

Appendix 11C. The arms industries of the Russian Federation, Ukraine and Belarus

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I. Introduction

Of all the successor states to the Soviet Union (USSR), the Russian Federation, Ukraine and Belarus are the three with the largest arms industries in terms of the number of facilities and the volume of military output and arms exports. They are also geographically close to Europe and have the potential to become close partners of the European Union (EU) or, in the distant future, even EU member states.

Since 1999 the Russian arms industry has experienced unbroken growth of output and an unusually long period of stability in its administrative arrangements. However, growth has continued to be export-led and the apparent stability has been deceptive. Restructuring and reform have faltered and deep-rooted problems are beginning to threaten the industry's future viability. Analysis of these developments has been complicated by restriction on the access to reliable information.¹

II. The arms industry of the Russian Federation

Administrative arrangements

In May 1999 the arms industry was reorganized into five agencies under the policy leadership of the Ministry of Industry, Science and Technology. The industry minister, Ilya Klebanov, had the status of deputy prime minister and overall responsibility in the government for the defence sector. These arrangements remained unchanged until March 2004, except that, in February 2002, Klebanov lost his deputy premiership and, in November 2003, left the government to become the presidential envoy to the North-Western Federal District. His post as industry minister was filled on an acting basis pending the presidential elections in March 2004. Deputy Prime Minister Boris Aleshin, formerly deputy minister for industry and head of the State Committee for Standards, assumed responsibility in the government for the arms industry from April 2003. In the new government, formed in March 2004 under Prime Minister Mikhail Fradkov, the five agencies were dissolved into a new Federal Agency for Industry, headed by Aleshin. Within the agency a separate body will be retained to oversee the space programme. This change once again provides the defence industry with unified administrative oversight, in effect restoring the pre-May 1999 position, when there was a Ministry of the Defence Industry. However, the new agency will be much more compact, with a staff of less than 200 employees.² Formally, the agency is

¹ In 2003 the specialized information agency serving the Russian arms industry, *Teleinformatsionnaya Set' Voenno-Promyshlennogo Kompleksa' (TS VPK)*—the tele-informational network of the military-industrial complex—switched to a more commercial and regulated basis, limiting access to up-to-date information, including quantitative data on the industry's performance and structure.

² The Internet site of *Rossiiskoe Agenstvo po Sistemam Upravleniya*, the Russian agency for control systems (RASU), is at URL <<http://www.rasu.ru>>.

Table 11C.1. The scale of the Russian arms industry: establishments (2002) and labour force (2001)

Figures are numbers of establishments.

Industrial sector	Total number	Type of establishment			Type of ownership			Labour force, 2001
		Industrial enterprises	R&D orgs	Other	State	JSC(S) ^a	JSC	
Aviation	301	152	106	33	81	139	81	504 000
Missile and space ^b	108	38	61	9	82	15 ^c	11 ^c	266 000
Electronics	293	178	96	19	79	91	123	156 000
Radio ^d	308	160	115	33	99	72	137	167 000
Communications ^e	151	79	67	5	62	40	49	98 000
Shipbuilding	166	109	53	4	71	54	41	213 000
Armaments ^f	128	63	54	11	53	45	30	329 000
Munitions	134	81	36	17	103	15	16	219 000
Total	1 589^g	860	588	131	630	471	488	1 952 000

^a Joint stock company with a state shareholding, in some cases a single golden share.^b Data for the missile-space industry refer to 1 Dec. 2002.^c Author's estimate based on known data for 2000.^d The radio industry includes production and development of radio and radar systems, plus air defence missiles.^e The communications industry includes telecommunications equipment for military and civilian purposes.^f The armaments industry includes equipment for ground forces, including armour, artillery systems, infantry weapons, and optical equipment.^g In addition, there are *c.* 28 enterprises under the Ministry of Industry, Science and Technology, but they account for only 0.5 per cent of arms industry output.

Sources: Number and type of establishments: Teleinformatsionnaya Set' VPK (Tele-informational network of the military-industrial complex), 10 Dec. 2003, URL <<http://ts.vpk.ru/corporate/otrasli>>; for the missile-space industry see also Informatsionnoe Agenstvo (Information agency) TS VPK, 25 Jan. 2003, URL <<http://i.vpk.ru/rest/struct/sostav>>. Employment: calculated by the author; structure from Informatsionnoe Agenstvo TS VPK, 11 July 2002, URL <<http://i.vpk.ru/vpkrus/vvedenie/2001>>; total calculated from known total for Jan.-Oct. 1997, Informatsionnoe Agenstvo TS VPK, 25 Jan. 2003, URL <<http://i.vpk.ru/vpkrus/otrasli>>; and index of total employment, Informatsionnoe Agenstvo TS VPK, 25 Jan. 2003, URL <<http://i.vpk.ru/sbornik2001/proizvodst>>.

subordinate to the Ministry of Industry and Energy, headed by former Deputy Prime Minister Viktor Khristenko. General oversight of the arms industry is provided by the Commission of the Government for Military-Industrial Questions, chaired by the Prime Minister, but in recent years it has not met very often, leaving effective control with Aleshin.

