investigations of military needs and capabilities, as well as to increase the effectiveness of military education. The development of open systems, integrated with the international facilities, does not have any real alternative (Shalamanov and Tagarev, 1994).

Such projects can solve the problems of the integration between military and civil structures, because they will use identical products and services in a large area. This is very important for the specialists because they will bring their experience from one field to another which will help their development. On the other hand, we will witness an increase of technology transfer, students experience in adaptation of commercial-off-the-shelf and state-of-the-art technologies to specific military requirements, and the following improvement in effectiveness.

Finally, the system of military education can and should be widely open to foreign counterparts. The integration of the Bulgarian military within

European and Euroatlantic security structures can be achieved after substantial reform in the system of Bulgarian educational institutions and their curricula. The freedom of students to choose and their engagement in real projects at upper educational levels, the increase of their contacts with outstanding specialists in and outside the organization, are the only way to support the reform and to prevent serious mistakes. To answer the demands of the Information Age, future specialists have to be prepared to use analysis tools, state-of-the-art and commercial-off-the-shelf products, to build prototypes and develop open functional systems.

6.4. Bringing military knowledge to the public

The system of military education should be open not only to military and academic partners, but to the general public as well. The opportunities to educate the public are strengthened by the advanced information technology. Information processing and communications advances--for which Internet is an excellent example--allow for the education, i.e., organized by the service academies, of not only military but everyone interested in defense and security.

Telecommunications and open system aspects could contribute to increased understanding and support for the military, giving the future system of military education the capability to reach larger audiences such as the media, parliament, and the public at large (Spacecast, 1995).

To conclude this section, policies for communication and education will together comprise the main distribution components of any overall knowledge strategy (Toffler, 1993). The equipment to implement the concept for continuous distance learning is getting more affordable and user-friendly. The lack of expertise and training is becoming less significant. The American experience shows that management resistance seems to be the most significant factor hindering the development of educational opportunities (Snider, 1996). The first step is to fully understand the dimensions of the problem. Until then, the promise of technology in education will never be fulfilled. And the first step in understanding is to formulate and discuss the problems, which was the aim of this paper.

7. MILITARY EDUCATION AT A CROSSROADS

The Bulgarian system of military education has a long and successful tradition of preparing cadets and officers for a continuous service in the Armed Forces. In this world of unprecedented change, however, traditions are often questioned. Recently, the US military academies (which have an even longer tradition) have been scrutinized by the public and their very existence was challenged (Military Education…, 1994; Shuger, 1994;

Thompson, 1994). The Information Age demands from the military vision, flexibility, and most importantly, people that can not only adapt to reality, but lead organizational transformation.

Currently, the Bulgarian system of military education is evolving slowly within rigid traditional attitudes. This is not surprising, considering the importance of fulfilling the requirements of the *Law on Higher Education* for the very existence of the service academies and "G.S. Rakovski" Military College as institutions of higher education.

The question how to change the military educational system has no clear answers. In our study of different systems for military education we reached the conclusion that neither a 'standard' nor a 'best' system exists. However, under the conditions of rapid social and technological changes we should be looking not for a reactive and adaptive educational system, but for an educational process which is proactive and preemptive. To avoid being placed in a reactive catch-up mode, military educational institutions must take steps now to lead the way, instead of being dragged, into the next century.

Those who are reactive in a world which requires proactive posturing, preservationist in a world which demands preventive posturing, will fail, or even perish. The issue is straightforward: either the military academies and colleges become agents for change within the Armed Forces or they become anachronisms.

Appendix: INTERNET SITES

The list presented here provides only a sample of starting points to navigate Internet for information regarding issues and organizations for military education, World Wide Web sites of civilian universities, as well as Internet sites of security organizations and related research institutions. Four powerful search engines are listed at the end of the Appendix.

