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paper 40

European Union (EU) enlargement and its consequences for Europe's defence industries and markets

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Published by

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Summary

The eastward enlargement of the EU is accompanied by the accession of four new member states from Central and Eastern Europe, the Czech Republic, Hungary, Poland and Slovakia, as well as the inclusion of Bulgaria and Romania in 2007 and the integration of their defence industry infrastructures into the EU defence industry base. The accession of new member states and the integration of their defence industry infrastructures into the EU will inevitably have an impact on Europe's defence industry base and the possible creation of a European defence market. However, the kind of impact that the new member states will have on Europe's defence industry base and, in particular, on the creation of the European Armaments Agency (EAA) remains to be seen. As yet very little can be predicted with certainty, as the agency has not yet been formed. The far-fetched idea of creating the EAA might become a reality in the not so distant future, some time after 2004. This issue is discussed in Chapter 3. The managers of the six Central and East European defence industries intend to join and are very interested in participating in the European defence market and the EAA, bringing with them their own capabilities. However, this interest and participation come at a cost, which is something the managers ought to be aware of. Whether the European defence industries and their managerial teams will be interested in integrating these new capabilities and to what degree is not yet clear. After all, the European defence industries are going through a very difficult time with low defence budgets, a sharp cut in domestic orders, the existence of a large number of duplicate facilities and the increased competition from the USA. A further process of mergers, acquisitions and integration within Western Europe might have a long-term effect on new EU members. Companies from Central and Eastern Europe that are selected for acquisition and integration will have their future survival assured as part of the European consolidated defence industry. The others might be supported for a while by the state and/or will have to leave this sector altogether. This issue will be broadly dealt with in Chapter 2.

During the last ten years, the six countries have lost a considerable share of the world's arms market; this has directly affected their financial situation. In spite of that, some countries have succeeded in penetrating new markets, while others have not. Undoubtedly, the Polish armoured industry remains at the top. The Slovak armoured sector has the potential to remain in the business and prosper in the future. The Romanian aerospace

industry remains strongly in the business. The Czech Republic, Hungary and Bulgaria face a very difficult time at present, not to speak of the future. Their defence industries will have to go through a very serious restructuring process and implement lay-offs. Time is no longer on their side because the transformation of the defence industries of the six countries has not been at the top of the countries' agendas over the last ten years and, as a result, the countries have lost their momentum. In spite of the financial difficulties, which will be presented below, the six countries still plan to purchase military items. This purchase of military items turns the six countries into very important markets for EU member states and the USA, as the world's arms sales have sharply declined in the last twenty years. The purchases will bind them to Europe and the USA for years to come.

The countries' financial situations related to procurement are directly reflected by the defence budgets as discussed below. That about 2 percent of the gross domestic product (GDP), or slightly more, is spent on defence does not necessarily mean that the 2 percent will go for procurement. Although procurement of military items (as detailed in Chapter 3) remains on the countries' agendas, the most likely dates for further procurements have been postponed from now to around 2007-2010 and beyond. The so-called political preferences involved are discussed below. Undoubtedly they are significant, however, we must not overstate their importance. There are also some other factors that are proffered for discussion in the Conclusion.

Any general information pertaining to the Central and East European defence industries is fairly sparse. However, the reader will find the most important publications on this topic in the Appendix.

The preparation of this report would not have been possible without the help of a number of people. My special thanks go to the interviewees: Slawomir Kulakowski, President of the Polish Chamber of National Defence Manufacturers, Major General (Ret.) Jaroslav Vulec, Assistant to the First Deputy Minister of Defence of the Czech Republic, Geza Peter Kovacs, President of the Hungarian Defence Industry Association, and Todor Tagarev, Director of Programme at the Centre for National Security and Defence Research under the Bulgarian Academy of Sciences.

My special thanks go to Wojciech Luczak, Editor of the Defence Monthly Report (in Polish), Peter Dudak, State Counsellor at the Department of Industrial Policy within the Slovak Republic Ministry of Economy (MoE), Janos Szabó, Director-General of the Office for Strategic and Defence Studies within the Ministry of Defence (MoD) of Hungary, Marian Ilie,

Personal Adviser to the Deputy Minister at the Romanian Ministry of Industry and Resources (MoIR), Air Flotilla Brigadier General Ion-Eftimie Sandu, Deputy of State Secretary and Chief of Armaments Department within the Romanian Ministry of National Defence (MND), and Bozhidar Penchev, State Expert at the Directorate Sector Analysis within the Bulgarian MoE, for e-mailing me valuable information concerning the project.

Last, but not least, the preparation of the current report would not have been possible without affiliation to the Stiftung Wissenschaft und Politik (SWP) and the Research Institute of the German Council on Foreign Relations (Deutsche Gesellschaft fuer Auswaertige Politik/DGAP). I am very grateful to Christoph Bertram and Eberhard Sandschneider, Directors.

Berlin, October 2004

Acronyms and Abbreviations

ADISR	Association of the Defence Industry of the Slovak Republic
AFV	armoured fighting vehicle
AGS	Alliance Ground Surveillance (project)
AMV	armoured modular vehicle
ANP	Annual National Plan
AOP	Associace obranného prumyslu Ceské republiky/Association of the Defence Industry of the Czech Republic
APC	armoured personnel carrier
ARP	Agencja Rozwoju Przemyslu/Industry Development Agency
AT	advanced trainer
ATGM	anti-tank guided missile
ATGW	anti-tank guided weapon
ATMOS	autonomous truck mounted system
BAE	British Aerospace Systems
Bgl	Bulgarian leva
BICC	Bonn International Center for Conversion
C2	command and control
C3I	command, control, communications and intelligence
CASA	Construcciones Aeronauticas SA
CLS	Ceska Letecka Servisni
COMECON	Council for Mutual Economic Co-operation
CPW	Centrum Produkcji Wojskowej/Military Production Centre
CTM	Centrum Techniki Morskiej/R&D Marine Technology Centre
CzKc	Czech Republic koruna
DAC	Danubian Aircraft Company
DGAP	Deutsche Gesellschaft fuer Auswaertige Politik / Research Institute of the German Council on Foreign Relations
DICOM	Digital Communications
DMS	Diehl Munitionsysteme
EAA	European Armaments Agency
EADS	European Aeronautic Defence and Space Company
EDA	European Defence Agency
EU	European Union
EW	electronic warfare

FDI	foreign direct investment
GDP	gross domestic product
GIFAS	Groupement des Industries Françaises Aéronautiques et Spatiales
GPS	global positioning system
HE	high energy
HSW	Huta Stalowa Wola
Huf	Hungarian forint
IAI	Israel Aircraft Industries
IAR	Intreprinderea Aeronautica Romana
IDEE	International Defence Equipment Exhibition
IFF	identification friend or foe
IFV	infantry fighting vehicle
IISS	International Institute for Strategic Studies
ILS	instrument landing system
IT	Information Technology
JSC	joint-stock company
JSF	joint strike fighter
KAI	Korean Aerospace Industries
KMW	Krauss-Maffei Wegmann
LCA	light combat aircraft
LOI	Letter of Intent
LOM	Letecke Opravny Malesice
LOT	Letecke Opravovne Trencin
LOT	Laser and Optical Technologies
Ltd	limited
LZ	Letecke Zavody
Marconi LANS	Marconi Land and Naval Systems
MBT	main battle tank
MLRS	multiple launch rocket system
MND	Ministry of National Defence
MoD	Ministry of Defence
MoE	Ministry of Economy
MoIR	Ministry of Industry and Resources
MoU	memorandum of understanding
MP	Member of Parliament
MPA	maritime patrol aircraft
MTABU	multipurpose armoured vehicle
MTLB	armoured military vehicle
MTLB-V	towing carrier
MTLB-VM	light multipurpose towing carrier
NATO	North Atlantic Treaty Organisation
NBC	nuclear, biological and chemical

OCCAR	Organisation Conjointe de Coopération en matière d'Armement/Organisation for Joint Armaments Cooperation
PATROMIL	Asociatia Producatorilor din Industria de Aparare din Romania/Romanian Defence Manufacturers Association
P&WC	Pratt and Whitney Canada
PN	Polish Navy
PPO	industrial defence potential (companies)
PSLM	Povazske Strojarne Letecke Motory
PZL	Polskie Zaklady Lotnicze/Polish Aviation Factory
R&D	research and development
RAF	Royal Air Force
RSK MIG	Russian Aircraft Corporation
Rtd	retired
SAR	search and rescue
SHC	shareholding company
SKs	Slovak krona
SMW/NSG	Stocznia Marynarki Wojennej/Naval Shipyard Gdynia
SODETA	Company for Economic and Technical Development in the Aviation Industry
SPAAG	self-propelled anti-aircraft gun
SPG	self-propelled gun
SWP	Stiftung Wissenschaft und Politik / German Institute for International and Security Affairs
Tacan	tactical air navigation (system)
TNNL	Thales Naval Nederland
TURMS-T	tank universal reconfiguration modular system
UAE	United Arab Emirates
UAV	unmanned aerial vehicle
UK	United Kingdom
VLTSU	Vojensky Letecke Technicky a Skusobny Ustav/Military Aviation Technical and Testing Institute
VMZ	Vazovski Mashinostroitelni Zavodi / Vazov Engineering Works
VOP	Vojensky Opravarensky Podnik/Military Repair Depot
WEAG	Western European Armaments Group
WEAO	West European Armaments Organisation
WZM	Wojskowe Zaklady Mechaniczne / Military Mechanical Works
ZM	Zaklady Mechaniczne

Introduction

1 May 2004, nearly fifty-nine years after the end of World War II, marked an unprecedented turn of events. Namely, four new member states from Central and Eastern Europe, the Czech Republic, Hungary, Poland and Slovakia became full members of the European Union. Bulgaria and Romania will access to the EU in 2007. Their entry means that they will bring with them important defence industry infrastructures, highly skilled work forces and experience as well as expertise in the design, development and manufacture of military goods that, for instance, other new member states such as Estonia, Latvia, Lithuania (the so-called Baltic States), Cyprus, Malta and Slovenia do not possess. In addition, the four countries' armed forces, which are currently in the process of transformation and shrinkage, will need to be re-equipped with new weapon systems in about 2007-15. The arms markets of the new members close to the European Union have already become a battleground between the EU and the US (with Poland as a notable example) and the importance of new markets will increase as the countries' procurement orders begin to be fulfilled in the years to come.

The importance of new markets close to the EU, the engagement of these countries in EU foreign and security policy agenda and the potential of successfully integrating the six countries' infrastructures into the EU might strengthen the cohesiveness of the enlarged union, contribute to the emergence of a leaner but meaner defence industry infrastructure and, hopefully, enhance co-operation between the defence industries of the EU member states. These are important areas for the present study to focus on, giving a clear picture of the current and future problems for the countries involved in this study and the problems that may lie ahead. In order to tackle these problems, I intend to present as comprehensive picture as possible of the six countries' defence industry infrastructures and point out their strengths and weaknesses. The Appendix will list websites of defence companies operating in the new member states.

Undoubtedly the six Central and Eastern European states examined in this report differ from one other in almost every aspect, including their respective defence industries. Their defence industry infrastructures differ from country to country in size and design (e.g. in Hungary, Bulgaria and Romania the companies have both defence and civilian production facilities), the number of enterprises in which they are involved, the number of employees, the type of ownership and financial performance.

To give an example, the Czech Republic employs about 25,000 people; Hungary remains the smallest state with somewhere between 1,500 and 3,000 employees; Poland's official figure of 30,000 employees is contradicted by Slawomir Kulakowski, President of the Polish Chamber of National Defence Manufacturers, who stated in an interview with the author that there are 60,000 employees.[1] Slovakia employs between 3,803 and 3,992, while Bulgaria employs 25,000 and Romania employs 18,500. Official data relating to the number of employees in the Slovak and Polish defence industries, particularly the number of enterprises within the Polish defence industry, cite Ministry of Economy (MoE)-affiliated enterprises and their work force in general.[2] Other sources, however, also cite the Ministry of National Defence (MND)-affiliated enterprises.[3] As a result, there is some discrepancy between the sources in the numbers given. In this study, I cite the total number of Polish enterprises under the MoE- and the MND-aegis and privately-owned companies as well as their employees. The figures known to us (which might not necessarily be the total) are 54 companies and 60,000 employees. In the case of Slovakia, there are large discrepancies: 1,081 as against 3,883-3,922. (See 'Slovakia: General Information'.) This important discrepancy is highlighted by the author in this study.

In spite of the large number of defence enterprises discussed below, very few of them have gone through any substantial restructuring, privatisation or streamlining. Thus, their integration into the European Union defence industry infrastructure will take longer to accomplish than is presently expected. In addition, very few of them are really profitable and successful. Their success can be judged by their arms exports to new markets in the last several years.

It was not so long ago that Central and Eastern European countries sold military goods to customers in Africa, Asia, Latin America and the Middle East. Since they started on their journey

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1 Interview with Slawomir Kulakowski, 3 April 2003.

2 For the number of Polish defence industry enterprises under the MoE aegis, see New Europe, 22-28 February 1999; Jane's Defence Weekly, 17 March 1999, p. 18; Aviation Week and Space Technology, 22 March 1999, p. 60; W. Luczak, "The Polish Defence Industry Towards a New Shape", Military Technology, April 1999, pp. 44-45; T. Hypki, "The Polish Defence Industry Restructuring Programme", Military Technology, August 1999, pp. 28-29; Jane's Defence Weekly, 27 October 1999, p. 18; Defense News, 1 November 1999, p. 20; Military Technology, August 2000, pp. 40-41; New Europe, 17-23 December 2000; Military Technology, June 2002, p. 8.

3 J. Klich, "The Role of Defence Economy in the Polish Economy", in NATO Co-operation, p. 83; Jane's Defence Weekly, 21 August 2002, p. 16; 16 April 2003, p. 23 and p. 26.

Adjustment to EU's stringent arms export control policy

to become members of North Atlantic Treaty Organisation (NATO) and the EU, they have begun to adjust their arms export control policies to those of NATO and the EU. This basically means that although just a few years ago they were able to deliver arms to so-called undesirable states, today they are prohibited from doing this and need to follow the EU stringent arms export control policy. Accordingly, they have lost the above-mentioned markets and their competitiveness has decreased sharply. Nevertheless, Poland, Romania and Slovakia, in particular, have succeeded in penetrating new markets.

On the other hand, some countries have unrealistic expectations with regard to their present and future status. The Czech Republic aerospace industry, for instance, has the ambition to remain in the business as a contractor, although it is very clear that it is no longer in that league. In other countries, such as Hungary, Poland, Slovakia and Bulgaria, the managers of the aerospace sector clearly understand that their sector might only be able to play second fiddle in the Western European market. Romania was, and still is, a special case as the flagship of the aerospace sector, Aerostar SA, was not only privatised but also restructured, retooled, and acquired valuable expertise by working with the Israeli-based company Elbit Systems Limited (Ltd). In addition, several other Romanian companies worked with Elbit thus substantially improving their internal cohesion and skills. As a result, the Romanian aerospace sector will remain in the forefront, and continue to operate both as contractor and subcontractor.

In the armoured sector, Central and Eastern European countries might try to keep their facilities. However, it is clear that in the long run they will need to downsize them substantially. (Poland's intention to create a newly merged group, namely the Bumar Group, discussed below, might shed light on whether the present effort will lead to a successful transformation or whether the results will be half-baked.) It is no longer a question of `if and when´ but of how to achieve this without inflicting too much damage on their work force. Bulgaria, on the other hand, is a country with a well-known small arms industry, which, however might not be able to survive in the future because of the stringent arms export control of small arms. On the other hand, some Bulgarian small arms manufacturers will operate as subcontractors for Western European companies (see Section 2.4: Bulgarian Subcontract with Western European Company in Small Arms Sector). The present and future of the Czech Republic small arms industry remains uncertain. The electronics sectors of the six

countries involved are likely to be further downsized and/or will have to disappear from the scene altogether.