While there has been stability in the administrative arrangements for the arms industry itself under President Vladimir Putin, this has not been the case with regard to two closely related areas: arms procurement and military exports. Overall responsibility for the elaboration and implementation of the state defence order, which includes procurement of weapons for the armed forces and related research and development (R&D), rests with the Ministry of Economic Development and Trade, in

particular with Vladislav Putilin, a deputy minister appointed in 2000. Putilin is also responsible for economic issues relating to the armed forces, mobilization preparation of the economy and the system of material reserves.³ As before, the Ministry of Defence (MOD) and other agencies of the armed forces—such as the Ministry of the Interior, the border guards (subordinated in 2003 to the Federal Security Service, FSB) and the railway troops—have their own armaments directorate responsible for procurement. In March 2003, however, Putin decreed the formation of an additional agency, the State Committee of the Russian Federation for the Defence Order, which is attached to the MOD. This new body is chaired by a first deputy defence minister, Vladimir Matyukhin, and is charged with securing the implementation of a single state policy in the field of the development and production of general purpose weaponry used by more than one military agency.⁴ The goal is to achieve a much greater degree of commonality and standardization in the arms procured by the armed forces, gradually eliminating a characteristic feature inherited from Soviet times: the practice of each defence-oriented ministry ordering different types of weapon of the same class. In procurement, the MOD now has enhanced powers in relation to the Ministry of the Interior, the FSB and other forces, and it is expected that this will secure longer production runs and lower costs.

The Ministry of Defence has also gained additional powers in the field of arms exports. In December 2000 a new Committee of the Russian Federation for Military–Technical Cooperation with Foreign States (KVTS) was created, chaired by Deputy Defence Minister Mikhail Dmitriev. Under the committee is an inter-agency working group for securing the rapid approval of new contracts.⁵ Analysts believe that this enhancement of the role of the MOD in the control of arms exports was designed to strengthen military influence over the use of earnings from arms exports in order to secure the development of new weapons in accordance with the State Programme of Armaments.⁶ By a decree of November 2003 the state arms export company, Rosoboronekспорт, lost its independence. It was subordinated to KVTS, thereby enhancing further the influence of the MOD in the field of arms exports.⁷ This means that the MOD now has the dual role of licensing authority and arms sales promotion.

In addition to Rosoboronekспорт, six companies retain independent export rights, the most prominent being MiG and the Tula design bureau of instrument making (a major developer of infantry weapons). In addition, following a decree of November 2002, 15 companies now have the right to engage independently in foreign activity for smaller-scale deals involving the supply of spares, servicing and training.⁸

³ Interview with Putilin, *Krasnaya Zvezda*, 20 Aug. 2003, URL <<http://www.redstar.ru/2003/08/20/>>.

⁴ *Sobraniye Zakonodatel'stva Rossiyskoy Federatsii* [The collection of laws of the Russian Federation], no. 12 (2003), article 1102. The new state committee has an authorized staff of 300, including 250 servicemen. In the Mar. 2004 government reorganization, it was renamed the Federal Service for the Defence Order.

⁵ Mezhhregional'nyi Fond Informatsionnykh Tekhnologii, the inter-regional fund for information technology, 1 Aug. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob01-08-03/>>, 1 Aug. 2003. In Mar. 2004 KVTS was renamed the Federal Service for Military–Technical Cooperation.

⁶ Kuzyk, B. *et al.*, *Rossiya na mirovom rynke oruzhiya* [Russia in the world arms market] (Voennyi Parad': Moscow, 2001), pp. 721–22, 772.

⁷ *Nezavisimoe Voennoe Obozrenie*, 21 Nov. 2003, URL <<http://nvo.ng.ru/armament/>>.

⁸ Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 11 Dec. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob11-12-03/>>; and *Nezavisimoe Voennoe Obozrenie* (note 7), 28 Nov. 2003, URL <<http://nvo.ng.ru/>>.

Table 11C.2. Industrial output of the Russian arms industry, 2000–2003
 Figures are based on data at constant prices.

	2000	2001	2002	2003
<i>Annual % change</i>				
Military output	29.5	– 1.5	24.5	18.1
Civilian output	20.3	11.8	5.6	13.2
Total output	25.3	4.5	16.0	16.1
<i>Index, 1999 = 100</i>				
Military output	129	128	159	188
Civilian output	120	135	142	161
Total output	125	131	152	176
<i>Including</i>				
Aviation	140	156	191	199
Missiles and space	104	105	126	139
Electronics	135	159	181	205
Radio	129	123	145	189
Communications	144	150	157	216
Shipbuilding	119	108	115	192
Armaments	108	120	141	162
Munitions	122	116	111	117

Sources: Data for 2000, total and civil output: Tsentr Ekonomicheskoi Kon'yuntury pri Pravitel'stve Rossiiskoi Federatsii (TsEK), the Economic Conjuncture Centre of the Government of the Russian Federation, *Rossiya 2002(3)*, p. 55; data for 2001 total and civil output: TsEK, *Rossiya 2003(3)*, p. 58; data for 2002 and 2003, total and civil output: TsEK, *Rossiya 2004(1)*, p. 65. Data for military output calculated using known civil and military shares of total arms industry output, as provided for 1999–2001 in Informatsionnoe Agenstvo (Information agency) TS VPK, 25 Jan. 2003, URL <<http://i.vpk.ru/sbornik/2001/proizvodst>>; for 2002 in Ministry of Economic Development, 30 May 2003, URL <<http://www.economy.gov.ru>>; and for 2003 in Teleinformatsionnaya Set' VPK, the tele-informational network of the military–industrial complex, 23 Jan. 2004, URL <<http://ts.vpk.ru>>.

Table 11C.3. Structure of exports (military and civilian) by arms industry agency
 Figures are percentages.

Arms industry agency	2000	2001	Jan.–June 2002
Aerospace (Rosviakosmos)	52.5	75.9	73.3
Conventional arms (RAV)	8.8	8.2	14.0
Munitions (Rosboepripasov)	3.4	2.5	3.5
Shipbuilding (Rossud)	17.8	5.7	2.7
Control systems (RASU) ^a	17.5	7.7	6.5
Total	100.0	100.0	100.0

^a The agency for control systems includes the radio, communications equipment and electronics industries.

Source: Teleinformatsionnaya Set' VPK, the tele-informational network of the military–industrial complex, 21 July 2003, URL <<http://ts.vpk.ru/corporate/otrasl>>. More recent data are not available.