Sites of military colleges and academies:

National Defense University, USA:
http://www.ndu.edu/
gopher://marvin.stc.nato.int:70/11/secdef/ndu

Air University, US Air Force:
http://www.au.af.mil/

Air War College, US Air Force:
http://www.au.af.mil/au/awc/awchome.htm

Air Command and Staff College, US Air Force:
http://wwwacsc.au.af.mil/

Squadron Officers School, US Air Force:
http://www.au.af.mil/au/sos/

US Army War College:
http://carlisle.www.army.mil/

Royal Military Academy Sandhurst, Conflict Studies Research Centre (CSRC), England
gopher://marvin.stc.nato.int:70/11/secdef/csrc

National Defense, Canadian Forces College Information Resource Centre, Toronto, Canada
telnet://irc%3B%20%20Password%3A%20irc@library1.cfcsc.dnd.ca:23/

Military Academy Liptovsky Mikulas, Poland
gopher://gopher.valm.sk:70/1

Sites of civilian universities:

Sofia University, Bulgaria
http://www.uni-sofia.bg/

Technical University of Sofia, Bulgaria
http://www.vmei.acad.bg/

University of Mining and Geology, Bulgaria
http://www.mgu.bg/

American University in Bulgaria, Bulgaria
http://www.aubg.bg/
http://www.aubg.edu/

University of Minnesota, USA
gopher://rodent.cis.umn.edu/

Rice University, USA
gopher://riceinfo.rice.edu/

University of Colorado, USA
http://csf.colorado.edu/

University of Nevada at Las Vegas, USA
http://www.unlv.edu/

Stanford University, USA
http://akebono.stanford.edu/

University of Plymouth, UK
http://www.plymouth.ac.uk/

University of Sunderland, UK
http://osiris.sund.ac.uk/

Sites of security organizations and related research institutions:

North Atlantic Treaty Organization
http://www.nato.int/
gopher://gopher.nato.int

Organization for Security and Cooperation in Europe
http://www.fsk.ethz.ch/osce/

SHAPE Technical Center, NATO
http://www.stc.nato.int

US Department of Defense
http://www.dtic.mil/defenselink

Central Intelligence Agency, USA
http://www.odci.gov/cia/

Baltic Regional Research Centre (BRRC)
gopher://marvin.stc.nato.int:70/11/secdef/brrc

Bulgarian Institute for Security and International Studies (ISIS)
http://www.mgu.bg/pages/isis.html

Caucasian Institute for Peace, Democracy and Development (CIPDD)
gopher://marvin.stc.nato.int:70/11/secdef/cipdd

Center for Security Studies and Conflict Research, ETH Zurich
http://www.fsk.ethz.ch/fsk/
gopher://marvin.stc.nato.int:70/11/secdef/eth

Danish Institute of International Affairs
gopher://gopher.ethz.ch:70/00/fsk/Other_Institutions/.snu

Foreign Military Studies Office (FMSO)
gopher://marvin.stc.nato.int:70/11/secdef/fmso

The George C. Marshall European Center for Security Studies, Garmish, Germany
http://marshall.adsn.int/marshall.html
gopher://marvin.stc.nato.int:70/11/secdef/marshall

Institute of International Relations in Prague
gopher://marvin.stc.nato.int:70/11/secdef/iirp

International Peace Research Institute, Oslo (PRIO)
gopher://marvin.stc.nato.int:70/11/secdef/prio

Lemnitzer Center for NATO and European Community Studies
gopher://marvin.stc.nato.int:70/11/secdef/lem

Netherlands Institute of International Relations Clingendael
gopher://marvin.stc.nato.int:70/11/secdef/cling

Norwegian Institute of International Affairs (NUPI)
gopher://marvin.stc.nato.int:70/11/secdef/nupi

Stiftung Wissenschaft und Politik (SWP), Germany
gopher://marvin.stc.nato.int:70/11/secdef/swp

Stockholm International Peace Research Institute (SIPRI), Sweden
gopher://gopher.sipri.se:70/1
http://www.sipri.se

Ukrainian Center for International Security Studies
gopher://gopher.ethz.ch:70/00/fsk/Other_Institutions/.uciss

Search engines:

http://www.yahoo.com
http://www.lycos.com
http://www.webcrawler.com
http://guide.infoseek.com

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About the author

Todor Dimitrov Tagarev - (b. 1960), Major in the Air Force reserve, Research Fellow at the Bulgarian Academy of Sciences, Ph.D. in Electrical Engineering. Specializes in information aspects of security, computer modeling and prediction of security and defense related processes. Associate of ISIS.

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