The potential for internal Central and Eastern European co-operation in procuring new weapon systems and upgrading the older ones is very limited because of their disjointed common interests. The single and most well-known co-operative programme between the Visegrad Four nations (the Czech Republic, Hungary, Poland and Slovakia) is the Mi-24 upgrade, but even this programme is unlikely to go ahead as a result of the individual nations' pursuit of their own programmes. The main aim of the defence industries now is co-operation with Western Europe and the NATO member states. However, co-operation with Western Europe remains for the time being moderate (for further information on co-operative projects/programmes, see Section 2: Industrial Co-operation) and undoubtedly both sides can be blamed for that. Although Russia succeeded in making some inroads into Central and Eastern European markets, the results are short term because the six countries will probably procure new military items some time between 2007 and 2015. These new items, as I shall discuss in due course, will be purchased from either Western Europe and/or the USA. Thus, Russian manufacturers will be sidelined, although there remain lingering hopes in Russia that they may still have a chance of getting a slice of the market. The idea of joint procurement of new weapon systems was first debated in 1994, however, the Polish acquisition of the US-built aircraft in 2002-03 put the idea and the debate to an end.

Co-operation with Western Europe and the NATO

Another aspect of the study that needs to be stressed from the very start it the defence budgets of the countries involved. These have either remained stable or have substantially increased in the last two to three years. The six countries' defence budgets are discussed below.

Finally, the procurement issue was and still is the most important issue for the six countries treated in the study. Procurement policy entails not only the outright purchase of multirole fighters and various types of land forces vehicles but also the training of pilots (namely the switching from Soviet to Western aircraft and acquiring the new skills needed to fly them), technicians and ground personnel, maintenance and support staff and the after-sales purchase of spare parts. The entire process is bound to tie the Central and Eastern European states to the West for the next twenty-five years at least, if not longer. This is undoubtedly one of the ways of integrating the Central and Eastern European states into the EU and binding them to the USA.

Section 1

1.1 EU new members and their defence industry capabilities

Czech Republic

General Information

Defence budget

In 1999, the defence budget of the Czech Republic amounted to $US1.1 billion.[4] The same source also reported that the Czech Republic's defence budget was set at CzKc (Czech Republic koruna) 45 billion ($US1.09 billion) for 2000.[5] The defence budget for 2001 was $US1.187 billion and for 2002 it was $US1.622 billion.[6] Another source noted that the Czech Republic spends about 2.2 percent of its gross domestic product (GDP) on defence.[7] Miroslav Kostelka, the newly appointed Minister of Defence, stated that the MoD budget has been reduced from 2.2 percent of GDP to 1.9 percent, which means that the armed forces will lose CzKc 58 billion ($US2.1 billion) over the next five years.[8] Kostelka, however, pointed out in an interview with Jane's Defence Weekly that the Czech Republic Ministry of Defence have managed to increase the GDP to 2 percent between 2004 and 2006.[9]

According to the country's official information there are 101 aerospace and defence industry enterprises, divided into seven branches: a) Ammunition, armaments and explosives; b) Armoured vehicles and trucks; c) Aviation; d) Command and control (C2) systems; e) Engineering and chemical equipment and f) Research, design and training centres.[10] Despite the considerable number of enterprises, all of them are currently state-owned and unlikely to be privatised in the near future. Josef Fucik in the book "NATO Co-operation" noted that only about one-third of the 90 (and not 101 as cited above) companies are

4 Jane's Defence Weekly, 12 April 2000, p. 18
5 Idem; 27 September 2000, p. 5
6 International Institute for Strategic Studies (IISS), The Military Balance 2002-2003, London: Oxford University Press, 2002, p. 252
7 Flight International, 16-22 January 2001, p. 33
8 Jane's Defence Weekly, 11 June 2003, p. 5; 18 June 2003, p. 20
9 10 September 2003, p. 72
10 Catalogue of the Czech Defence Industry 2001-2002. Prague, Association of the Defence Industry of the Czech Republic (AOP), pp. 16-27. Two particular defence industry sectors that are well-known are the aerospace and armoured sectors. Both sectors have a rich history that goes back to the pre-World War II era.

actual manufacturing or research and development (R&D) companies. The remaining two-thirds are companies involved in trading, consulting, testing and promotion, as well as repair firms and others. Approximately half of this third have overlapping programmes, leading to inefficient competition, with little ability and will to integrate to become stronger and gain a greater critical mass.[11] Thus, we may refer to 15 out of 30, or alternatively to about 16 to 17 enterprises out of 33 to 34, that are worth mentioning.

Fucik continued that, at the present time, there are practically no orders from the domestic armed forces and acquisitions have almost stopped – with the exception of a single programme in progress for the L-159 advanced trainer (AT) and light combat aircraft (LCA). This programme now consumes more than 80 percent of all investment in the defence budget and will continue at this rate in the coming years. This is the reason why all other substantial armament procurement, especially for the land forces, has in practice been put on hold. This single-track approach condemns all the remaining domestic arms manufacturers to a long wait for an opportunity for work and also holds back all possible R&D projects on future production.[12] It means that the current status of the Czech defence industry enterprises can be surmised as not financially viable and excessive in both size and number of employees.

single-track approach

Company Characteristics

Aerospace Sector

About 10,000 employees work in forty state-owned manufacturing companies in research, development and project offices in the Czech aviation industry.[13] Undoubtedly, the most important company is the Odolena Voda-based Aero Vodochody AS that manufactures AT and LCA such as the L-39/59/159. The company is owned by the government (65 percent) and the US Boeing local affiliate, Boeing Ceska (35 percent). Jane's Defence Weekly noted that the government decided in early February 2004 to buy back the 35 percent stake held by the US Boeing local affiliate, Boeing Ceska.[14]

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11 J. Fucik, "Comments on the Consolidation of the Czech Armament Industries and Their Ability to Participate in Trans-National Programmes", in NATO Co-operation; p. 47

12 Ibid, pp. 48-49

13 http://www.alv-cr.cz

14 25 February 2004, p. 15; Flight International, 16-22 March 2004, p. 24

Jaroslav Tvrdik, Czech Minister of Defence stated "the L-159 is proving to be unreliable and prone to malfunction ... while being integrated into the air force, the aircraft appears to be more dangerous to those operating it than to any potential enemy". Tvrdik also said that the L-159 programme was not succeeding in saving Aero Vodochody from going into bankruptcy.[15] Following Tvrdik's resignation in May, newly appointed Minister of Defence Miroslav Kostelka stated that the ministry intends to reduce the air force's L-159 inventory to 24 aircraft. It originally ordered 72 and the surplus will be put up for sale.[16] The L-159 programme, as mentioned above, consumes more than 80 percent of all investment.

In addition to Aero Vodochody, three other facilities are worth mentioning, since information can be found about them, as they are frequently mentioned in open sources. They are Ceska Letecka Servisni (CLS) AS, provider of avionics upgrades for military and commercial customers; Letecke Opravny Malesice (LOM) SP, manufacturer and repairer of aircraft engines and helicopter gearboxes and Letecke Zavody (LZ) AS, the training and transport aircraft manufacturer.

There is evidence that the present state of the aerospace sector is not satisfactory. It is also clear that forty state-owned companies will have no place in the post-accession Czech aviation industry sector. Although the Czech government is fully aware of the problem it has done very little to change the situation. Furthermore, as we will see in Section 2.1: "Czech Subcontracts with North American companies in the Aerospace Sector", the Czech Aero Vodochody AS does some work for companies based in North America but so far has no agreement to work with any Western European company. The recent decision to lease Swedish-built Gripen aircraft (which is discussed in Chapter 3) may change this current situation.

Armoured Sector

According to Czech official information, the armoured sector consists of fifteen state-owned manufacturing facilities, also known as Vojensky Opravarensky Podnik (VOP or Military Repair Depot).[17] The most well-known are the VOP 025 Novy

[15] Jane's Defence Weekly, 21 November 2001, p. 8. Tvrdik's assessment was supported by Major General (Ret.) Jaroslav Vulec, assistant to the First Deputy Minister of Defence of the Czech Republic during an interview with the author (4 April 2003).

[16] Jane's Defence Weekly, 20 August 2003, p. 5; 10 September 2003, p. 72

[17] Catalogue of the Czech Defence, p. 15

Jicin SP and the VOP 026 Sternberk AS. Both depots are involved in the current upgrade of the main battle tank (MBT) and amphibious scout vehicles. The rest of the manufacturing facilities remain idle and have difficulties in attracting investors and in manufacturing goods for export.

The remaining enterprises are divided among the five above-mentioned branches. However, due to the lack of reliable data, my information is limited to the two sectors mentioned below.

Small Arms Sector

Zbrojovka Vsetin AS is one of the leading manufacturers of small arms and ammunition for the police and army.[18] The future of the company remains very uncertain as a result of its financial difficulties.

Communication and Electronics Sector

Information given by Defense News, states that there are two companies in the communication business. These are Dicom (Digital Communications) SPOL SRO and ERA AS. Dicom SPOL SRO focuses mainly on the development and manufacture of communications, navigation, digital and analogue electronic devices for the army and the police. ERA AS specialises in the development and manufacture of passive surveillance systems designed for both air traffic control and air-defence applications.[19] ERA AS is in a better financial state than Dicom SPOL SRO, partly as a result of marketing assistance from Thomson-CSF International.

In March or April 1998, Paris-based Thompson-CSF International bought a 35 percent stake in the ERA AS. Milan Bernard, ERA's sales manager said on 2 April that Thompson-CSF gave the Czech company a strong technological link as well as access to international markets. To decrease its dependence on Czech procurement, which accounted for 80 percent of the company's 1997 sales, ERA AS has developed a new passive, long-range radar with early warning capacity known as Vera.[20] According to the ERA AS Website Paris-based Thales International (formerly Thompson-CSF International) is a significant shareholder of the company. The Website, however, does not give the percentage stake that the French company bought in the Czech company. However, it noted that the Paris-

18 Defense News, 20-26 April 1998, p. 44
19 Ibid
20 Ibid; Jane's Defence Weekly, 20 May 1998, p. 27

based partner brought access to Thales's worldwide operations.[21] Flight International of 15-21 July 2003, p. 14 noted that Northrop Grumman has approached the Czech Republic's AOP seeking local partners for its bid for the NATO Alliance Ground Surveillance (AGS) project. AOP president Jiri Hynek stated that the US company has shown interest in ERA's Vera system.[22]

Another company worth mentioning is Meopta Prerov AS.[23] According to the company's official information, it remains the single top optical enterprise in the Czech Republic. It produces night vision devices for drivers of armoured vehicles, binocular periscopic telescopes for tank and armoured personnel carriers (APCs) commander and night vision goggles for land forces.

A non-viable and financially unprofitable complex

To conclude, the Czech defence industry complex mentioned above and its enterprises remain uncompetitive. There are too many enterprises and too many employees, the complex remains non-viable and financially unprofitable. In addition, the Czech government's excessive preoccupation with Aero Vodochody AS's past and present operations has diverted the government's funds and attention away from the rest of the industry. Thus, the current situation within the defence industry as a whole remains grim and uncertain. As a result, there is very little interest from Western European companies in the Czech Republic defence industry. I can foresee that integration of the Czech defence industry into the EU will be very difficult and time-consuming. This point will be broadly discussed in Chapter 3.

Hungary

Sándor Balázsy in the book "NATO Co-operation" noted that the origin of today's Hungarian defence industry goes back to the era of the Austro-Hungarian monarchy.[24] Over the period 1970-88, the following main products were manufactured by the Hungarian defence industry:

- small arms, air-defence artillery, guns (up to 122 mm) and 82 to 120 mm automatic and normal mortars;
- small arms ammunition, artillery ammunition (up to 122 mm), mortar grenades, anti-personnel mines, anti-tank mines and hand grenades;

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21 http://www.era.cz/en/profile.shtml
22 15-21 July 2003, p. 14
23 Jane's Defence Weekly, 20 May 1998, p. 27
24 Balázsy, S., "The Hungarian Defence Industry: Past, Present and Question Marks of the Future", in NATO Co-operation, p. 57

- short-wave and ultra-short wave two-way sets and radio stations for tactical and operational purposes; ultra-short-wave, microwave and tropospheric radio relays; long-wave, medium-wave, ultra-short-wave and microwave reconnaissance receivers, radio direction finders and complete reconnaissance and jamming systems;
- armoured vehicles, all-terrain cars, trucks and special maintenance vehicles.

Beyond these, the Hungarian industry made preparations for the production of powder, explosives and different blasting caps as well as for an industrial overhaul of MiG-21, Mi-8/24 helicopters, radar and rocket systems, tanks (T-55 and T-72) and telecommunication equipment.[25]

Defence budget

According to armedforces.co.uk., Hungary's defence budget for 2000 stood at $US790 million or about 1.8 percent of the GDP.[26] According to the Department of National Defence and the Canadian Forces, the defence budget for 2001 was $US800 million.[27] The Military Balance reported that the defence budget for 2002 was $US1.084 billion.[28] Mihaly Zambori, Deputy State Secretary for Defence Economy within the MoD, revealed on 15 January 2003 that the country's defence budget for 2003 will be Hungarian forint (Huf) 309 billion (about $US1.1 billion).[29] The Hungarian government has stated that it will spend 1.71 percent of GDP on defence in 2004, 1.76 percent in 2005 and 1.81 percent annually for ten years from 2006.[30] Lieutenant General Zoltan Szenes, Chief of the Defence Staff within the MoD, stated on 3 March 2004 that the country's defence budget for 2004 will be Huf 341 billion ($US1.6 billion).[31]

In an interview with Dr Geza Peter Kovacs, president of the Hungarian Defence Industry Association, Dr Kovacs stated that there are thirty-six companies operating in Hungary that describe themselves as 'interested' in the defence industry. According to Dr Kovacs, however, only about ten of these are really defence companies and these ten account for more than 90 percent of the industry's turnover. There is only one privately owned company, the Tököl-based Danubian Aircraft Company (DAC).[32] In 2000,

25 Ibid, pp. 59-60
26 http://www.armedforces.co.uk
27 http://www.dnd.ca/site/about/budget_e.asp
28 The Military Balance 2002-2003, p. 253
29 http://www.honvedelem.hu/cikk.php?cikk=11832/
30 Jane's Defence Weekly, 8 October 2003, p. 13
31 Idem; 3 March 2004, p.34
32 Interview with Dr Geza Peter Kovacs, 10 April 2003. For the Hungarian Defence Industry Association Website, see http://vedelmiipar.hu/.

Jane's Defence Weekly cited Dr Kovacs, who stated that nine out of ten companies are state-owned and it was "no accident" that the four companies under MoD ownership receive many of the MoD orders.[33] In 2001, the overall number of employees within the defence sector decreased significantly to merely 1,500 of the formerly over 50,000 employees.[34]

Three branches of the industry

The industry is currently divided into three branches: Aviation; Armoured vehicles and Electronics and optronics. However, there are no Hungarian companies manufacturing large military equipment such as aircraft, tanks or radar.

Aerospace Sector

The Danubian Aircraft Company maintains, overhauls and upgrades Hungary's Soviet-built MiG-29 aircraft, in addition to Hungary's Mil helicopters (Mi-2/8/17/24) and Aero Vodochody L-39 aircraft.

Armoured Sector

This sector was and still is very small. It includes the single company under the MoD aegis, Currus Armoured Vehicle Technique Company (also known as the Currus Company). It is engaged in the overhaul and repair of the T-72 main battle tank, BTR-80 armoured personnel carriers and BMP-1 armoured fighting vehicles.

Electronics Sector

According to official information from the MoD Electronic Directorate Company Limited or shareholding company (SHC), the company's main activities for more than ten years were focused on projecting, developing, integrating and exporting electronic warfare (EW) systems. In recent years the company has redirected its activities towards computer technology and electronics.