Overall scale and structure

Under the five agencies, the overall scale of the arms industry in terms of facilities and employment remained relatively stable. In addition to the agencies, about 30 enterprises and R&D organizations under the Ministry of Industry, Science and Technology were also considered to belong to the arms industry, and it appears that these will be transferred to the new Federal Agency for Industry. Table 11C.1 summarizes the situation in 2001–2002. Not all of these facilities are engaged in military production, which has tended to concentrate over time. In 2003 the Ministry of Industry drew up a new register of organizations constituting the arms industry in a narrow sense. According to details published in November 2003, the register lists 1279 enterprises and R&D organizations, of which 191 are repair works currently under the MOD and 63 are facilities under the Ministry of Atomic Energy, presumably engaged in work connected with nuclear weapons. The register has yet to be approved by the government.⁹ The status of the MOD facilities is now contentious. Aleksandr Brindikov, former first deputy minister of the Ministry of Industry, Science and Technology with responsibility for arms industry matters, has confirmed that a decision has been taken to transfer them to the arms industry. This proposal is being resisted by the trade unions for employees of the armed forces, which claim that the intention is to liquidate many of the repair works. In response, Brindikov has said that he envisages a gradual change which also considers social factors.¹⁰

Output trends

All the available evidence indicates that the output of the Russian arms industry has been growing in recent years at a rapid pace. An indication of the overall trend is provided by table 11C.2. By the end of 2003, total arms industry output reached approximately 50 per cent of the 1991 level, with military output just over 40 per cent of the 1991 level and civilian output almost 60 per cent.¹¹

Several factors account for the increase. The principal factor remains the growth of arms exports, but there has also been an increase in domestic procurement and an expansion of demand for civilian goods manufactured by the industry, associated with the strong recovery of the economy since 1999. However, growth has been uneven between sectors, and annual changes are influenced heavily by export opportunities. As demonstrated in table 11C.3, the contribution of each of the five agencies to total exports shows a marked annual variation.

Thus the aviation industry has fared well, but the munitions industry has been depressed, with very little domestic procurement of ammunition and limited export possibilities. The output of the shipbuilding and radio industries is export dependent

⁹ Mezhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 6 Nov. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob06-11-03>>; and Mezhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 2 Dec. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob02-12-03>>. Before the new register was compiled, it was considered that there were 2052 military-related industrial facilities.

¹⁰ Mezhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 21 Nov. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob21-11-03>>. Brindikov has a military background, serving 26 years in the armed forces and for a period was deputy chair of the General Staff's Committee for Military–Technical Policy. *Voenno-Promyshlennyy Kur'er*, 14 Jan. 2004, URL <<http://www.vpk-news.ru>>.

¹¹ Calculated from data of table 11.C.2 and an indices of output, 1991–2000, Informatsionnoe Aгенstvo (Information agency) TS VPK, 11 July 2002, URL <<http://i.vpk.ru/vpkrus/vvedenie/2001>>.

Table 11C.4. Military production for domestic use and export, 1999–2003

Figures are percentage shares.

	1998	1999	2000	2001	2002	2003 ^a
For MOD and other forces (within SDO) ^b	39.0	36.8	41.1	33.3	37.9	25.4
Military exports ^c	61.0	63.2	58.9	66.7	62.1	74.6
Total military production	100.0	100.0	100.0	100.0	100.0	100.0

^a Source gives '2003', but given its date it may refer to Jan.–June or Jan.–Sep. only.^b State Defence Order.^c These figures exclude some exports within the framework of the SDO, in particular some deals within the framework of debt settlement agreements, and thus understate the export share to a modest extent.

Sources: Data for 1998 and 1999: Informatsionnoe Agenstvo (Information agency) TS VPK, 8 Nov. 2000, URL <<http://i.vpk.ru>>; for 2000: Informatsionnoe Agenstvo TS VPK, 10 Nov. 2001, URL <<http://i.vpk.ru/vpkus/vvedenie>>; for 2001: Informatsionnoe Agenstvo TS VPK, 11 July 2002, URL <<http://i.vpk.ru/vpkus/vvedenie/2001>>; for 2002: *Problemy Prognoz-Irovaniya*, no. 6 (2003), p. 61; and for 2003: Teleinformatsionnaya set' VPK, the tele-informational network of the military–industrial complex, 23 Jan. 2004, URL <<http://ts.vpk.ru>>.

and has varied significantly on a year-to-year basis, the latter influenced by the existence of export orders for air defence systems, one of its principal products. The output of the shipbuilding industry grew by a third in 2000, fell by almost 10 per cent in 2001, and then grew by 7 per cent in the following year.¹²

Future growth of output will depend to a considerable extent on exports. As shown in Table 11C.4, exports represent a rising share of total military production, increasing from about 60 per cent in 1998 to 75 per cent in 2003, when total arms exports were in excess of \$5 billion, a record for post-Communist Russia.¹³ However, there must be some doubt as to whether this level can be maintained. In the view of one of the leading Russian independent analysts of the arms trade, Maksim Pyadushkin of the Centre for Analysis of Strategy and Technology (CAST), the peak may now have been reached and decisive structural reforms of the arms industry must be implemented to prevent an almost inevitable decline.¹⁴

The State Defence Order

The work of arms-producing companies to meet the needs of the Ministry of Defence and other armed forces is undertaken in the framework of the State Defence Order (SDO, in Russian, Gosudarstvennyi Oboronnyi Zakaz, GOZ).¹⁵ Much secrecy surrounds the SDO, but in recent years this has been lifted to some extent, making it

¹² Teleinformatsionnaya Set' VPK (note 1), 1 July 2003, URL <<http://ts.vpk.ru>>; and the Internet site of Rossudostroenie, the shipbuilding agency, 5 Nov. 2003, URL <<http://www.rossud.ru/problemi>>.