To conclude, the Hungarian defence industry in its present form is facing a grim future as its domestic market is very small and unlikely to expand in the future. In addition, it has no

[33] 5 July 2000, p. 26

[34] Allgemeine Schweizerische Militärzeitschrift, January 2001, p. 39. According to Internet sources (http://acp.gn.acp.org/networks/cost-a10/a10_budapest.html), the Hungarian defence industry has shrunk to no more than 3,000 employees and the defence ministry is currently trying to establish a policy on if and how to preserve that base, as explained by the MoD representative Gabor Juhasz.

agreement to work with any Western European or North American companies. The government officials' hopes of working together with Western companies have not been realised as yet. Nonetheless, the potential for integration of the Hungarian defence industry into the Western European defence industry's infrastructure is much greater than that of the Czech Republic. The Hungarian defence industry as a whole is compact and employs a small number of skilled workers. However, this also means that the MoD companies need to be privatised and restructured before it can be integrated. So, even if the rest of the industry is integrated, the MoD enterprises in their current form will not. As a result, whether or not the MoD enterprises are included remains more with the Hungarian government than it does with a potential Western European company.

Potential for integration

Poland

General Information

In mid-May 2001, the Polish Parliament approved a 2001-06 defence plan stipulating that the country will spend no less than 1.95 percent of its GDP on defence.[35]

According to official information from the Polish Chamber of National Defence Manufacturers, the industry is divided into six branches: a) Logistics; b) Military infrastructure; c) Naval systems; d) Personal equipment; e) Research and development and f) Military equipment foreign trade.[36] Two additional branches are currently being restructured, for further information, see below. Another source reported the existence of 54 companies in seven branches of the defence industry: ten in aerospace, nine in land forces, two in naval forces, seven in ammunition and missiles, fifteen in electronics, ten in individual soldier equipment and one in nuclear, biological and chemical (NBC) systems.[37]

Jacek Klich in the book "NATO Co-operation" reported that, at the beginning of 2000, the core of the Polish arms industry (after the decision of the Council of Ministers, made in mid-November 1999) consisted of thirty-eight manufacturing companies, belonging to the MoE, twelve enterprise under the

[35] Jane's Defence Weekly, 6 June 2001, p. 2. Bednarczyk, B., `The Polish Security and Defence Policy´, in NATO Co-operation, p. 25 reinforced Jane's Defence Weekly statement.

[36] http://www.defence-industry.pl/ (English-language version is under construction).

[37] Jane's Defence Weekly, 16 April 2003, p. 26.

MND aegis engaged in upgrading certain systems and repairs, and ten research and development centres. In addition to the above-mentioned entities there are also a number of companies (the exact number remains unknown for the time being) that do not enjoy the status of military suppliers, yet are engaged in deliveries for the MND. These companies and enterprises produce weapons and military equipment.[38] They can be divided into the following four branches that are currently combined into two groups (see above). Although Poland boasts thirty-eight manufacturing companies and twelve enterprises, in reality there are at least fifty-four (see above), with many struggling to win contracts.

Consolidation of the defence sector

According to other sources, the Deputy Economy Minister Andrzej Szarawski has put forward a programme for consolidating the defence sector. The Council of Ministers approved the programme on 14 May 2002.[39] The Journal expanded on the issue by stating that in May the Polish government approved the 2002-05 Strategy for Restructuring the Industrial Defence Potential (PPO) companies. Many – although not all – of the PPO companies are to be consolidated into two groups, oriented towards either land warfare or aviation equipment.

The land warfare company, provisionally called the Ammunition-Missile-Armour Group, is to be built around PHZ Bumar also known as Trading Enterprise Bumar. The latter will also be restructured, giving the state 90 percent of the company.[40] Slawomir Kulakowski, President of the Polish Chamber of National Defence Manufacturers stated that about 20,000 employees work in the armoured industry and electronics.[41]

The state-owned Industry Development Agency (Agencja Rozwoju Przemyslu – ARP) will lead the aviation group, dubbed the Aviation-Command, Control, Communications and Intelligence (C3I) Group.[42] Kulakowski also told the author that about 11,000 employees work in the aerospace industry.[43]

The same issue of the Journal noted that, under the reform plan, both of the holding groups should receive at least Pzl 8.2

[38] Klich, J., `The Role of Defence Economy in the Polish Economy´, in NATO Co-operation, p. 83

[39] http://www.warsawvoice.pl/old/v710/Business03.html/

[40] Jane's Defence Weekly, 21 August 2002, p. 16; NATO'S Nations and Partners for Peace, vol.49, no.1 (2004), p. 172

[41] Interview with Slawomir Kulakowski, 3 April 2003.

[42] Jane's Defence Weekly, 21 August 2002, p. 16

[43] Interview

billion in orders from 2003 through to 2008 when the value of the offsets is added.[44]

According to other sources, on 20 August 2002 the cabinet adopted draft amendments to the law on supporting the restructuring of the defence industry's potential and the modernisation of the armed forces. Half of the 30,000 employees in the defence sector will find jobs in one of the groups (the rest of the employees are likely to be retrained, relocated to non-defence enterprises or will retire). The enterprises that are not included will be gradually privatised.[45] However, the sources reported that not all the legal issues surrounding the consolidation have been resolved.[46] According to Wojciech Luczak, Editor of the Defence Monthly Report (in Polish), who interviewed Roman Baczynski, PHZ Bumar president, 2003 will be the year of consolidation of fifteen companies under joint marketing, supply lines, book-keeping etc. In 2004 Baczynski intends to integrate the same fifteen companies further.[47] According to Wojciech Luczak's article in Military Technology, the newly established Bumar Group will start merging and integration procedures in 2004 aimed at creating a single company with centralised purchases, sales, marketing and promotion structures.[48] The ARP group will be consolidated in 2003. It consists of five companies. As for the rest of the companies, no information has yet been published about their future.

Restructuring the defence sector

Kulakowski stated that a total of about 60,000[49] (and not 30,000 as mentioned above) employees work in the aerospace and defence industry including the MoE, the MND and privately owned enterprises. It is clear that in the not so distant future a total of 15,000 employees will be retained in the restructured defence sector. As for the rest, see above.

Undoubtedly, the aerospace, ammunition and missiles, armoured, electronics and naval sectors are the most well-known branches of the defence industry. In addition, Poland has the largest defence industry of all the Central and Eastern European countries. Its financial fortunes, however, vary from sector to sector.

44 Jane's Defence Weekly, 21 August 2002, pp. 16-17
45 http://www.pai.pl/biul_ekon/nr34_2002.html/
46 Jane's Defence Weekly, 16 April 2003, p. 24
47 E-mail of 6 May 2003.
48 "Polish Armour Export Success", August-September 2003, p. 39
49 Interview

Aerospace Sector

ETC-PZL Aerospace Industries Sp z.o.o is the major aircraft, helicopter and tank simulators manufacturer. Polskie Zaklady Lotnicze (PZL or Polish Aviation Factory) Mielec Company Ltd (former PZL Mielec) manufactures agricultural, fire-fighting, passenger, transport and military trainer aircraft. WSL PZL Rzeszow SA manufactures aero-egines. PZL Swidnik SA manufactures commercial and military helicopters, sailplanes and subcontracts work for Western European companies. PZL Warsawa-Okecie SA manufactures multi-purpose craft, and agricultural and military aircraft.

Western European Stake in the Polish Aerospace Industry

On 28 August 2001 the Polish MND signed a $US212 million contract with a European Aeronautic Defence and Space (EADS) Company-Construcciones Aeronauticas (CASA) SA to acquire eight C-295M transport aircraft. Under the terms of the agreement's offset package, EADS-CASA SA has agreed to buy a 51 per cent stake in the PZL Warsawa-Okecie SA factory, retaining its present number of seven hundred employees until at least late August 2003, install new production equipment and pay off part of the company's debt to the Polish Ministry of Finance. EADS will later (when is for the time being unknown) increase its shareholding to 85 percent in the Polish company, which will act as the primary in-service support and maintenance facility for the Polish Air Force and Air Defence's C-295Ms. The remaining 15 percent will be owned by the employees. For the time being 34 percent of the company remains in the hands of the government.[50] Does this mean that after August 2003 the number of employees will be reduced? How much are both companies supposed to pay to cover the Polish company's debt? Although I emailed to Carlos Navarro, PZL Warsawa-Okecie SA's president and chief executive (19 May, 2 and 18 June 2003), asking him to clarify the company's current situation, I have not received a reply. Flight International answered some of my questions. It stated that the EADS-CASA SA two-year transition period related to the PZL Warsawa-Okecie SA ends in August and that the future structure of the company in Poland is under review.[51]

Poland has selected Pratt and Whitney Canada (P&WC) over Fiat Avio of Italy to be the strategic investor in the privatisation

[50] Jane's Defence Weekly, 5 September 2001, p. 19; Flight International, 30 October-5 November 2001, p. 28

[51] 24-30 June 2003, p. 6

of the aero-engine manufacturer WSK PZL Rzeszow SA.[52] According to Internet sources reinforced by Jane's Defence Weekly, in March 2002 P&WC bought 85 percent of the Polish company. The remaining 15 percent continue to be owned by the employees.[53]

Ammunition and Missiles Sector

ZM Mesko SA remains the only guided missile manufacturer. The company's financial situation is very precarious; its electricity supply has been cut off and it has been forced to lay off 520 workers. At the same time, however, the company is expected to be responsible for licensing the production of the new generation of anti-tank guided weapons (ATGWs) to be selected for the Polish land forces.[54] Haifa-based Rafael Spike-LR ATGW is to be manufactured locally by ZM Mesko SA.[55]

Armoured Sector

This sector consists of four major facilities: Centrum Produkcji Wojskowej (CPW or Military Production Centre); Huta Stalowa Wola (HSW) SA (for further information, see below); Wojskowe Zaklady Mechaniczne (WZM or Military Mechanical Works), which is the automotive and overhaul centre of the MND; Zaklady Mechaniczne (ZM) Bumar Labedy SA, which is the major manufacturer of the main battle tank and various armoured vehicles, and the OBRUM Research and Development Centre for Mechanical Application, which is the major engineering research facility. In spite of the financial difficulties of ZM Bumar Labedy SA, a Malaysian contract signed on 11 April 2003 will improve its financial situation substantially and keep its work force very busy for the next three years. Poland's contract with the Finnish manufacturer Patria Vehicles Oy, has substantially improved the work load of the Polish partner of the Finnish company, WZM. For further information on the contract, see Section 2.2: Polish-Western European Co-operation Projects in the Armoured Sector.

A source reported that, following reorganisation during 2001, the HSW SA holding created the CPW division, which

52 Flight International, 11-17 September 2001, p. 5

53 (http://www.warsawvoice.pl/old/v701/Business06.html); 21 August 2002, p. 17

54 Military Technology, June 2002, p. 8

55 Jane's International Defense Review, January 2003, p. 29; Defense News, 5 January 2004, p. 8; Jane's Defence Weekly, 7 January 2004, p. 5

should be a key player responsible for developing a number of new systems for the army. It is a profitable mortar maker, in particular of the M-98 and BM-21 modified artillery rocket systems.[56] Jane's Defence Weekly also noted that CPW HSW SA manufacture howitzers (155 mm self-propelled howitzer Krab), tracked and wheeled combat vehicles and armoured personnel carriers.[57] Wojciech Luczak noted that HSW SA signed a contract to deliver 67 MTLBs (armoured military vehicles) to the Nigerian Ministry of Defence.[58]

Electronics Sector

According to the Journal's list, the electronics sector is the largest sector within the Polish defence industry[59]. However, not all of the enterprises listed in it are in a healthy financial state. Here information is given only about the more well-known of these enterprises, about which some information has been collected.

Among other strong players in the Polish defence industry, CNPEP Radwar SA is developing air-defence systems, including the Loara self-propelled anti-aircraft gun (SPAAG) system and new applications of the licence-built identification friend or foe (IFF) system.

WB Electronics Sp. z.o.o has an excellent reputation for developing and fielding new generation fire control systems, field computers and vehicle communication systems for the Polish armed forces.

PCO SA effectively supplies all the optical and fire control systems for Polish military vehicles as well as for other branches of the armed forces. It has a number of new markets for electro-optical systems.[60]

Naval Sector

Stocznia Marynarki Wojennej (SMW)/Naval Shipyard Gdynia (NSG) was and still is the major shipbuilding facility as well as a manufacturer of commando ships and corvettes, guided missile boats, hydrographic ships, and intelligence ships as well as landing craft. Centrum Techniki Morskiej (CTM)/R&D Marine Technology Centre remains the major research and development

56 Jane's Defence Weekly, 26 September 2001, p. 24
57 16 April 2003, p. 26
58 "Polish Armour Export Success", Military Technology, August-September 2003, p. 38
59 Jane's Defence Weekly, 16 April 2003, p. 26
60 Idem; 26 September 2001, p. 24.

facility specialising in the development and implementation of state-of-the-art solutions for weapons systems and equipment used by the Polish Navy (PN) and the Armed Forces. The basic fields of CTM activity encompass ship- and land-based C3I systems, radio communication systems, sensors and systems for underwater situation monitoring, underwater weapon systems, navigation systems, ships' passive protection systems and ships' auxiliary installation and systems.

To conclude, despite being the largest defence industry within Central and Eastern Europe and having extensive co-operative projects with Western European companies (which will be discussed in Chapter 2) the industry is by-and-large facing similar problems to those of the Czech Republic and Hungary. It remains overstaffed, although compared with the Czech Republic and Hungary it is currently in the process of shedding a large number of employees by merging parts of its complex into two groups. However, it is unlikely to cut the number of jobs within the MND facilities, and this is where the problem of excessive number of enterprises and employees will remain. Another problem that may lie ahead of the restructured Polish defence industry is that the financially profitable enterprises of, for instance, the armoured sector, will be merged with the less profitable enterprises of the ammunition and missile sector. As a result, the shared burden will be unbalanced and the newly-merged group may not be able to function properly. In addition, in order to succeed financially the newly emerged group will have to pursue its arms export policy vigorously. The consequences of such a vigorous policy are hard to foresee. However, it is clear that in becoming an EU member Poland will have to adhere to the EU arms export policy. As a result, it may become difficult for the group to penetrate new markets and to maintain its financial profitability.

Penetration of new markets

Slovakia

General Information

Danes Brzica in the book "NATO Co-operation" noted that, following its pre-war tradition, the Czechoslovak Federation was ranked as the second largest armament exporter to the Council for Mutual Economic Co-operation (COMECON) countries, with the Slovak Republic representing 65 percent of the total armament production of the federation.[61] The Ministry of

[61] Brzica, D., "Slovak Defence Industry in a Broader Context: Political and Economic Issues´, in NATO Co-operation, p. 107

Economy (MoE) is currently the major shareholder of the leading defence industry companies.