¹³ *Voенно-Promyshleenyi Kur'er* (note 10), 16 Mar. 2004, URL <<http://www.vpk-news.ru>>.

¹⁴ The Internet site of Otkrytaya Ekonomika, the 'Open Economy' expert network, 29 Dec. 2003, URL <<http://www.opec.ru>>.

¹⁵ The 2003 SDO was a 4000-page classified document. *Izvestiya*, 19 Jan. 2003, p. 2.

possible to determine some of its principal features. A distinction has to be drawn between the SDO for the Ministry of Defence and the total order covering all the state agencies concerned with defence, security and the use of military equipment. A second distinction should be made between that part of the SDO which covers the development, production, modernization, repair and testing of weapons and other military hardware, and that part which refers to other dimensions of the military and security system. In its broad interpretation, the SDO covers such items as uniforms, food, fuel and lubricants, transport services and building work. It also includes measures for the destruction of old weapons and munitions.¹⁶ In its narrow sense, the SDO covers military-related R&D, the procurement of new armaments and military equipment (e.g., trucks), and also the repair and modernization of arms and equipment already in service with the armed forces. In drawing up this part of the SDO, guidance on its scale and structure is provided by the long-term state armaments programme. The programme currently in force is for the period 2001 to 2010. In 2003 work began on the next state armaments programme for 2006–15, involving 30 ministries and other agencies under the leadership of the MOD.¹⁷

During 2000 to 2003 the volume of funding under the SDO (in a narrow sense) substantially increased. Furthermore, whereas in the 1990s actual funding fell far below budgeted levels, with the accumulation of substantial debts owed by the MOD to the arms industry, in recent years the funding situation has substantially improved. The debts arose because the arms industry, in accordance with the SDO, delivered goods and services to the armed forces, which the MOD was unable to pay for because of underfunding. The 2001 SDO was fulfilled to almost 100 per cent and the SDO for 2002 by 110 per cent because additional funding was obtained.¹⁸ The 2003 SDO was probably over fulfilled in financial terms and by the end of 2003 it was confidently expected that all past debts would have been cleared, but this was not achieved.¹⁹ The arms industry has undoubtedly benefited from this improved funding of the SDO, but the MOD has complained frequently that the armaments programme has still not been met because prices of military hardware have been increasing much more rapidly than envisaged when the SDO was approved. When contracts are drawn up between the MOD and arms industry companies end-product prices are agreed, but costs tend to rise more rapidly than forecast, especially for bought-in systems and components purchased from other companies by the main contractor. In the words of Defence Minister Sergei Ivanov, 'The MOD is interested not in roubles, but in physical items'.²⁰ According to the armaments directorate of the MOD, in 2001 prices of military hardware produced in accordance with the SDO grew on average by 52 per

¹⁶ For 2004, the total SDO will be 341.2 billion roubles, of which c. 10 billion roubles. will be non-budget funding, probably from arms export earnings. Of this total, the MOD SDO in a narrow sense will be 140 billion roubles, AK&M Informatsionnoe Agenstvo (Information agency), 28 Nov. 2003, URL <<http://www.akm.ru/rus/news>>; and Law on Federal Budget, 23 Dec. 2003, Ministry of Finance, URL <http://www.minfin.ru/dec03_02.htm>.

¹⁷ Nauchno-Issledovatel'skii Institut Ekonomiki Aviatsionnoi Promyshlennosti, the research institute for the economics of the aviation industry, 26 Feb 2003, URL <<http://www.aviaport.ru/news>>.

¹⁸ *Nezavisimoe Voennoe Obozrenie* (note 7), 1 Feb. 2002, URL <<http://nvo.ng.ru>>; and RosBiznes Konsulting (Russian business consulting), 18 Feb. 2002, URL <<http://www.rbc.ru>>.

¹⁹ In Nov., Finance Minister Aleksei Kudrin declared the intention to settle the outstanding 7 billion roubles debt by the beginning of 2004. *Mezhregional'nyi Fond Informatsionnykh Tekhnologii* (note 5), 21 Nov. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob21-11-03>>. However, in early 2004 the MOD still owed 2 billion roubles for the 2002 GOZ and 3 billion for 2003, with an unspecified debt in relation to the 2001 GOZ. *Voенно-Promyshlennyi Kur'er* (note 10), 24 Feb. 2004, URL <<http://www/vpk-new.ru>>.

²⁰ *Vremiya Novostei*, 16 Jan. 2004, p. 3.

cent, compared with an index of only 15 per cent used when drawing up the SDO for the year. For 2002, the equivalent figures were 25 per cent and 12 per cent.²¹

The 2004 SDO has some new features. In the past contracts within the SDO were not usually concluded until May of the relevant year and then often in a hurry with little concern about price. In 2004 the SDO will, in effect, be operative from an earlier time in the year, with a strict four-month limit on contract conclusion. For large-scale projects, it will be possible to conclude contracts with guaranteed funding for a three-year period, with prices fixed in the first year, and more work in the framework of the SDO will be put out to tender. The 2004 SDO provides for some procurement of new and modernized weapons, including 6 Topol-M strategic missiles, 6 military space systems, 1 Tu-160 strategic bomber, 15 T-90S tanks, 20 modernized SU-27SKM fighters and some new Iskander divisional missile systems. The SDO also provides for work to modernize Tu-160, Tu-95 and Tu-22M long-range bombers and the Su-24 and Su-25 frontal bombers and to continue building a new strategic nuclear submarine at Severodvinsk, for which new Bulava ballistic missiles are being developed.²² Presumably, the 2004 SDO also includes funding for the principal project of the aviation industry: the development of a new fifth-generation combat aircraft. Sukhoi is the lead organization but it will work with MiG, although there is clearly a possibility that they will merge to form a single design bureau and corporation.

The problem of quality

A mounting concern of the MOD and some foreign buyers of Russian arms is a deterioration in the quality of goods produced by the arms industry. Quite serious problems appeared with the missile systems of frigates built for India; the building of destroyers for China was complicated by allegations that the St Petersburg Severnaya Verf shipyard was using old components and equipment from written-off vessels; a Czech customer refused to accept an Mi-35 helicopter on the same grounds; and there have been claims that engines of Su-30MKIs supplied to India have many faults, giving them a very brief service life. However, these charges were later denied by the Indian Ministry of Defence.²³ The quality problem has been acknowledged by the Ministry of Industry, Science and Technology. The leader of its department of defence-industrial policy, Viktor Sergeev, revealed that the ministry had concluded that the quality of military hardware had been substantially reduced in recent years, leading to increased customer complaints, including from foreign clients. In his view, at the root of the problem are organizational and technical issues of a systemic character, above all the poor state of the human and physical capital of the industry after more than a decade of contraction and under-investment. The average age of personnel has risen inexorably with very little new recruitment. The level of professional

²¹ *Russkii Kur'er*, 12 Jan. 2004, p. 1 As a result, the MOD claims to have lost 50–55 billion roubles since 2001, with an equivalent non-fulfilment of the state armaments programme.

²² *Kommersant-Daily*, URL <<http://www.kommersant.ru>>, 26 Dec. 2003; *Nezavisimoe Voennoe Obozrenie* (note 7), 26 Dec. 2003, URL <<http://nvo.ng.ru/forces/2003-12-26>>; Natsional'naya Informatcionnaya Sluzhba StranaRu, the national information service StranaRu, 25 Dec. 2003, URL <<http://www.strana.ru>>; and *Moscow Times*, 15 Jan. 2004, URL <<http://www.themoscowtimes.com>>.

²³ Nauchno-Issledovatel'skii Institut Ekonomiki Aviatcionnoi Promyshlennosti (note 17), 16 Dec. 2003, URL <<http://www.aviaport.ru/news/AviaContracts>>. The engines are built by the Ufa engine building production association (UMPO).

skill of the personnel is considered to have fallen, including the skills of those responsible for managing quality.²⁴

Since the end of the 1990s there has been little renewal of production equipment. In 2001 less than 5 per cent of the machinery and equipment of the arms industry was less than five years old, and 75 per cent was older than 10 years. In the USSR's arms industry in 1990, the equivalent figures were 35 and 37 per cent, with only 16 per cent older than 20 years.²⁵ The volume of investment in the arms industry in 2001 was a mere 10.5 per cent of the level of 1992, but this was at least a modest improvement on 1998, when it was 6.9 per cent.²⁶ According to Sergeev, in recent years the annual rate of renewal of equipment has been less than 1 per cent, instead of the required minimum of 10 per cent. The standards employed by the Russian arms industry date in the main from Soviet times and do not correspond to current international practice. Another problem facing the industry is that many of the items now being exported are not in use in the Russian Armed Forces and have not undergone rigorous testing in day-to-day use. Given that no serious procurement of new armaments is likely to occur for a number of years, this is a problem that may well become more serious and could undermine Russia's export prospects. In August 2003 the Ministry of Industry adopted a programme for raising product quality in the arms industry, but it is recognized that there are no quick solutions. Measures to be adopted include a fundamental renewal of standards over the next seven years, bringing them into line with international practice, and the adoption of continuous acquisition and life cycle support (CALs) systems and other modern quality management systems. Some pilot projects for these systems are reportedly under way.²⁷ In the programme, serious concern is expressed that, without decisive action to modernize standards and quality management, by 2007 Russia could find markets for arms and high-technology, dual-use and civil goods seriously limited.

With short production runs and very low capacity utilization rates—on average 24 per cent in 2001, including a mere 6 per cent in the munitions industry, but 40 per cent in aerospace—it is not surprising that costs are high and that many firms experience financial problems.²⁸ In 2003 almost half of all arms-producing companies were loss making.²⁹

²⁴ Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 2 Dec. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob02-12-03>>.

²⁵ Informatsionnoe Aгенstvo TS VPK, 11 July 2002, URL <<http://i.vpk.ru/vpkrus/vvedenie/2001>>; Katayev, V., 'MIC: the view from inside', ed. V. E. Genin, *The Anatomy of Russian Defence Conversion* (Vega Press: Walnut Creek, Calif., 2001), p. 60. At enterprises of the shipbuilding agency at the beginning of 2002, 68.5% of production equipment was older than 20 years, in the munitions industry 65%, Rosaviakosmos 58%, the armaments agency 47% and the control systems agency 35%. Teleinformatsionnaya Set' VPK, 1 Dec. 2003, URL <<http://ts.vpk.ru/programs>>.

²⁶ Informatsionnoe Aгенstvo TS VPK (note 11), 4 Sep. 2002, URL <<http://i.vpk.ru/fin/itogi/2001>>; and Informatsionnoe Aгенstvo TS VPK (note 11), 15 Nov. 2001, URL <<http://i.vpk.ru/fin>>.

²⁷ Teleinformatsionnaya Set' VPK (note 1), 1 Dec. 2003, URL <<http://ts.vpk.ru/programs>>; and Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 2 Dec. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob02-12-03>>.

²⁸ Informatsionnoe Aгенstvo TS VPK (note 11), 25 Jan. 2003, URL <<http://i.vpk.ru/sbornik/2001/proizvodst>>; *Krasnaya Zvezda*, 5 Sep. 2001, p. 3; and RosBiznesKonsulting, 6 Mar. 2002, URL <<http://www.rbc.ru>>.