Military spending

Sources reported that Slovakia planned to maintain its 2001 level on military spending of 1.89 percent of GDP up to 2005. In 2006 this figure is likely to increase to 2 percent.[62] The Slovak Minister of Defence, Ivan Simko, stated that in 2003 defence spending will be Slovakian krona (SKs) 21 billion ($US500 million). He also added that "the government hope to generate additional funds by selling off redundant property and surplus material such as munitions and obsolete technology. The problem is that there are legal and legislative obstacles that must be overcome in achieving this. Nevertheless, we hope to resolve these issues and sell off redundant material, perhaps in the form of a public auction". The Slovak Minister of Defence, Juraj Liska, stated that in 2004 the defence budget will be about SKs 25.5 billion ($US801 million) or just over 2 percent of GDP.[63]

Lubomir Harach, Economy Minister of Slovakia stated that the number of workers in the Slovak defence industry has decreased from 1,984 to 1,574.[64]

In the framework of the consolidation process that took place after 1998 (parliamentary elections and a change of government), on 3 March 2000 forty major aerospace and defence companies established the Association of the Defence Industry of the Slovak Republic (ADISR). ADISR is a kind of lobby group that pursues the country's defence industry interests, namely facilitating research, production and modernisation of the defence industry.[65]

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62 Jane's Defence Weekly, 31 October 2001, p. 16; Slovak Army Review, Spring 2002, p. 19

63 Jane's Defence Weekly, 8 January 2003, p. 32; 21 January 2004, p. 34

64 International Defence Equipment Exhibition (IDEE) Exclusive, 2001, p. 25. The same figure (1,574) was cited in Matus Korba's Independent Report on Slovak Arms Exports. Bratislava, Slovak Foreign Policy Association, Summer 2002, p. 26. According to Peter Dudak (e-mail of 25 June 2003), State Counsellor at the Department of Industrial Policy at the Slovak Republic MoE, in 2002 the number of workers decreased to 1,081. In the follow-up e-mail (of 26 June 2003), Peter Dudak explained to the author the issue pertaining to the number of employees. The defence industry under the MoE aegis is privatised and the total number of employees in 2002 stood at 1,081. In 2002 the MoD, however, employed 1,910. The three privately owned companies: Povazske Strojarne Letecke Motory (PSLM) AS, ZTS Tees Defence AS Martin (also known as DMD Mobiltec AS) (former ZTS Tees AS Martin) and Kerametal AS employ either 812 or 931. In 2002 there was a total of between 3,803 and 3,922 employed by the Slovak defence industry.

65 M. Korba, *Independent*, p. 9. For details on the ADISR, see http://www.zop.sk/

According to Matus Korba's Independent Report in December 2001, the Slovak Parliament adopted a document entitled *Armed Forces of the Slovak Republic – Model 2010*. According to this document, the Slovak defence industry must adapt its research, development and production methods and technologies to the relevant Western European standards. This is necessary not only because of the goals and needs for the armed forces and the MoD and Slovak Armed Forces for reform, but also in view of potential business opportunities in NATO and EU countries.[66] Although the document underlines the wishful thinking of parliament, it does not necessarily mean that the defence industry will follow the recommendations.

The Slovak defence industry consists of aerospace, armoured and artillery sectors.

Aerospace Sector

The aerospace sector's is able to make a limited upgrade of aircraft and helicopters. It consists of two influential enterprises and one research facility: Letecke Opravovne Trencin (LOT) SP, which is responsible for the overhaul of all the Slovak Air Force aircraft and helicopters, and Povazske Strojarne Letecke Motory AS, manufacturer of aero-engines. TheVojensky Letecke Technicky a Skusobny Ustav (VLTSU)/is a military aviation technical and testing institute in Kosice.

Armoured Sector

The armoured sector that historically was better developed before the peaceful split of Czechoslovakia remains the most developed in the state. It also pursues several co-operative projects with Western European armoured enterprises. For further information, see Section 2.3.

There are notable examples of companies in the armoured sector, such as ZTS Tees Defence AS Martin, Vojensky Opravarensky Podnik (VOP) 027 Trencin SP and the commercial organisation, Kerametal AS, which also actively participates in the development, production, marketing and sales of ammunition systems and armoured vehicles.

Artillery Sector

The artillery sector is known for its production of the Zuzana self-propelled gun (SPG)/howitzer manufactured by ZTS

[66] Ibid

Dubnica nad Vahom plus AS. Slovakia's ZTS Dubnica nad Vahom is developing a new version of the Zuzana SPG that will feature a NATO-type 155 mm/52-calibre ordnance and will be based on the German MAN diesel, which meets Euro II emission standards, coupled to the US-based Allison Transmission fully automatic transmission.[67] In addition, at the Brno military exhibition in May 1999, Konstrukta-Defence AS displayed a heavy (over 27 tonne) anti-aircraft self-propelled system on an armoured 8x8 chassis, designated Brams.[68]

To conclude, the Slovak defence industry has a much better chance of being integrated into the Western European defence industry infrastructures than that of the Czech Republic, Hungary and Poland. The work force is skilled and small in size and labour costs remain lower than those in the other three countries. However, the defence industry infrastructure is of the same quality as in the other countries.

1.2 EU candidates and their defence industry capabilities

Bulgaria

General Information

According to the Bulgarian Branch Chamber of Manufacturers and Traders from the Military Industry source, the industry is divided into six branches: a) Ammunition; b) Armament; c) Armoured vehicles; d) Aviation; e) Electronic warfare equipment and f) Engineering equipment and explosives.

The Chamber consists of thirty-five state and privately owned enterprises.[69]

The Bulgarian defence industry currently employs 25,000 people.[70] In a recently published paper by Todor Tagarev, the current Director of Programme at the Centre for National Security and Defence Research under the Bulgarian Academy of Sciences, Tagarev confirmed Jane's Defence Weekly estimates. However, he also stated that of the 77 companies with defence or dual-use production capacity, 5.7 percent are classified as small, 63.6 percent as medium-sized and 30.7 percent as large. With a

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67 Jane's Defence Weekly, 30 May 2001, p. 12. Jane's Defence Weekly, 25 July 2001, p. 30 noted that the company has developed a NATO compatible 81 mm mortar system.

68 Military Technology, July 1999, p. 74. For the Konstrukta-Defence AS Website, see the Appendix.

69 http://b2b.bia-bg.com/biasite/branch/defence.html/

70 Jane's Defence Weekly, 10 April 2002, p. 18

few exceptions, the defence companies have been privatised. Often, though, companies were sold off to the existing management and the 'privatisation' did not attract strategic investors. Nevertheless, the industry is gradually restructuring. Production is being oriented along the requirements of NATO standards. The companies are seeking new markets and new Western partners.[71]

Defence budget

The Bulgarian defence budget for 1999 was about $US326 million.[72] The "Military Balance" reported that the defence budget for 2000 was $US333 million and for 2001 it was $US360 million.[73] The Bulgarian defence budget for 2002 was $US400 million.[74] The Bulgarian government has planned a Bulgarian leva (Bgl) 133.2 million ($US69.8 million) increase in its 2003 budget. According to the MoD, the government has allocated Bgl 896.7 million (about $US462 million) for defence in its 2003 draft budget. This represents 2.49 percent of the country's GDP.[75]

In my presentation I will deal with five of the six sectors. I have no data on the Engineering equipment and explosives sector.

Aerospace Sector

Undoubtedly, the defence industry powerhouse and the most important company in the aerospace sector, despite its financial difficulties, has been and still is the Terem shareholding company. It engages in the repair of aircraft, armoured fighting vehicles, artillery guns, communications equipment, missiles, radars, ships and sonar.

The Georgi Benkovski Plant (also known as the Plovdiv Aviation Repair Plant) remains another important facility. It upgrades military aircraft and engines and manufactures spare parts. Further information on the plant is given in Chapter 3, section: Modernisation and Procurement.

According to Bozhidar Penchev, State Expert at the Directorate Sector Analysis within the Ministry of Economy, the

71 T. Tagarev, "From Downsizing to Modernising Defence in Central and Eastern Europe: Opportunities for SME's", in Defence Related SME's: Analysis and Description of Current Conditions, Carvalho, Fernando Duarte (ed.), NATO Science Series, Series V, vol.43 (Amsterdam: ISO Press), pp. 142-143. Tagarev also confirmed Jane's Defence Weekly, 10 April 2002, p. 18 statement related to the defence companies' privatisation results.

72 Military Technology, November 1999, p. 8

73 The Military Balance 2002-2003, p. 256

74 Defense News, 19 September 2002; http://www.defensenews.com/

75 Jane's Defence Weekly, 8 January 2003, p. 10

Aviotechnica joint-stock company (JSC) specialises in air target design and the manufacture of equipment for the Bulgarian Armed Forces. A company has recently been invited to assist in experimental works in the field of unmanned aerial vehicles (UAVs).[76]

Ammunition Sector

Rousse-based Dunarit JSC manufactures 122 mm shells for howitzers, 125 mm rounds for tank guns, anti-tank mines, plastic and elastic explosives and hand smoke grenades. Sopot-based Vazovski Mashinostroitelni Zavodi (VMZ or Vazov Engineering Works) JSC manufactures hollow-charge and high energy (HE) grenades for the 2A-28, RPG-7/22, SPG-9 rounds, 155 mm shells, 122 mm rocket projectiles for the Grad multiple launch rocket system (MLRS), unguided air-to-surface rockets, anti-tank guided missiles (ATGMs) and man-portable anti-aircraft missile systems.[77] Neither company is financially viable.

Armoured Sector

Financial difficulties

This sector is not very different from the aerospace sector, as both sectors are in serious financial difficulties despite government attempts to keep them afloat. It comprises four plants.

According to Internet sources, the Beta joint-stock company is involved in the automotive, construction, road-building, metal working, and the agriculture and defence industries.[78] According to Bozhidar Penchev, the company also manufactures multipurpose armoured vehicles (MTABUs), towing carriers (MTLB-Vs) and light multipurpose towing carriers (MTLB-VMs).[79] The Khan Kroum Plant in Targovishte overhauls T-55/62/72/72M main battle tanks, armoured military vehicles and BMP-1 infantry fighting vehicles. It also manufactures MTLBs, spare parts and maintenance kits for tanks and armoured military vehicles. ARZ Lulin/Lyulin JSC manufactures parts for the MTLB and its versions, the T-55 main battle tank and the BMP-22/30 infantry fighting vehicle. It also produces support equipment for land forces and overhauls heavy duty vehicles. Vola in Vratza overhaul wheeled armoured vehicles and trucks

76 E-mail of 15 July 2003.
77 NATO& Bulgaria, no.5 (11), 2002, p. 37
78 (http://www.beta.bg/index.html)
79 E-mail of 1 July 2003.

and manufacture spare parts for armour and automative equipment.

It is clear that the armoured sector companies need to be consolidated and streamlined since they duplicate each other's activities.

Electronics Sector

There are three well-known defence enterprises in this sector. Laser and Optical Technologies (LOT) JSC engages in R&D and manufactures laser range-finders, optic telescopic sights for combat vehicles for the infantry and reconnaissance and day and night surveillance equipment. Opticoelectron JSC manufactures day and night sights for fire arms and night vision devices for armoured military vehicles. Samel 90 JSC manufactures military radio-electronics for the Bulgarian army.

Small Arms Sector

There are two well-known defence enterprises in the small arms sector. They include the Arcus company, a manufacturer of ammunition: grenades for grenade launchers, medium calibre ammunition and mortar bombs; fuses for: artillery and tank ammunition, mortar bombs and air bombs; and small arms: pistols, revolvers, grenade launchers and mortars. Arsenal JSC manufactures Kalashnikov assault rifles, light machine guns and pistols, anti-aircraft artillery launchers, 122 mm howitzers and anti-tank grenade launchers.

To conclude, the Bulgarian defence industry capabilities, at least on paper, appear to be impressive. However, the reality is very different. The Bulgarian defence industry compared with other Central and Eastern European countries' defence industries has at least another three years to improve its domestic situation and performance, to expand its co-operation with the Western European companies and, as a result, to be better prepared for integration with Western European defence industry infrastructure. To say the least, there is much to be done before the accession of the country and the integration of the defence industry. A serious shake up of the defence industry is needed in order to bring it closer to EU standards, to remain competitive and to be able to contribute to the newly enlarged EU defence market.

Shaking up the defence industry

Romania

General Information

According to Marian Ilie, personal adviser to the Deputy Minister at the Romanian Ministry of Industry and Resources (MoIR), the Romanian aerospace industry has a long tradition that started before World War II. The armoured industry has a shorter but rich tradition, having its beginnings in the 1970s.[80] Undoubtedly, both industries were, and still are, the most important in Romania. In addition, Brigadier General Gheorge Rotaru, Romania's Liaison Officer to NATO stated that Romania has excellent capabilities in infantry and artillery production.[81]

According to Air Flotilla Brigadier General Ion-Efitimie Sandu, Deputy of State Secretary and Chief of Armaments Department within the Romanian Ministry of National Defence (MND), PATROMIL stands for Asociatia Producatorilor din Industria de Aparare din Romania/the Romanian Defence Manufacturers' Association.[82] According to the country's official data, the (Asociatia) Association consists of 40 members and 185 affiliated companies. The 40 members represent the hard core of the aerospace and defence industry.[83] This number was reiterated by Marian Ilie who also added that the current defence industry encompasses twenty-seven state-owned companies and one research institute. Fifteen of these companies and the research institute are grouped within the CN Romarm SA national company – a state-owned holding. The remaining twelve state-owned companies are on the list for privatisation in 2003. Ten additional companies are privately owned, while seven of the ten take in the aerospace sector.[84]

According to the same source, the defence industry is divided into eight branches: a) Air forces and aerospace technique; b) Ammunition, armaments and explosives; c) Armoured vehicles; d) Security, command and control systems; e) Information technology (IT) and telecommunication systems; f) Ships and naval systems; g) Staff and technical protection equipment (e.g. military and civilian garments, footwear, protection suits) and h) Research, design and trade centres.[85]

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80 E-mail of 18 April 2003.
81 Military Technology, September 1996, p. 70
82 E-mail of 20 July 2003.
83 http://www.patromil.ro/home_fr_dw_en.html/
84 E-mail of 18 April 2003. See also Military Technology, November 2003, pp. 84-86
85 http://www.patromil.ro/home_fr_dw_en.html/

The information on employment figures in the defence industry for the second half of 2002 varies. According to Jane's Defence Weekly, , the defence industry employed 18,500 people at the end of 2002.[86] However,according to other sources, in June 2002, the aerospace industry employed about 8,500.[87]

Romania increased its defence budget for 2001 to $US890 million from $US780 million in 2000.[88] Ioan Mircea Pascu, the Romanian Minister of National Defence, stated that the government has allocated $US1.004 billion for 2002.[89] The defence budget for 2003 was $US1.09 billion, with an additional $US106.6 million in non-cash allocations. The Romanian Annual National Plan (ANP IV) increases defence spending to 2.38 percent of GDP for the next three years, starting from 2004.[90] This data was supported by Jane's Defence Weekly that also added that the government has allocated 50,000 billion lei ($US1.4 billion) for defence spending in 2004.[91]

Defence spending

In my presentation I will deal with two of the eight sectors. There is a considerable lack of data pertaining to the other sectors.

Aerospace Sector

Other important companies in the sector besides Aerostar SA, mentioned above, are Avioane Craiova SA, an advanced trainer producer, Intreprinderea Aeronautica Romana (IAR) SA Brasov, helicopter manufacturer, Turbomecanica SA, an engine manufacturer.

Undoubtedly, for Romanian aerospace enterprises, in particular Aerostar SA, Avioane Craiova SA and IAR SA Brasov, Israel-based Elbit Systems Ltd was and still is the major industrial partner. Another important company in the sector is Aerofina SA. Its products include avionics, engines, instruments, altimeters, galvanometers, subsystems for aircraft and other military users and homing guidance modules for missiles.

86 Jane's Defence Weekly, 18 September 2002, p. 22

87 http://www.rosa.ro/Aerospatial/Prezentari_iunie2002/Prezentari_proiecte/11037_Mihail.Toncea.ppt/

88 Jane's Defence Weekly, 1 November 2000, p. 21

89 Idem; 21 November 2001, p. 32

90 Idem; 23 October 2002, p. 11

91 5 November 2003,

Armoured Sector

In comparison with the established, well-known and viable aerospace sector, the armoured sector is small and, at present, remains non-profitable, partly as a result of the lack of orders from the Romanian Armed Forces and a lack of export sales. According to Marian Ilie, the main battle tank and armoured personnel carriers firms that are currently CN Romarm SA affiliates will be privatised.[92] The situation is, however, changing. Jane's International Defense Reviewnoted that the armoured sector has received orders from the MND to upgrade MLI-84 over the next five years at a cost of about $US290 million.[93]

There used to be at least three armoured manufacturing facilities. One was the Regia Autonoma Arsenalul Armetei (also known as Arsenalul Armetei Autonomous Administration or Arsenalul Armetei) that, according to Janes Defence Weekly was merged with the Romarm National Company to become Romarm SA.[94] The other two companies are Mechanical Factory for Armament (MFA) Mizil SA, which is engaged in the modernisation of the TR-85M1, the manufacture and modernisation of the infantry fighting vehicle MLI-84M and the manufacture of the tank turret and repair of heat engines, and SC Uzina Mecanica Bucuresti SA, which manufactures and maintains combat armoured vehicle. For Romanian-Western European and Israeli Co-operative Projects in the Armoured Sector, see Section 2.5.1: Romanian Joint Programme.

To conclude, the above-mentioned Romanian defence sectors have different sizes and financial performances. They have both either been privatised and restructured or are under way to being privatised and restructured. This makes the Romanian defence industry very different from those of the rest of Central and Eastern Europe. It may come as surprise to find that a country such as Romania, which is usually portrayed as a so-called Third World country, has a first class defence industry. The hard facts support this. It is also important to emphasise a lesser-known fact, namely that the development of the Romanian defence industry has very little to do with subcontracting work for the former Soviet Union, and more to do with their work for France as well as their extensive co-operation with Israel. Undoubtedly, both countries have left a special mark on the development of the Romanian defence industry and even now

Romanian Differences

92 E-mail of 18 April 2003
93 Jane's International Defense Review, January 2004, p. 31
94 Jane's Defence Weekly, 22 November 2000, p. 18

continue to play an important role. At the same time, it is important to stress that the Romanian defence sectors are continuously evolving technologically and remain economically viable and profitable as a result of pursuing painful but necessary restructuring. The Romanian aerospace sector, in particular, has not rested on its laurels as has, for instance, the Czech Republic aerospace sector.

Section 2: Industrial Co-operation

As we can see from Section 1, the six countries' defence industry capabilities differ not only in size and design, but also in their internal developments over the last ten years. The enterprises' past accomplishments have been put to the test. As a result, some of the countries' defence enterprises prospered, while others failed miserably. In addition, industrial co-operation with Western European companies underscored the clear division of the defence industry companies within Central and Eastern Europe. It has also been seen which of the companies was up to the task of initiating industrial co-operation and/or to being chosen by Western European and North American companies.

As presented below, industrial co-operation between Central and Eastern European states and Western Europe varies from country to country, as well as within particular defence sectors. It can be said that the subcontracting business is part and parcel of defence industry co-operation, although the relationship between the contractor and subcontractor is never equal. On the whole, co-operations as well as the subcontracting arrangements have neither been limited nor are growing faster than was initially expected by the Central and Eastern Europe countries. Whether this is a disappointment to both sides and what can be done to improve the situation will be dealt with below.

Co-operation – neither limited nor growing faster

2.1 Czech Joint Programme

Co-operation Programme for Czech-Israel/Western Europe/USA in the Armoured Sector

Modernisation of the T-72M1 proceeds under the leadership of the VOP 025 SP. In addition to the Israeli-based company, Nimda, which is the prime contractor for the tank power pack, US-based Allison Transmission supplies fully automatic transmission and a cooling system for the power pack, the UK-based Caterpillar Defence Products supplies diesel engines and the Italy-based Galileo Avionica supplies tank universal

reconfiguration modular systems (TURMS-Ts), and computerised day/thermal fire control systems.[95]

Czech subcontracts with North American companies in the Aerospace Sector

As for subcontracting, the Czech Republic Aero Vodochody AS does some work for Boeing, for Sikorsky Aircraft Corporation and has a small subcontract to work on the Canada-based Bombardier. However, there are no agreements to work with any Western European company.

This is the only known Czech joint programme known at present. Does this really mean that the Czech Republic is not interested in expanding its co-operation programmes? It appears, at least from a first glance, that the Czech Republic has all the necessary expertise to go it alone. In addition, in 1998, it decided to tie its future programmes to US companies. However, the current situation might change when and if the Czech government reopens tenders for the procurement of military aircraft and land forces vehicles. I have to stress one important point: the Czech Republic co-operative programme and subcontracts have not yet produced the results that the government expected, namely growing contracts with North American companies and, in particular, Aero Vodochody AS sales with Boeing's assistance to other countries. In addition, the aerospace sector has not improved its technological standards despite North American involvement in this sector. The Czech government might need to reconsider its potential involvement in further co-operation programmes with North American and Western European companies. The focus of co-operation needs to be shifted into the area of substantial technological improvements in the defence sector and not simply the transfer of technology or the adoption of new technologies originating in the West.

The focus of co-operation

2.2 Polish Co-operation

Polish-Western European Co-operation Project in the Ammunition and Missile Sectors

During MSPO '99 held in Kielce, Poland saw the debut of the new Polish-French Feniks-Z rocket for the BM-21 122 mm artillery rocket system. It was the result of a combination of the French Celerg Phoenix rocket motor and the Polish Pressta

[95] Idem; 6 November 2002, p. 29

Bolechow rocket body. The 20-year co-operation agreement between the two companies includes marketing for the Polish Army requirements as well as for other countries in Africa, Asia and Europe.[96]

Polish-Western European Co-operation Projects in the Armoured Sector

On 18 June 2002, Kiel-based Rheinmetall Landsysteme GmbH and the Polish company OBRUM Research and Development Centre for Mechanical Application signed an agreement to co-operate on modernising the Polish land forces' T-72M1-series main battle tanks, incorporating the technology from the Krauss-Maffei Wegmann (KMW) GmbH & Co KG Leopard 2-series main battle tank. The agreement included the possibility of licensed production in Poland of 120 mm ammunition for which Ratingen-based Rheinmetall DeTec is the design authority.[97] Jane's International Defense Review also noted that the two companies will jointly provide support for the 128 former German land forces Leopard 2 main battle tanks transferred to Poland.[98]

The Hämeenlinna-based manufacturer Patria Vehicles Oy will supply 690 armoured modular vehicles (AMVs) to the Polish land forces. Most of these will be manufactured in Poland at the facility of the Polish partner of the Patria Vehicles Oy, Wojskowe Zaklady Mechaniczne, in the southern town of Siemianowice Slaskie.[99] Jane's Defence Weekly also noted that, under the contract, WZM has the right to market and export Polish-built vehicles.[100]

Marketing and export

The PT-91M main battle tank ordered by Malaysia will be powered by the new Polish S-1000 1,000 horse-power (hp) diesel engine developed by PZL Wola, integrated with a Renk/SESM ESM 350 automatic transmission. The Malaysian army has selected the French Sagem's Savan 15 fire control system, which was tested on the PT-91M pre-prototype. The turret will receive super-fast electric azimuth and gun elevation engines developed by EADS. The second-generation self-defence/laser warning system SCC-1 Obra-3 from PCO SA company will be installed,

96 W. Luczak, "MSPO '99: The First Time in NATO", Military Technology, October 1999, p. 109

97 Jane's Defence Weekly, 26 June 2002, p. 15

98 August 2002, p. 12

99 Defense News, 31 December 2002, (http://www.defensenews.com/pgt.php?htd=i_story_1438573.html&…). The report was further clarified by Light Armoured Vehicles, an editorial supplement to Jane's Defence Weekly, 19 February 2003, p. 18

100 23 April 2003, p. 10

combined and integrated with Wegmann's 76 mm smoke/high energy grenades launchers. The PT-91M will also be also equipped with FN Hertsal MGs and with RRC9500 radios manufactured by Radmor SA on Thales Communications (formerly Thomson-CSF) licence.[101]

The PMC armoured bridgelayers based on the PT-91M chassis will combine Polish technology with MAN Technologies' 26 metre Leguan bridge.[102]

Polish-Western European Co-operation Project in the Artillery Sector

The AS90 Braveheart 155 mm/52 calibre SPG/howitzer turret has finally been selected for the re-equipment programme of the Polish Army's artillery units. On 26 July the relevant contract was signed between Marconi Land and Naval Systems (LANS) and Huta Stalowa Wola (HSW) SA. As part of the contract, Marconi LANS supplied an initial batch of six turrets, which were installed and integrated on a Polish-developed tracked chassis during a joint undertaking by HSW SA and Marconi LANS. An additional 72 systems are eventually to be procured in yearly batches of six vehicles each, to re-equip four artillery battalions. Production, including for instance the gun barrels, will be progressively transferred to HSW SA under a licence manufacturing agreement.[103]

Progressive transfer

OTOBreda of Italy and HSW SA of Poland have signed an agreement for the development of a new 25 mm two-person light turret intended for the Polish Army's proposed BMP-1 infantry fighting vehicle (IFV) modernisation programme. Under the terms of the agreement, the two companies will jointly develop a demonstrator turret. Series production will then gradually be transferred to HSW SA, which will eventually become the sole manufacturing source for both Poland and the export of modernised BMP-1s.[104] According to Wojciech Luczak's article in Military Technology, within the framework of the agreement, it is also HSW's and OTOBreda's intention to offer a complete modernisation package to BMP-1 users worldwide, to include the turret as well as the engine and suspension system.[105]

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101 W. Luczak, "Polish Armour Export Success", Military Technology, August-September 2003, p. 41

102 Ibid

103 T. Hypki, "The Polish Defence Industry Restructuring Programme", Military Technology, August 1999, p. 31

104 Jane's Defence Weekly, 27 September 2000, p. 16

Polish-Western European Co-operation Projects in the Naval Sector

A contract for a complete modernisation of three Orkan class Polish Navy missile boats (ORP Orkan, Piorun and Grom) was signed in June 2001 in Gdynia. Thales Naval Nederland (TNNL) was selected as the main integrator of the Tacticos command and control system, the Saab Bofors RBS-15 Mk 3 missiles and other ship systems, with the Naval Shipyard Gdynia (NSG) being the main contractor for all the work.[106]

Together with the German corvette consortium headed by the Hamburg-based Shipyard Blohm+Voss GmbH, NSG has been engaged in the new C-621 corvette building programme, to be known as the Gavron class.[107]

Polish Subcontracts with Western European Companies in the Aerospace Sector

PZL Swidnik SA manufacture three fuselage assemblies per month for the AugustaWestland A109 Power helicopter, and about 15 to 20 centre wing boxes per year for the Aerospatiale/Alenia ATR 72 regional aircraft.

PZL Mielec Company Ltd manufacture Boeing 757 doors and Hawk components for British Aerospace (BAE) Systems.[108]

BAE Systems has placed its largest work package to date in Poland, with a deal with PZL Mielec Company Ltd to produce all tail fins and flaps for the UK company's Avro Regional jets.[109]

PZL Mielec Company Ltd produces most of the jigs and tools for BAE Systems' Eurofighter assembly line, as well as for the Nimrod maritime patrol aircraft (MPA) programme. It also manufactures more than 2000 components for the Hawk rear fuselage and has just started assembling parts for the BAE Systems/Raytheon 800EX corporate jet.[110]

PZL Swidnik SA has a contract for thirty sets of airframe components for the cockpit area of the Mirage 2000-5 Mk 2, now being manufactured in Greece.[111]

According to Internet sources, on 26 March 2002 the first cockpit of Mirage 2000-5 Mk 2 was delivered by PZL Swidnik SA

105 "Millennium" MSPO 2000 in Kielce", Military Technology, October 2000, p. 107
106 Naval Forces, no.3, 2002, p. 24
107 Defence Procurement Analysis, Winter 2002/2003, p. 83., Naval Forces, no.1, 2003, p. 103
108 Aviation Week and Space Technology, 22 March 1999, p. 64
109 Flight International, 12-18 September 2000, p. 26
110 Military Technology, April 2001, p. 58
111 Jane's Defence Weekly, 30 October 2002, p. 18

to Dassault Aviation. The contract for the production of twenty-four single-seat version cockpits was signed in March 2001. In addition, Dassault Aviation requested PZL Swidnik SA to manufacture ailerons for three versions of its Falcon business aircraft.[112] The company has been developing its subcontractor business, and has received a ten-year, $US66 million deal from the US-based GKN Aerospace (to be precise, from the US branch in the UK, Cowes facility) for composite engine nacelles.[113]

Polish Subcontracts with Western European Company in the Electronics Sector

NATO standard IFF equipment, manufactured by CNPEP Radwar under Thomson-CSF licence has been progressively introduced for ground radar, missile batteries, aircraft and ships.[114]

Radmor SA has been building digital RP4G field radios for Thomson-CSF under a $US50 million government supply award concluded at the end of 1996.[115] Radmor SA has reached an agreement with Thales Communications to manufacture the latest TRC4000 Band IV/V high-capacity line-of-sight radio relays.[116]

2.3 Slovak Co-operation

Slovak-Western European Co-operative Programmes in the Armoured Sector

The Slovak companies Kerametal AS, Transmisie Engineering AS and ZTS Tees AS Martin have built a prototype of the Aligator 4x4 wheeled armoured multirole vehicle.[117] An international consortium has been set up to enhance the capabilities of the Aligator. The group included ZTS Tees Defence AS Martin (formerly known as ZTS Tees AS Martin), Kiel-based Rheinmetall Landsysteme GmbH and Bremen-based Atlas Elektronik GmbH.[118]

According to Internet sources reinforced by Armada International, some time in 1999 or early 2000 Trencin-based Konstrukta-Defence AS and GIAT Industries of France signed a

[112] http://www.pzl.swidnik.pl/AN5000/5100/5100_a_wiadomosciwydarzenia.htm/
[113] Flight International, 1-7 October 2002, p. 18
[114] Military Technology, October 1998, p. 105
[115] Aviation Week and Space Technology, 22 March 1999, p. 63
[116] Jane's International Defense Review, November 2003, p. 11
[117] Idem; September 1997, p. 18
[118] Jane's Defence Weekly, 11 April 2001, p. 30

co-operation agreement to develop a new NATO compatible medium weight tank turret to be integrated on T-72, M60 and Leopard 1 tanks.[119] The same issue of Armada International noted that both companies are looking for a firmer commitment from potential customers and propose forming an 'industrial club' for production.[120]

Slovak-Western European Co-operative Programme in the Artillery Sector

According to Internet sources reinforced by the Journal, on 14 December 2000 the Röthenbach-based company Diehl Munitionssysteme (DMS) signed a contract with the Slovak MoD to modernise the RM-70 (122 mm) artillery rocket launcher system. The programme will enable the system to use NATO standard multiple launch rocket system rocket pods in addition to the original 122 mm models.

For Slovakia this was the first co-operative project with a NATO member state. The development contract was followed by a procurement contract. For the industrial part, Diehl is co-operating with Trencin-based Konstrukta-Defence AS and Maintal-based Honeywell Regelsysteme GmbH.[121]

2.4 Bulgarian Subcontract with a Western European Company in the Arms Sector

Italian small arms manufacturer Beretta Holdings is set to boost its position in South-Eastern Europe. In May 2003 Beretta representatives visited three Bulgarian arms manufacturing facilities: Arcus, Arsenal and Opticoelectron. Arcus was chosen as the plant to launch the NATO standard production of pistols and assault rifles.[122]

[119] http://www.kotadef.sk/uk_03.html/; Armada International, no.2, 2003, p. 10

[120] Ibid

[121] http://www.diehl.com/diehl_gruppe/bin/en.jsp?druckversion=1&en Version=0&enDispW /; Military Technology, May 2003, p. 70

[122] Jane's Defence Weekly, 11 June 2003, p. 16

2.4.1 Bulgarian Joint Programme

Bulgarian-Western European Co-operative Project in the Electronics Sector

A new C2 system for Bulgaria's rapid reaction forces is being jointly developed by BAE Systems and Bulgaria's Samel 90 JSC military telecommunications plant.[123]

2.5 Romanian Joint Domestic Initiative

According to Internet sources, Bacau-based Aerostar SA together with Bucharest-based Aeroteh SA, Avioane Craiova SA, Jiar, Romaero SA and Turbomecanica SA set up the Company for Economic and Technical Development in the Aviation Industry (SODETA). The purpose of this company is to improve the efficiency in promoting, marketing and trading its products and services, to correlate production and repair activities in Romania for aircraft techniques licensed by foreign companies and to implement national aeronautical programmes.[124]

2.5.1 Romanian Joint Programme

Romanian-Western European Co-operative Projects in the Aerospace Sector

France and Romania

According to Internet sources reinforced by Jane's Defence Weekly, on 14 June 1999 two collaborative agreements were signed at the Paris Air Show between the French and Romanian aerospace industries, setting the foundation for a long-term partnership between the two countries.