²⁹ Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 2 Dec. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob02-12-03>>.

Hesitant restructuring

The restructuring of the arms industry has been a policy goal for many years, but so far there has been only modest practical achievement. The latest restructuring programme is one promoted by the former Industrial Minister and Deputy Prime Minister, Ilya Klebanov: the federal programme for the reform and development of the military–industrial complex, 2002–2006, adopted by the government in October 2001. From the beginning this programme encountered problems, and it is probably not surprising that its implementation has been unsatisfactory. The programme called for the creation of a set of so-called integrated structures designed to concentrate efforts on the development and manufacture of the principal weapons incorporated in the state armaments programme to 2010. A major consideration was securing an effective use of production facilities, freeing the arms industry of excess capacities. Enterprises not required for arms production would be free to leave the arms-producing sector and find their own future as civilian companies. The original goal was the formation, by 2006, of 75 corporations, incorporating more than 520 enterprises.³⁰ It was envisaged that in the period 2006–10 there would be a further round of consolidation with the goal of concentrating most armaments development and production in a few large-scale corporations. The integrated structures were to be formed by creating holding companies in the form of joint stock firms, initially with 100 per cent state ownership.

The implementation of the programme has been much slower than envisaged. There is a lack of appropriate legislation. In particular, the legal status of a holding company remains unclear. There have been disputes as to whether the corporations should be led by newly created management companies or by a strong, existing lead company. Regional authorities have sought to protect local interests, fearing a loss of control over companies on their territory. Their concern is understandable because the majority of the planned corporate structures were to have their headquarters in the capital or in the Moscow region.³¹

In November 2003 the government reviewed the implementation of the programme. Concern was expressed that limited progress had been made, with only four large vertically integrated structures having been created in accordance with the programme. In the words of then Prime Minister Mikhail Kasyanov, ‘subjective human factors’ had played a negative role. The Ministry of Industry, Science and Technology was severely criticized for the lack of progress and was charged with revising the programme and the schedule of implementation. Deputy Prime Minister Aleshin was given responsibility for its oversight.³² However, while only four new structures have been formed, many more are being created. There are also a number of new corporate structures not originally included in the restructuring programme, some formed on the initiative of companies themselves rather than by state action. A significant role is

³⁰ Informatsionnoe Agenstvo TS VPK (note 11), 18 June 2002, URL <<http://i.vpk.ru/rst/integr/fpgplan>>. The total includes 19 enterprises in the aviation industry, 11 in the missile–space industry, 9 in the armaments agency, 6 in the munitions agency, 13 in the shipbuilding agency and 17 in the control systems agency.

³¹ *Kommersant-Daily*, 6 June 2002, p. 20.

³² *Praim-Tass Agenstvo Ekonomicheskoi Informatsii*, the Prime-Tass agency for economic information, 13 Nov. 2003, URL <<http://www.prime-tass.ru>>; and *Rossiiskaya Gazeta*, 14 Nov. 2003, URL <<http://www.rg.ru/2003/11/14oboronka.html>>. The latter identifies the 4 structures as aviation holding company Sukhoi, concern Almaz-Antei, corporation Takticheskoe Raketnoe Vooruzhenie (tactical missile systems for aircraft), and concern Granit-Elektron (shipbuilding industry).

being played by private firms. It remains to be seen whether the restructuring programme will be rethought following the demise of the separate agencies and their replacement by a single Federal Agency for Industry, led by Aleshin, in March 2004.

One of the most significant of the new private structures is the NPK (Nauchno-Proizvodstvennaya Korporatsiya) Irkut, led by the Irkutsk aviation works, one of the most successful export companies in the Russian arms industry. Irkut, which builds modernized export versions of the Su-30 and Su-27 fighters and the Be-200 amphibious search and rescue aircraft, has controlling stakes in the Taganrog Beriev aviation company and the Russkaya Avionika design bureau and will soon take a 75 per cent stake in the Yakovlev design bureau. In March 2004 Irkut made an initial public offering to raise capital (\$127 million) to acquire Yakovlev to further strengthen the company.³³ The Yakovlev bureau is responsible for the design of the Yak-130, which had been adopted by the air force as its future basic trainer. It will be built by the Nizhnii Novgorod Sokol works, which is controlled by the private Kaskol company, one of the most enterprising firms in the Russian aviation industry, and which is developing cooperation with the European Aeronautic Defence and Space Company (EADS).³⁴ There is a striking contrast between the relative success of privately initiated restructuring and that being attempted from above in the framework of the state programme.

Links with the Commonwealth of Independent States

As is discussed below, the Russian arms industry maintains extensive links with its counterparts in Belarus and Ukraine. In recent years the reach of the industry has extended and deepened in relation to other Commonwealth of Independent States (CIS) countries, notably, Armenia and Kyrgyzstan. In the case of Armenia, in a debt settlement arrangement, Russia is now the owner of several enterprises in the military electronics industry in a deal concluded in 2002.³⁵ In 2000 a similar deal was proposed in Kyrgyzstan, where some of the factories retain close links with Russia.³⁶ The deal was not concluded, but an agreement was reached to create joint Kyrgyz–Russian companies to exploit export possibilities. The Bishkek Dastan works, which produces torpedoes, is of particular importance to Russia.³⁷ There have also been cases of Russian arms-producing companies buying enterprises outright in other CIS countries. For example, in 2002 the Moscow Salyut aero-engine company acquired Topaz, one of the best known arms-producing plants in Moldova. It also has interests in a group of enterprises in Moldova and plans to form a holding company there.³⁸ In 2003 the Armenian company Orbita, which produces night-vision equipment, was taken over by a Nizhnii Novgorod aviation industry firm part-owned by the Russian

³³ *Moscow Times*, 14 May 2004, URL <<http://www.themoscowtimes.ru>>. Irkut plans a London Stock Exchange listing in 2005 and is likely to be the first Russian defence company to be so listed. EADS has expressed an interest in acquiring a minority stake. *Vedomosti*, 26 Mar. 2004, URL <<http://www.vedomosti.ru>>.