The first agreement was between Aerostar SA and Thomson-CSF Communications (a subsidiary of Thomson-CSF) to form a new joint venture called Aerothom Electronics SA. This new company has a registered capital of which 60 percent are held by Aerostar SA, 10 percent by Jiar and 30 percent by Thomson-CSF Communications. Aerothom Electronics SA will manufacture IFF, professional electronics and radio navigation equipment at Bacau to fulfil a contract signed in 1996 between Thomson-CSF and Romanian MND. Aerothom Electronics SA will first assemble and then gradually take on the manufacture of all the equipment specified in the contract.

[123] Idem; 16 July 2003, p. 12; 15 October 2003, p. 24
[124] http://www.romanian-daily.ro/ARHIVA/RED41.html/

A second tripartite framework agreement has been signed between the Romanian MND, the President of the Romanian company SODETA and the Institut Aeronautique et Spatial du Toulouse, an educational co-operative agency of the French aerospace industry trade organisation, Groupement des Industries Françaises Aéronautiques et Spatiales (GIFAS). Under this framework agreement the way has been paved for Romanian aeronautical engineers to be trained and become specialists in advanced Western technologies.[125]

Jean-Louis Mascle, Eurocopter Romania's general manager, stated that the company, a subsidiary of EADS, is building an assembly line and component production facility for EC 135/165 helicopters at IAR SA Brasov.[126]

Romanian-Western European-Israeli Co-operative Programme in the Armoured Sector

The Romanian upgrade of the MLI-84 infantry fighting vehicle is undertaken by MFA Mizil SA as prime contractor with EADS, Switzerland-based Oerlikon Contraves, UK-based Perkins Engines Company and the Rafael Armament Development Authority of Israel.[127]

Romanian-Israeli-Western European Co-operative Programme in the Artillery Sector

The locally developed Atrom 155 mm/52 calibre self-propelled artillery system incorporates the latest version of the Israeli Soltam Systems Limited Autonomous Truck Mounted System (ATMOS) on the rear and is powered by a MAN Technologies 2866 LF 24 diesel engine, which develops 360 hp coupled to the Austria-based Steyr Motors VG 1600/300 transmission.[128]

Romanian-Western European Co-operative Programme in the Electronics Sector

According to Internet sources, on 2 July 2004 Finmeccanica unit Marconi Selenia Communications inaugurated a new defence electronics manufacturing joint venture in Romania, Elettra Communications. With this new company 51 percent are

[125] http://www.aerostar.ro/Files/news8.htm/; Jane's Defence Weekly, 23 June 1999, p. 20

[126] Jane's Defence Weekly, 4 December 2002, p. 20

[127] Idem; 26 November 2003, p. 15; Jane's International Defense Review, January 2004, p. 31

[128] Jane's Defence Weekly, 19 November 2003, p. 12

controlled by Marconi Selenia Communications, Marconi Selenia Romania and Marctel, a private Romanian company that Marconi Selenia is set to purchase. The remaining 49 percent are controlled by CN Romarm SA national company and Electromecanica Ploesti, a unit of Romarm. The group is to manufacture defence electronics equipment in Romania for the local and foreign markets.[129]

Romanian-Western European Co-operative Programme in the Naval Sector

As part of its drive for NATO compatibility, the Romanian Navy has been upgrading the communication system on its sole Marasesti class frigate. This reportedly involves the German company Aeromaritime Systembau GmbH based in Neufahrn, Romania's CN Romarm SA national company and the Military Equipment and Technologies Research Agency.[130]

Romanian Subcontracting with a Western European Company in the Aerospace Sector

According to Internet sources, in April 2002 Romaero SA signed a $US500 thousand contract with BAE Systems. The company is set to supply spare parts to BAE Systems' Nimrod MRA.4 maritime patrol aircraft. The contract might be extended to other parts, such as the panels for the same craft.[131]

To conclude, in spite of very extensive co-operation as well as the subcontracting businesses a rather limited number of defence enterprises in Central and Eastern European participates in them. Of these some are the country leaders dealt with in the report, and some are carefully chosen by the Western European and North American companies. It means that these enterprises stand the best chance of being integrated into the European Union defence industry infrastructure, and of keeping their contacts with North American companies. The rest of the Central and Eastern European enterprises are likely to disappear from the scene altogether in the years to come or, alternatively, might be subsidised by the six countries' governments. However, the latter scenario is very unlikely.

There might be some feelings of disappointment by the companies that are left out. However, it is evident from the above-mentioned report, that not all of the companies mentioned

129 (http://www.defensenews.com/story.php?F=3070067&C=europe)
130 Naval Forces, no.1, 2003, p. 104
131 http://desert-air.com/romania.html/

had any chance of being integrated into the EU defence industry infrastructure in first place. From the start, unrealistic expectations had been raised within companies in the Central and Eastern European countries' defence industries; their lack of fulfilment dealt a severe blow to them.

Undoubtedly, the six countries' particular focus on the aerospace and armoured sectors shows the importance that they attach to both sectors. The artillery sector also plays an important role, but only in a few of the Central and Eastern European countries. Poland and Romania, in particular, play a special role in the naval sector. As a result, I can foresee further military expenditure supporting these sectors. The electronics sectors of the six countries continue to play a very marginal role and therefore it can be said that their present and future roles will remain marginal or even disappear altogether.

Section 3: New Members' Procurement Policies *vis-à-vis* a European Integration Policy

Integration of unhealthy defence

As mentioned in the Introduction, ideas and debates about joint procurement first surfaced in 1994. However, they all proved to be unrealistic because of the non-go policy of the six countries. The countries' disjointed common interests led to the countries having their own individual procurement policies and options *vis-à-vis* Western Europe and the United States. These policies and options are discussed below. I would argue that the four countries' (excluding Poland and Romania) budgetary constraints combined with the by and large unrestructured defence industries and the industries' financial non-profitability have a negative effect on the countries' defence industries in their effort to integrate with EU infrastructure. In a matter of speaking, the EU defence industry management would be very reluctant to integrate with an unhealthy defence industry in a Central and Eastern European state. In addition, as Josef Fucik in the book "NATO Co-operation" noted, there are currently many unrealistic expectations in the countries relating to NATO membership, the expected entry into the EU and future participation in the European security and defence build-up.[132] Josef Fucik, however, did not spell out what these many unrealistic expectations are. One can only assume that at least some of them relate to the countries' managers' overestimated views that they are qualified to be considered equal to their Western European counterparts. In addition, some companies' industry managers continue to believe that they will survive without painful restructuring and lay-offs and can remain in the contractors' league. They might also believe that their own government would come to their rescue, in particular bailing them out of financial crises. Finally they might think that their companies will be integrated into the EU infrastructure anyhow, as their countries are currently accessing the Union. These are self-delusions and undoubtedly the short-sighted managerial staff will pay dearly for such miscalculations. Furthermore, as was pointed out in the Introduction, the integration of the six countries' defence industry infrastructures into the EU will take longer to accomplish. This means that more companies from Central and Eastern Europe might have the chance to be integrated. However, it needs to be clearly stated that this will not apply to all of the companies.

[132] J. Fucik, 2001, p. 49

Substantial changes

On the other hand, the EU defence industry agenda at large may finally see some substantial changes. The recent development, namely the probable creation of the European Armaments Agency (EAA) (also called the European Defence Agency (EDA)) has been accelerating throughout 2003. A number of journals have recently addressed this issue.[133] For early reports on the EAA, see footnote[134].

It is important to underline that the Western European experience with the current armaments organisations such as Organisation Conjointe de Coopération en matière d'Armement (OCCAR) and the West European Armaments Organisation (WEAO) was not very positive and the decision-making process proceeded too slowly. Although I agree with the point made by Flight International that EADS wants politicians to be taken out of the decision-making process much earlier in the procurement process[135], I foresee disagreements between the politicians and the defence industry managers. An additional point of disagreement might be the structure of the agency and its independence from the politicians[136].

According to Rainer Hertrich, EADS co-chief executive, OCCAR could be the basis of the organisation, but this depends on whether the new agency will get this power. Whether OCCAR will absorb the new agency is a matter that is still under

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133 Flight International, 25-31 March 2003, p. 25; Defense News, 28 April 2003. (http://www.defensenews.com/pgt.php?htd=I_story_1813540.html&tty=worldwide) Defense News, 5 May 2003, p. 11; 19 May 2003, p. 14; W. Hermann, `Zukunft Europäischer Rüstungskooperation´, Europäische Sicherheit, June 2003, pp. 23-27, see in particular p. 27; Military Technology, June 2003, pp. 8-9; Defense News, 23 June 2003, p. 18; Flight International, 24-30 June 2003, p. 20; Defense News, 6 August 2003 (http://www.defensenews.com). Defense News stated that Italy will lay the groundwork for a future EAA. The topic of laying the groundwork for a future EAA was discussed early on in the Defense News, 19 May 2003, p. 14 issue. The very scathing view of Francis Gevers, the current head of the Western European Armaments Group (WEAG) on the formation of the EAA was published in Jane's Defence Weekly, 10 September 2003, p. 49. For further information, see Defense News, 22 December 2003, p. 24 and p. 26 and notes 138-142.

134 http://www.occar-ea.org/occar/portaloccar/occarbase.nsf/vwContentFrame/N254SMTV400SLEREN/; http://www.iss-eu.org/chaillot/chai44e.html/, see in particular Chapter 2: Fortress Europe – real or virtual? and http://www.assembly-weu.org/en/documents/sessions_ordinaires/rpt/2002/1800.html/

135 Flight International, 24-30 June 2003, p. 20

136 Defense News, 5 May 2003, p. 11

discussion.[137] Italian Minister of Defence Antonio Martino told journalists on 24 September 2003 that the EAA would probably be launched in 2003. He also said that the agency would eventually replace joint bodies such as the OCCAR and should not be 'held hostage' by European defence companies that seek to keep out US products.[138] According to Internet sources, the meeting of the fifteen EU defence ministers and those of ten European states set to join the EU in 2004 was held in Rome on 10 October this year. Although they agreed to aim for the launch of an EU EAA by the end of 2003, the informal meeting produced no firm decisions. According to another report, Dutch Minister of Defence Henk Kamp said that WEAG, WEAO, OCCAR and the six nation 'Letter of Intent' (LOI) group should be replaced with "a single EU framework". He also stated that the proposed agency "offers us the opportunity to achieve that goal by the end of 2004". Jean Wesener, European Defence Industries Group secretary general agreed with Kamp's statement and, like Kamp, believes it could quickly be operational "by building on" the OCCAR experience.[139] According to Elly Plooij-van Gorsel, a Dutch member of the parliament advocates would like to see the EAA set up and running by 2007, but this is unlikely as the new agency will require approval from the European parliament[140] which might take a long time. According to the latest report the Italian official said that on 17 November year EU foreign and defence ministers are expected to call for the January 2004 creation of a 12-member agency implementation team that will flesh out the agency's legal, technical and financial details. According to an unknown diplomat the action plan for the creation of the agency will be nailed down by late 2004. If so, then the fifteen EU nations will have about a year to decide on the agency's location, fund its budget and hire staff. The EAA is supposed to open its doors sometime in 2006.[141]

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137 Flight International, 24-30 June 2003, p. 20

138 Defense News, 29 September 2003, p. 6

139 (http://www.defensenews.com/story.php?F=2276870&C=europe); Flight International, 30 September-6 October 2003, p. 18

140 Nature, no.425, 9 October 2003, p. 549

141 Defense News, 17 November 2003, p. 4. For further information, see Aviation Week Week and Space Technology, 1 December 2003, p. 17; Interavia, vol.58, no.673, October-November 2003, p. 8; Flight International, 2-8 December 2003, p. 20; Defense News, 22 December 2003, p. 24 and p. 26; K. von Sperber, `OCCAR – Management von Rüstungsprogrammen´, Europäische Sicherheit, January 2004, p. 49; Defense News, 2 February 2004, p. 4; D. Macrae, "European Arms Agency: One Step Forward…", Interavia, vol.59, no.675, January-February 2004, pp. 41-42; Flight International, 20-26 April 2004, p. 22; Defense

Despite the discussion about the date of its creation, it is evident that the formation of such an agency, which will be responsible for defence and security R&D, co-ordinate procurement, contribute to monitoring and reducing the capability gaps and drum up financial contributions from member states will be of utmost importance to the enlarged EU. Finally, the EU-wide organisation will hopefully replace the national agencies. It is also important to stress that the EU co-ordinated procurement policy will have a direct effect on new member states since the latter procurement orders have not yet been fulfilled. It is, however, not entirely clear to the Central and Eastern European governments what kind of policies EAA will pursue with regard to them since the agency as such does not yet exist. On this point, the EU needs to have a clear and well-articulated policy.

Procurement policy

As for participation of Central and Eastern European states in the EAA, I wrote in the Summary that managers of the defence industries have been and still are very interested in participating. However, interest and participation come at a cost, and that is something of which the managers ought to be aware. If they were able to bring money to the European table they would be accepted and treated as equals. Otherwise, they would be treated as poor relations and would pose a serious burden for the enlarged EU.

Czech Republic Procurement Policy and Options

The current difficult economic situation in the Czech Republic resulting in the drastic cut in the defence budget mentioned above prevents the government from spending money on procurement. Even the budget spent on modernisation projects is limited and this is unlikely to increase in future years. The viability of the Czech Republic's defence industries remains questionable, to say the least. However, the Czech Republic's aim of purchasing military aircraft and armoured personnel carriers remains on the government agenda. As a result, Western European and American manufacturers continue to pursue the Czech Republic

News, 3 May 2004, p. 6; (http://www.defensenews.com/story.php?F=2932418&C=europe; Flight International, 25-31 May 2004, p. 24; 1-7 June 2004, p. 5; (http://news.ft.com/servlet/ContentServer?pagename=FT.com/StoryFT/FullStory&c=Stor…);
Interavia, no.676, Summer 2004, p. 10; Defense News, 18 June 2004, p. 18; 19 July 2004, p. 46 and p. 50; Flight International, 20-26 July 2004, p. 32; Jane's Defence Weekly, 21 July 2004, p. 6; (http://www.defensenews.com/story.php?F=3111390&C=europe)

government vigorously, constantly putting forward their interest in selling military goods to the country.

As for the procurement policy of the Czech Republic, it can be said that the state procurement policy combines the following processes:

Combination of processes

- The Government first decides what it would like to procure and issues a formal tender.
- Western manufacturers use public relations campaigns to promote their product by presenting the technological advantages, economical benefits and financial incentives, including an offset package and political lobbying.
- The Government forwards the various offers to the military for their evaluation of, for instance, potential military aircraft. The military submits their recommendations including the economic cost evaluation.
- A Parliamentary Committee on Defence and Security assesses the economic cost, in particular, and conveys its recommendations to the Upper Chamber of the Parliament. The latter vote whether to approve or disapprove the potential procurement item.
- The Government cannot go ahead without parliamentary approval. As a result, the Government might be handcuffed by the parliamentary "No".

The whole process of finalising the deal might be very lengthy and, as a result, requires Western manufacturers to be very patient and understanding of the potential customer's domestic difficulties.