³⁴ *Vedomosti*, 21 Aug. 2003, URL <<http://www.vedomosti.ru>>.

³⁵ RosBiznesKonsulting, 17 July 2002, URL <<http://www.rbc.ru>>.

³⁶ *Kommersant*, 25 Oct. 2000, p. 11.

³⁷ Informatsionnoe Aгенstvo TS VPK (note 11), 30 Oct. 2001, URL <<http://i.vpk.ru>>; *Nezavisimoe Voennoe Obozrenie* (note 7), 31 Oct. 2003, URL <<http://nvo.ng.ru>>; and Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 24 Oct. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob24-10-03>>.

³⁸ *Moldova Promyshlennaya*, 1 Sep. 2003, URL <<http://md.all-biz.info/news>>.

Aircraft Corporation (Rossiiskaya Samolostroitel'naya Korporatsiya, RSK) MiG.³⁹ Through acquisition and joint ventures a partial restoration of the former Soviet arms industry is now under way. Kazakhstan has also declared an interest in integrating its 22 arms-producing enterprises more closely with the Russian arms industry.⁴⁰ This process would appear to have high-level backing. Speaking at a meeting of CIS defence leaders in late 2003, President Putin declared that, 'We see significant perspectives in the creation of a single arms-producing complex'.⁴¹

However, there are counter developments. There are long-standing and close links between the Russian aviation industry and Uzbekistan, where the Tashkent Chkalov works builds Ilyushin military transport aircraft, in particular the Il-76, with 90 per cent of the components supplied by Russia. Russia would like to incorporate the Tashkent works in the Ilyushin corporation now being formed, but the Uzbek authorities refuse to allow Russia an ownership stake. The Russian Air Force wishes to acquire the latest version of the Il-76MF as an alternative to the new An-70 heavy-lift transport aircraft but has decided that it must now be built in Russia at the Voronezh works, not in Tashkent.⁴²

III. The arms industry of Ukraine

To a greater extent than for Russia, the Ukrainian arms industry is dependent on export orders, in particular, deliveries of systems and components to Russia. In recent years, however, most large export deals have involved the sale of surplus Soviet-era equipment. To date, the largest delivery of new equipment has been the sale to Pakistan, in 1997–99, of 320 T-80UD battle tanks built by the Kharkiv Malyshev company. Since 1999 the few tanks exported have been old, Russian-built T-72s. The most significant new equipment sales have been a by-product of Russian export success, namely, the supply of air-to-air missiles (mainly R-27s and X-55s) for the combat aircraft sold to China, India and other countries. These air-to-air missiles, built by the Kyiv Artem holding company, are of a type not produced by the Russian arms industry.

Most Ukrainian military-related enterprises and R&D establishments are overseen by the Ministry of Industrial Policy, but a number of the repair factories of the Ministry of Defence play an important role in upgrading old equipment. According to Volodymyr Horbulin, former head of the Ukrainian State Commission for the Defence Industrial Complex, by 2001 the arms industry had been reduced to one-fifth of its former facilities and one-seventh of its former workforce.⁴³ Many of these remaining facilities retain strong links with Russia and would now be in a much worse state if it were not for Russian orders. In this respect the aviation industry is

³⁹ Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 21 Mar. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob21-03-03>>.

⁴⁰ Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 18 July 2003, URL <<http://www.mfit.ru/defensive/obzor/ob18-07-03>>; and Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 24 Oct. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob24-10-03>>. In early 2003 the Kazakh defence plants concentrated in a new company Kazakhstan inzhiniring.

⁴¹ Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 11 Dec. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob11-12-03>>.

⁴² Mezhhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 9 Jan. 2004, URL <<http://www.mfit.ru/defensive/obzor/ob09-01-04>>; *Nezavisimoe Voennoe Obozrenie* (note 7), 17 Oct. 2003, URL <<http://nvo.ng.ru>>; and Nauchno-Issledovatel'skii Institut Ekonomiki Aviatsionnoi Promyshlennosti (note 17), 28 Nov. 2003, URL <<http://www.aviaport.ru/news>>.

⁴³ *Ekspert Vooruzheniy*, no. 1 (2002), p. 11.

indicative. It has been claimed that 70 per cent of the components and 95 per cent of the materials used by the Ukrainian aviation industry are supplied by Russia.⁴⁴ The Antonov organization in Kyiv was the Soviet Union's principal design centre for heavy-lift and other transport aircraft. The Prohres design bureau in Zaporizhzhia and its associated Motor Sich factory was a major supplier of aero-engines, with a near monopoly on the supply of engines and transmission units for helicopters. These engines still power a range of Russian-built aircraft, including the Be-200 amphibious aeroplane, the new Yak-130 trainer, the Tu-334 passenger aeroplane and Mil helicopters, guaranteeing the Ukrainian facilities a stable market.⁴⁵ In the aircraft industry, the central issue is Russia's willingness to maintain these cooperative relations. That they are under strain is illustrated by the case of the An-70 heavy-lift transport aircraft now under development. This joint Ukrainian–Russian project has been undertaken in accordance with intergovernmental agreements of 1993 and 1999. It was envisaged that the Russian Ministry of Defence would buy 164 aircraft and that the Ukrainian Ministry of Defence would purchase 65 aircraft, with development funding split 72 : 28 reflecting Russia's larger role. This project has encountered serious difficulties, and in recent years the Russian Air Force has lost interest. Its commander-in-chief, Vladimir Mikhailov, has become an implacable opponent of the An-70 project, favouring instead an upgraded version of the Il-76 transport aircraft, which is considered to offer a better specification at a lower price. This dissent has led to Russian non-payment, creating problems for the Antonov organization, which has had to invest some \$130 million of its own money. Much to the alarm of the Russian Air Force, which fears that its SDO funding will be diverted, the Russian Government has undertaken to settle the outstanding debt and retain its commitment to the project, apparently for political reasons.⁴⁶ This conflict threatens to sour arms industry cooperation between the two countries and may result in the Russian MOD's seeking to reduce import dependence on Ukraine.