In addition, Western manufacturers have to provide extra financial incentives to out-manoeuvre their competitors, to spread their financial offers over a large variety of non-defence sectors as part of the offset arrangement, to pursue relentlessly the political and military leadership who, from time to time, might change, and to take into consideration the importance that parliament plays *vis-à-vis* the government.

Petr Necas, the Czech Republic Member of Parliament (MP) and Chairman of the Committee of Defence and Security stated, that "our cabinet has already been under pressure from defence companies around the world because there is a limited market today where it is possible to sell and actually get your money. I think it will be necessary to be careful because not everything which is good for a major defence company is good for the Czech Republic or its armed forces". Although Vladimir Vetchy,

Minister of Defence denied any pressure, he accepted Necas's point.[142]

Both the military and political leadership of NATO in Brussels and the US government have gone one step further by recommending that the Czech Republic do not procure new aircraft in the near future because of the heavy financial constraints that such a move would place on its already overburdened defence budget.[143] In addition, some NATO officials have recommended that the Czech Republic focus on acquiring new armoured fighting vehicles (AFVs) or modernising current assets, improving communications equipment and expanding its transport aircraft fleet.[144]

Lease rather than purchase

The decision to finally lease rather than purchase Gripen was based on technological performance and economic considerations. Political lobbying was less important than, for instance, in neighbouring Poland.The Czech Republic's procurement policy not to buy military aircraft in the first place was a result of domestic pressure, accompanied by NATO and the US government's encouragement not to buy. Nontheless,the MoD felt still obliged to purchase aircraft. However, as a result of the joint pressures potential aircraft purchases were cancelled.

This 2002 cancellation of a planned $US1.94 billion procurement order for twenty-four Swedish-built Gripens was the result of budgetary constraints and not because of any natural disasters, such as the floods that occurred in the summer of 2002, which, however, contributed further to the already shaky financial situation. As a result, the Czech government was left without modern multirole aircraft in service. The Czech Air Force's current inventory of twelve Soviet-built MiG-21 fighters will reach the end of its service life in the first quarter of 2005. As a result, the Czech Republic remains one of the major customers for military aircraft.

Jaroslav Tvrdik stated that if the Czech Republic decides to purchase used aircraft such as the ex-UK Royal Air Force (RAF) Tornado F3s, but does not come to an agreement with the UK, it could opt for used Lockheed Martin F-16s. The so-called 'zero option', under which the country would have no fighters at all after 2005, could mean that the Czech air force would buy the US joint strike fighter (JSF) in about 2010.[145] This has three drawbacks. First, 2010 is not a realistic target for the Czech air force to procure the JSF, since the aircraft might not enter service

142 Flight International, 16-22 January 2001, p. 34
143 Jane's Defence Weekly, 24 January 2001, p. 12
144 Idem; 5 June 2002, p. 2
145 Flight International, 13-19 May 2003, p. 24

before 2014. Second, the final cost of the JSF might make this aircraft unaffordable for the Czech government's financial allocations. Last, on 30 May 2003 Tvrdik resigned as a result of the twenty percent defence budget cut. Kostelka said that it was premature to state which procurement programmes will be cancelled. He noted, however, that he would like to see the acquisition of multirole fighters, which, however would not occur before the 2008-10 time frame.[146] On 9 July the Czech government officially approved plans to lease fourteen second-hand fighter aircraft for a period of at least five years. This will serve as an interim solution to meet its air defence needs until a definitive type can be selected in a new competition.[147] According to Internet sources, the Czech government decided on 17 December 2003 to lease Swedish-built Gripen aircraft that should be introduced into service in 2005.[148] On 16 June 2004 the Czech government approved a memorandum of understanding (MoU) which was signed on 9 June to lease fourteen Swedish-built Gripen aircraft.[149]

Interim solution

In late August 2003 the Czech Ministry of Defence reversed its previous decision to procure 400 wheeled armoured vehicles. It decided to procure 100. The vehicles would be assembled at the Sternberk-based VOP 026 AS.[150] The Czech National Security Council, however, approved a CzKc 25 billion ($US916.8 million) proposal submitted by the Ministry of Defence to procure 240 (and not 100) wheeled armoured vehicles. The Ministry of Defence plans to issue an international tender by the end of 2003. Deliveries are planned to run from 2006 through 2012.[151] The Czech Ministry of Defence delayed an international tender for procurement of wheeled armoured vehicles until June 2004 as a result of an audit that found discrepancies in the text of the tender criteria.[152]

It appears at first glance that the current Minister of Defence, Miroslav Kostelka, understands the financial realities and the limitations put upon the ministry by the government and the current economic situation. Perhaps this is the first good sign for the country and their future procurement of the military aircraft.

146 Jane's Defence Weekly, 18 June 2003, p. 20
147 Air Forces Monthly, September 2003, p. 9
148 (http://www.defensenews.com/story.php?F=2491002&C=europe)
149 Jane's Defence Weekly, 16 June 2004, p. 8
150 Idem; 27 August 2003, p. 10
151 Idem; 26 November 2003, p. 10
152 Idem; 5 May 2004, p. 12

Budgetary constraints

To conclude, budgetary constraints remain the most important factor on the Czech Republic government's agenda, precluding the government from procuring military items right away. While this problem remains unresolved for the time being, the MoD announcements that the country needs aircraft and land forces vehicles have been constantly postponed. The interim solution with the aircraft and the substantial decrease in procurement of the wheeled armoured vehicles indicate the importance of flexibility and *ad hoc* solutions for the government. The Czech Republic's domestic concerns over procurement policy and options may not coincide with the armaments policy of the EU as technological performance and economic considerations are the most important factor for the Czech Republic. In addition, a very substantial foreign direct investment (FDI) in the Czech Republic's defence and civil infrastructures may be too much for the EU at present, as it has not yet recovered economically from the last years of recession. The accession of the Czech Republic to the EU and the integration of its industry within the EU infrastructure will take time and be very difficult because of the Czech's unprepared and unrestructured defence industry and the EU's ambiguity about how to integrate financially non-viable industries. Beyond the usual rhetoric about how important it is to integrate new member states and their defence industries, the ways and means of carrying out such an integration are still unclear. In addition, as I have mentioned throughout this report, the Czech Republic aerospace sector has pursued a more active policy with North America than it has with Western Europe. The current lease of Gripens is likely to change the imbalance in favour of the EU member states, but it is too early to say what will be the long-term consequences of the Gripen lease. It needs to be stressed that leasing is no substitute for procurement of aircraft and the conditions attached to it.

Hungary's Modernisation and Procurement

On 7 April 1998, the first upgraded L-39OZO was handed to the Hungarian air force, another four were due by the end of 1998 and the prospect was that the air force would eventually overhaul the remainder of its 19-strong fleet of former East German air force trainers. The 19 L-39 trainers will apparently be used until around 2006 and then a procurement decision will be made.[153]

[153] Flight International, 22-28 April 1998, p. 20

In August 2002, the Russian Aircraft Corporation (RSK) MIG began work on fourteen MiG-29s. The work has extended the service life of the aircraft until 2005, when these are planned to be replaced by the Gripen.[154] Military Technology, however, reported that the first three aircraft are scheduled to arrive in the second half of 2006 and the whole fleet of fourteen aircraft would be operationally ready to accomplish its duties as of 2009 (and not as of 2006).[155]

Ferenc Juhasz, Hungary's Minister of Defence, stated that although the US administration has urged Hungary to abandon its Gripen lease in favour of acquiring ex-US Air Force F-16s, America was no longer continuing its sales efforts in his country.[156]

After renegotiations of the original contract that was signed in December 2001, Hungary will get more advanced NATO compatible aircraft in the first half of 2006 and not, as mentioned above, in 2005. Another amendment will mean that Hungary can purchase the aircraft at the end of the ten-year lease, namely by early 2013. Before any purchase can be finalised, the Hungarian parliament must approve the change to the deal.[157] Apparently Hungary needs to procure about thirty aircraft. However, it is probable that a further fourteen to sixteen aircraft will not be procured before 2010-13.

Hungary's lease of fourteen Swedish-built Gripens does not necessarily mean that it is going to procure the Gripen. It means, however, that under current conditions the Hungarian government decided that it was the best choice. Furthermore, Hungary's renegotiations of the lease agreement indicated the customer strength *vis-à-vis* manufacturer weakness and perhaps also an acquiescence to customer's demands. Hungary's stand against the USA's demands to reverse its decision to lease the Gripen showed the determination of a small country not to be bullied by a large one, as well as a decision to choose the product that suited it best from both an economic and a technological perspective.

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154 Kommersant, 10 October 2002; Jane's Defence Weekly, 16 October 2002, p. 76

155 June 2003, p. 50. Jane's Defence Weekly reinforced the Military Technology statement and also noted that the MiG-29 fleet will remain in service until 2009 (30 July 2003, p. 13) and not, as earlier envisaged, until 2005.

156 Jane's Defence Weekly, 11 September 2002, p. 2

157 Flight International, 11-17 February 2003, p. 17. For a clear change in the Gripen aircraft scheduled delivery, see note 156.

Major General Imre Balogh, Commander of the Hungarian Air Force stated that "in the long run, we will need to consider a replacement for the An-26 transport aircraft".[158] According to Internet sources, in the meantime the An-26 has been overhauled by the Kiev-based aircraft plant. Based on the current state of the fleet, the An-26 can undergo additional major overhaul, which would take it up to its maximum length of service. In view of the available budget, the Hungarian Air Force intends to retire the An-26s after the next major overhaul, in around 2010-13.[159] EADS-CASA SA C-295M is likely to be the potential replacement for the An-26.

Aerospace communication equipment also remains at the top of the government agenda. According to Professor János Szabó, Director-General of the Office for Strategic and Defence Studies within the MoD, the modernisation of the C2 system is a major issue in NATO recommendations. This programme comprises the modernisation, the reconstruction of communication devices in every branch of the army and the provision of communication network of garrisons. According to the plan, the microwave communications network of the Hungarian Armed Forces will be reformed; the digital telecommunications network will be enhanced; and the acquisition of tactical ultra-short-wave-short/wave radio devices and multi-band radios as well as tactical ultra-short-wave radios will be pursued.[160]

To conclude, Hungary's stand against the USA underlines the necessity of the Western European countries to come forward, to seize an opportunity produced by the Gripen's effect and to tie Hungary and its small but skilled work force to the EU defence industry infrastructure. I need to stress that the window of opportunity produced by the Gripen's effect is not going be open for ever. In addition, as I mentioned above for the case of the Czech Republic, leasing is not a substitute for procurement. In both countries procurement options have been postponed. If the EU wishes to integrate both countries' defence enterprises it needs to provide both countries' governments with clearly outlined, long-term proposals and guidelines as to what both countries' defence industries need to do in order to be integrated. Otherwise the Gripen effect and the current good will to buy European will evaporate.

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158 Military Technology, June 2003, p. 50

159 http://www.honvedelem.hu/cikk.php?cikk=13220/

160 E-mail of 11 April 2003.

Poland Procurement Options

In spite of Poland's recent procurement of forty-eight Lockheed Martin F-16 fighters the country cannot be ruled out as a potential customer of the European-built aircraft. In around 2014 Poland will retire its Soviet-built fleet of MiG-29s and Su-22s. Two to three years before that, the real competition between manufacturers will begin. By that time Poland will need to procure between forty-eight and eighty aircraft. Whether Lockheed Martin will repeat its success story is not 100 percent certain. In addition, Poland will need between sixty and sixty-four advanced trainer and light combat aircraft by around 2007-09. Competitors for this order are likely to include companies such as Aermacchi of Italy, Aero Vodochody AS, BAE Systems, EADS, Korean Aerospace Industries (KAI), RSK MIG and Yakovlev.

To conclude, Poland as the largest new member of the EU with the largest defence industry infrastructure and the most extensive co-operation programmes poses a serious problem for the EU. Poland demands to be taken seriously, to be treated equally as, for instance, is Spain, and will probably demand that it uses its defence infrastructure as extensively as possible. It appears that, for instance, EADS-CASA SA's experience with PZL Warsawa-Okecie SA restructuring is not exactly a successful one, to say the least. Whether the above-mentioned newly emerged aerospace sector and armoured sector infrastructures will be competitive and resilient enough to withstand future uncertainties ahead remains to be seen. Thus, Polish defence industry integration may prove to be more difficult and take longer than is currently envisaged.

In an interview with Jerzy Szmajdzinski, Poland's Minister of Defence, he stated that "in order to restructure the armed forces of the EU member states and to increase the defence potential to close the gap between the European capability and that of the United States we need more effective political, scientific and economic co-operation between the EU states in the armament field. Not only do we support this process but we also wish to participate therein".[161] Jerzy Szmajdzinski has not stated explicitly what kind of support Poland would be ready to provide. In addition, "more effective political, scientific and economic co-operation as well as participation" would come at a cost. I question Szmajdzinski's assertion that Poland is ready to bring money to the European table. The unsubstantiated rhetoric will not bind the Polish defence industry to the EU defence industry

[161] Polska Zbrojna/Special Edition, no.34 (292), 2002, p. 8

infrastructure. Furthermore, frustrations and recriminations on both sides will only increase.

Slovak Republic Modernisation and Procurement Options

Although the procurement options for the Slovak Republic were not so widely debated there as perhaps in the Czech Republic and Poland, they were discussed nevertheless. Robert Fico, chairman of the opposition Smer Party, stated that no one at NATO Headquarters had insisted that in order for the Slovak Republic to join NATO Slovakia should buy new multirole aircraft.[162] The US government-sponsored report of 2000 on the status of the Slovak armed forces suggested that it should not invest in new fighters before 2010.[163]

The Slovak Republic procurement policy follows the Czech Republic guidelines. For the former, see above.

Slovakia intends to procure eighteen fighter aircraft in about 2009-10 and ten advanced trainer and light combat aircraft in about 2008-9. However, much depends on the availability of funds allocated for the purchase. Throughout 2001, on 4 April 2002, and again in early January 2003,the Slovak government deferred the decision to procure fighter aircraft. As a result, the government has decided that the Slovakian repair plant LOT SP should upgrade the L-39 advanced trainer, and that the same Slovakian facility– with the assistance of RSK MIG– should partially upgrade the MiG-29. The spare parts and partial upgrade of the MiG-29 will be covered by the Russian government as part of it debt repayment to Slovakia.

Availability of funds

Major General Jozef Dunaj, Commander of the Slovak Air Force, stated that in order to fulfil special tasks such as search and rescue (SAR) and reconnaissance, a further Mi-17 modernisation enhancement is being prepared. Upgrade programmes for the An-24, L-410 and L-39 are currently in progress and these will be followed by similar programmes for the Mi-2 and Mi-8 helicopters. The intention is to complete the ongoing aircraft and helicopters modernisation projects by the end of 2008.[164]

To conclude, the Slovak aerospace sector's ability to upgrade the current air fleet and to manufacture the Alligator wheeled armoured multirole vehicle show the strength of the local defence industry as well as its potential contribution to the expanded EU defence industry infrastructure. Whether the Slovak Republic will

[162] Jane's Defence Weekly, 21 February 2001, p. 11

[163] Air International, June 2001, p. 325. Jane's Defence Weekly, 18 December 2002, p. 9 reiterated earlier statements.

[164] Military Technology, June 2003, p. 57

prefer to buy European over American is not at all obvious. However, as in the above-mentioned case of Hungary, the EU has a good chance of integrating the Slovak Republic defence enterprises and the time must not be wasted.

Bulgarian Modernisation and Procurement

General Dimitar Georgiev, Commander of the Bulgarian Air Force's Air Defence Corps announced on 28 August 2001 that Sofia had decided against acquiring Lockheed Martin F-16 fighters due to financial constraints. According to Bulgarian military sources, the country intends to upgrade its MiG-29 fleet.[165] And signed an agreement with the RSK MIG to team with Thales Avionics and the Georgi Benkovski Plant to upgrade twenty MiG-29s. The Bulgarian facility will overhaul the airframe and engines, while RSK MIG will undertake the overhaul of the MiG-29s avionics, radar and weapon systems in Russia. Thales Avionics, meanwhile, will be involved in the installation of new radios, global positioning systems (GPSs), instrument landing systems (ILSs), tactical air navigation (Tacan) and identification friend or foe systems, which will bring the aircraft up to NATO operating standards.[166] The Bulgarian Air Force hoped to have six 'life-extended' MiG-29s back in operational service by late July.[167] However, according to Jane's Defence Weekly the programme is behind schedule, without a single aircraft ready.[168] Jane's Defence Weekly cited Lyubomir Ivanov, Deputy Foreign Minister, who said the government hopes that a sufficient number of fighters will be modernised by May 2004[169]; which is almost two years later than originally scheduled. According to the latest Internet report the Bulgarian Minister of Defence, Nikolai Svinarov, told the Russian company RSK MIG that the Bulgarian government wanted to cancel its contract with that company because it had failed to do the work. Svinarov also said that BAE Systems, Elbit Systems Limited, Israel Aircraft Industries (IAI) and Sagem were being considered to take over the MiG-29 upgrade contract and also modernise the air force's thirty-six helicopters.[170]

The Bulgarian MoD is preparing a bid for the Mi-24D/V and Mi-17 avionics upgrade and a service life extension that will keep the NATO-interoperable Mi-24s and Mi-17s in service until

165 Jane's Defence Weekly, 5 September 2001, p. 13
166 Air Forces Monthly, October 2002, p. 8
167 Idem; May 2003, p. 8
168 7 May 2003, p. 12, 25 June 2003, p. 5 and 15 October 2003, p. 25
169 7 May 2003, p. 12
170 (http://www.defensenews.com/story.php?F=2684218&C=europe)

around 2015. The estimated cost of the upgrade is in excess of $US105 million. The Bulgarian MoD approved the upgrade requirement in early October 2002 and was expected to announce a tender by late March or early April 2003.[171] Jane's Defence Weekly cited Colonel Kiril Stoichev, director of the Armament Policy Department within the MoD, who stated that the project will be submitted to the cabinet in July, with the view to open a tender at the end of July or August. When a tender will be announced remains to be seen.[172]

The MoD has earmarked Bgl 44 million ($US23.2 million) for procurement and modernisation in 2003. According to Georgi Ganchev, director of the MoD's budget planning and management department, the government will be able to spend more on the purchase of NATO standard equipment and modernisation only after army restructuring is completed;[173] in other words, by 2010.

To conclude, Bulgaria's procurement situation is very similar to that of the Czech Republic, namely, budgetary constraints accompanied by constant postponement of modernisation programmes.

Romania's Procurement Options

Romania is likely to procure eighteen military aircraft as early as 2007-09 and/or as late as 2010-2012 to replace its fleet of the MiG-29 and, in perhaps about 2012-15, will procure another batch of eighteen or more aircraft to replace the upgraded MiG-21 Lancers. According to Brigadier General Ion-Eftimie Sandu, the Romanian MND expressed no preference as to the type of aircraft, except that they must fulfil the future operational requirements of the Romanian Air Force, and they must meet performance-optimum cost-criteria. Taking into account the cost of such a programme and the involvement of the domestic defence industry in it, this decision may also be a strategic one, based on the new offset law (of 2002) and the Life Cycle Management approach. In other words, the right strategy was and still is to get the best value for money.[174]

Performance-optimum cost-criteria

To conclude, Romania presents a clear cut case with regard to procurement options, namely performance-optimum cost-criteria. It is also clear that the domestic defence industry will be involved. The newly established EAA might have a better chance

171 Air Forces Monthly, April 2003, p. 8
172 25 June 2003, p. 5
173 Jane's Defence Weekly, 8 January 2003, p. 10
174 E-mail of 20 July 2003.

to explain its policies to Bulgaria and Romania since both countries will access the Union in 2007 and by that time the EAA would be functioning properly.

The six countries' procurement options clearly demonstrate that the EU member states, whether we currently refer to Sweden or the UK, remain in the competition race *vis-à-vis* the United States. It also confirms the thinking of the countries' government officials and defence industry managers, namely that they will procure the items that are best from their own points of view. However, the six countries' policies with regard to the as-yet to create EAA remain vague and imprecise. The same, however, can be said about EU policies with regard to the Central and Eastern European countries.

Mid- and long-term procurement and co-operative policies

The biggest question mark, however, remains over whether the present initiative (such as the forthcoming formation of the EAA) will lead to increased co-operation and co-ordination in procurement in particular, or whether the dream of the European politicians and defence industry managers will remain just a pipe dream. Undoubtedly, the EU and its new member states will have to address in clear terms and without ambiguities mid- and long-term procurement and co-operative policies within the enlarged union. The integration process will be a long one and undoubtedly this has to be kept in mind.

Conclusion

There is no correspondence between the Central and Eastern European states' co-operative/-ation programmes and projects with Western European companies and their procurement of military hardware. For instance, Poland, as was presented in Section 2, has got the most extensive co-operative programme scheme with their Western European counterparts, however, this has not prevented Poland from purchasing Lockheed Martin-built F-16 aircraft. On the other hand, Hungary so far has no co-operative programmes, but it has decided to lease the Swedish-built Gripen aircraft. In spite of the general perception that the Romanian government tends to view the French government as its main benefactor on the political scene, it might be wrong to assume that the Romanian government will therefore prefer to purchase French-built aircraft. Special political preferences are not necessarily translated into purchases of specific products. On the other hand, it is important not to underestimate the role of political preference in the customer's final assessment for procuring military items. Economic, technological and, undoubtedly, financial aspects remain at the top of the six

countries' procurement agendas. Furthermore, in order to counterbalance offset packages, deeper and wider co-operation in the defence sector is required. For instance, the manufacture of larger and more complex items of aircraft equipment may need to be transferred to the defence industry facilities of the Central and Eastern European countries. At that point I can foresee a disagreement between the manufacturer and the customer. It is, however, important to keep in mind that the customer is king and it is the customer who dictates the rules. This point appears to have been overlooked by the EU member states.

To conclude, co-operative programmes are not necessarily a precondition for potential purchases. They are, however, useful for the defence industries of the Central and Eastern European states, since they emphasise the strength of particular sectors *vis-à-vis* the weakness of others. Whether Central and Eastern European governments will pay attention to the particular weaknesses of their defence industries remains unclear. The governments tend to overestimate the strength and importance of the industry as a whole and therein lies their weakness. It is clear, however, that the managers of Western European defence industries must pay attention to the sectors and the particular companies that they consider worth investing in which, in turn might offer these sectors and their affiliated companies a fairly secure present and, potentially, a successful future. The rest are likely to disappear from the scene, whether the Central and East European governments like it or not. The EU will need to articulate more clear a policy with regard to the enterprises from Central and Eastern Europe that they wish to integrate.

No correlation

There is also no correlation between companies' financial performances and the stake that Western European firms hold in them. Most of the Central and Eastern European defence companies are not in a good, healthy financial shape, which, however, does not preclude, for instance, EADS from purchasing a 51 percent stake in PZL Warsawa-Okecie SA and Boeing purchasing a 35 percent stake via Boeing Ceska in Aero Vodochody AS. Importance was attached to a particular country's domestic market with a view to using the local facility as a Trojan horse to advance manufacturer sales. Neither the strategy of Boeing nor EADS has so far proved to be the correct one. For the time being, only the Eurocopter strategy in Romania has proved to be successful. In the meantime, Eurocopter Romania has delivered helicopters to the United Arab Emirates (UAE).

The Central and Eastern European states' financial constraints, combined with the local defence industries' managers over-optimism about their niche market on the European scene,

hinder both the processes of procurement and integration. In addition, Central and Eastern European MNDs/MoDs, in spite of their wish not to let down their counterparts in NATO, need to make a realistic assessment of their countries' financial strength. Western European political lobbying alone will not bear fruit in the long run. The combined policy of economic incentives, broad technological participation of the companies in the domestic defence industry in various projects, as well as the retraining of employees, together with the ongoing restructuring and streamlining of the companies might bring the Central and Eastern European defence industries closer to the West. This might ultimately lead to a consolidation of the European defence industry.

Realistic assessment

Finally, for the time being, US aerospace manufacturers have successfully pursued Poland, seeing them as the largest slice of the market. However, it is hard to say whether the USA will be successful with other countries. Undoubtedly, Hungary's case has proved not so easy for the US government to swallow. The Czech Republic is another country where Boeing made a strategic mistake and for the moment has lost a potential customer. This shows that neither the American nor Western European aerospace manufacturers can take the markets in Central and Eastern Europe for granted. The integration of new member states and their defence industry infrastructures, as mentioned above, will take longer that is currently expected. The EU member states, particularly their defence industries management, need to be patient but at the same time clearly identify the strength and weaknesses of the new member states' defence enterprises. In the long term successful integration will make the enlarged EU defence industries stronger and more competitive. On the other hand, unsuccessful integration will cause serious damage to the enlarged EU.

Appendix:

Defence Company Websites

There at least three well-known search engines for data on the defence industry enterprises in Central and Eastern Europe:

- http://www.cast.ru/english/links/
- http://defence-data.com/ripley/pagerip1.htm/ and
- http://home.tiscali.nl/~sb098018/companies/. .

Czech Republic

Catalogue of the Czech Defence Industry 2001-02 at http://katalog.czech-aop.cz/

Defendory International 2002 Catalogue

Aero Vodochody AS, http://www.aero.cz/

Ceska Letecka Servisni (CLS) AS, Website is not available.

Dicom SPOL SRO, http://www.dicom.cz/

ERA AS, http://www.era.cz/

Letecke Opravny Malesice (LOM) SP, http://www.lom.cz/

Letecke Zavody (LM) AS, http://www.let.cz/

Meopta Prerov AS, http://www.meopta.com/ and http://www.meopta.cz/

Vojensky Opravarensky Podnik (VOP) 025 Novy Jicin SP, http://www.vop025.cz/

VOP 026 Sternberk SP, http://www.vop.cz/

Zbrojovka Vsetin AS, http://www.zvi.cz/

Hungary

Danubian Aircraft Company (DAC), http://www.danubian.hu/

MoD Currus Armoured Vehicle Technique Company (also known as the Currus Company), http://www.currus.hu/

MoD Electronic Directorate Shareholding Company (SHC), http://www.hmeirt.hu/

Poland

http://www.polishproducts.pl/

http://www.ilot.edu.pl

Centrum Techniki Morskiej (CTM)/R&D Marine Technology Centre, http://www.ctm.gdynia.pl/

ETC-PZL Aerospace Industries Sp. z.o.o, http://www.ai.com.pl/

Huta Stalowa Wola (HSW) SA, http://www.hsw.pl/

ZM Mesko SA, http://www.mesko.com.pl/

OBRUM Research and Development Centre for Mechanical Application, http://www.obrum.gliwice.pl/

PCO SA, http://www.pcosa.com.pl/

Pressta SA, http://www.pressta.poznan.pl/

Polskie Zaklady Lotnicze (PZL)/Polish Aviation Factory Mielec Company Ltd (former PZL Mielec), http://www.pzlmielec.pl/

WSK PZL Rzeszow SA, http://www.wskpzlrz.com.pl/

PZL Swidnik SA, http://www.pzl.swidnik.pl

PZL Warsawa-Okecie SA, http://www.pzl-okecie.com.pl/

Radmor SA, http://www.radmor.com.pl/

CNPEP Radwar, http://www.radwar.com.pl/

Stocznia Marynarki Wojennej (SMW)/Naval Shipyard Gdynia (NSG), http://www.navship.com.pl/ and http://www.navship.pl/

WB Electronics Sp. z.o.o, http://www.wb.com.pl/

Wojskowe Zaklady Mechaniczne (WZM)/Military Mechanical Works, http://www.wzms.pl/

Zaklady Mechaniczne (ZM) Bumar Labedy SA, http://www.bumar.gliwice.pl/

Slovakia

DMD Group AS, http://www.dmd.sk/

Kerametal AS, http://www.kerametal.sk/

Konstrukta-Defence AS is a member of the DMD Group AS, http://www.kotadef.sk/

Letecke Opravovne Trencin (LOT) SP, http://www.lotn.sk/

Povazske Strojarne Letecke Motory (PSLM), http://www.pslm.sk/

Transmisie Engineering AS, http://www.transmisie.sk/

Vojensky Letecke Technicky a Skusobny Ustav(VLTSU)/Military Aviation Technical and Testing Institute, http://www.vltsu.sk/, Slovak-language site, English version is not available.

VOP 027 Trencin SP, http://www.vop027.sk/

ZTS Dubnica nad Vahom plus AS is a member of the DMD Group AS http://www.ztsdubnica.sk/. See also http://www.ztsspecial.sk

ZTS Tees Defence AS Martin (also known as DMD Mobiltec AS) (former ZTS Tees AS Martin), http://www.mobiltec.sk/ Website does not work

Bulgaria

Arcus Company, http://www.arcus-bg.com/

Arsenal joint-stock company (JSC), http://www.arsenal-bg.com/

Aviotechnica JSC, Website is not available.

Georgi Benkovski Plant (also known as the Plovdiv Aviation Repair Plant), for Website, see Terem.

Beta JSC, http://www.beta.bg/

Dunarit JSC, http://www.dunarit.rousse.bg/ Website does not work

Khan Kroum Plant, for Website, see Terem.

Laser and Optical Technologies (LOT) JSC, via http://nanotechweb.org/ Plovdiv-based Optical Technologies has nothing to do with LOT.

ARZ Lulin/Lyulin JSC, via http://www.bfia.org/30063/

Opticoelectron, http://www.opticoel.com/, http://opticoelectron.bgcatalog.com/

Samel 90 JSC, see http://samel90.bgcatalog.com/

Terem SHC, see http://terem.bgcatalog.com/

Vazovski Mashinostroitelni Zavodi (VMZ or Vazov Engineering Works), http://www.vmz.bg/, Website does not work properly.

Vola, Website is not available.

Romania

Aerofina SA, http://www.aerofina.ro/

Aerostar SA, http://www.aerostar.ro/

Avioane Craiova SA, http://www.acv.ro/

Intreprinderea Aeronautica Romana (IAR) SA, http://www.iar.ro/

Mechanical Factory for Armament (MFA) Mizil SA, http://www.mfa.ro/

Romaero SA, via http://desert-air.com/romania.html/

Turbomecanica SA, http://www.turbomecanica.ro/

SC Uzina Mecanica Bucuresti SA, Website is not available.

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B. Mariani, C. Hirst. 2002. Arms Production, Exports and Decision-Making in Central and Eastern Europe. London, Saferworld, June.
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T. Hypki. 1999. "The Polish Defence Industry Restructuring Programme". Military Technology, August, pp. 23-34.

R. Jaxa-Malachowski. 2000. "Romania's Drive to Privatise its Aerospace Industry". Interavia, vol.55, no.641, April, pp. 20-21.

J. Kiss. 1997. Defence Industry in East-Central Europe: Restructuring and Conversion. New York, SIPRI: Oxford University Press.
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Marian Ilie	Personal Adviser to the Deputy Minister, Romanian Ministry of Industry and Resources
Geza Peter Kovacs	President of the Hungarian Defence Industry Association
Slawomir Kulakowski	President of the Polish Chamber of National Defence Manufacturers
Wojciech Luczak	Editor of the Defence Monthly Raport
Bozhidar Penchev	State Expert at the Directorate Sector Analysis within the Bulgarian Ministry of Economy
Air Flotilla Brigadier General Ion-Eftimie Sandu	Deputy of State Secretary and Chief of Armaments Department within the Romanian Ministry of National Defence
János Szabó	Director-General of the Office for Strategic and Defence Studies, Hungarian Ministry of Defence
Todor Tagarev	Director of Programme at the Centre for National Security and Defence Studies under the Bulgarian Academy of Sciences
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