In other fields, the cooperation is weaker as demonstrated by Ukrainian efforts to enhance domestic capabilities and weaken dependence on Russia. In particular, this applies to equipment for the ground forces, a priority for Ukrainian national defence. In supplying tanks to Pakistan, Ukraine developed its own production of tank gun barrels and other items previously supplied by Russia. In the munitions industry, the Luhans'k machine tool factory, a major producer of cartridges, is now supplying them to North Atlantic Treaty Organization (NATO) standards.⁴⁷ In the Soviet shipbuilding industry Ukraine possessed unique capacities for building very large surface ships, and the Mikolayiv Mashproekt organization had a near monopoly on the design and manufacture of gas turbines for large-capacity ships. It still retains links with Russia.⁴⁸

While Ukrainian arms exports reached some \$450 million in 2001, Russian commentators maintain that they have declined in the past two years, and it has been argued that this downward trend explains a surprise decision in late 2003 to reorgan-

⁴⁴ *Ekspert Vooruzheniy* (note 43), Jan./Feb. 2001, p. 11.

⁴⁵ More than 60% of Motor Sich engines are exported to Russia and this share has increased over recent years. *Aviatsionnaya Tekhnika*, 28 May 2003, URL <<http://www.aerotechnics.ru/news/>>.

⁴⁶ *Nezavisimoe Voennoe Obozrenie* (note 7), 15 Aug. 2003, URL <<http://nvo/ng/ru/armament/2003-08-15/>>; *Moscow Times*, 11 Aug. 2003, URL <<http://www.themoscowtimes.com/>>; and *Polityburo*, 24 Nov. 2003, p. 18. The Russian SDO for 2004 includes funding for both the An-70 and the Il-76MF, the latter being the preference of the air force. *Voенno-Promyshlenniy Kur'er* (note 10), 31 Dec. 2003, URL <<http://www.vpk-news.ru/>>.

⁴⁷ *Nezavisimaya Gazeta*, 23 June 2003.

⁴⁸ *Polityburo*, 24 Nov. 2003, p. 18.

ize the state arms export company Ukrspetsekспорт, liquidating two of its five subsidiaries, Spetstekhnoekспорт and Promoboroneskпорт.⁴⁹ Reduced export earnings will complicate the task of consolidating the arms industry. In early 2002 the government adopted a programme for its restructuring which envisaged a process of concentration to form a small number of integrated companies. However, the principal source of funding to implement the programme was to be export earnings.⁵⁰

IV. The arms industry of Belarus

For most of the 1990s Belarus was not considered to have a significant arms industry, but from about 1998 it emerged as a quite substantial arms exporter. In 1999, according to its return to the United Nations Register of Conventional Arms (UNROCA),⁵¹ exports included 154 tanks, 62 armoured combat vehicles (ACVs), 48 large-calibre artillery systems and 30 combat aircraft. The customers were Algeria, Angola and Morocco. However, subsequent reports have shown a steady decline in the number of systems exported. In 2002 only 15 tanks, 12 ACVs, 24 artillery systems, 2 combat aircraft and 2 attack helicopters were exported, and the customers were Algeria, Côte d'Ivoire, Iran and Sudan.⁵² According to SIPRI, the volume of Belarusian exports of major conventional weapons in 2003 was only one-eighth of the 1999 level.⁵³ In reporting to the UN, Belarus has explicitly acknowledged that all the recorded exports were of Russian-produced weapons and not items of domestic manufacture. Belarus inherited large surplus stocks of Soviet-built armaments from the USSR. It is from this stock that exports have been secured, in some cases with domestically realized upgrading. While Belarus possesses approximately 70 enterprises and R&D organizations engaged in military-related activities, these are devoted almost exclusively to systems and components oriented heavily to the requirements of the Russian arms industry, rather than to end-product weapons.⁵⁴

The most significant Belarusian military-related facilities are focused in three principal areas: (a) chassis for missile transporters (Minsk motor-car factory, MAZ; the Minsk factory of wheeled tractors, MZKT; and the Minsk Tractor Factory, MTZ); (b) optical equipment, in particular for tanks and other armoured vehicles and helicopters (BelOMO, Peleng and the Research Institute of Applied Physics); and (c) electronic equipment, in particular field control systems for ground forces (Agat research-production association and NII EVM, a computer research institute), and electronic components (Integral). In addition, some capability has been developed in the field of armoured vehicles (a Ministry of Defence facility, the Borisovo 140th repair factory and a new private company, Minator-Servis). The upgrade of Su-27 and

⁴⁹ *Nezavisimoe Voennoe Obozrenie* (note 7), 16 Jan. 2003, URL <<http://nvo.ng.ru/armament>>. According to estimates of the independent Ukrainian Centre for Research into the Army, Conversion and Disarmament, total exports of arms and dual-use goods amounted to c. \$600 million in 2000, \$575 million in 2001, c. \$450 million in 2002 and c. \$540 million in 2003. *Voenno-Promyshlennyi Kur'er* (note 10), 23 Mar. 2004, URL <<http://www.vpk-news.ru>>.

⁵⁰ *Zerkalo Nedeli*, 1 Mar. and 31 May 2002, URL <<http://www.zerkalo-nedeli.com>>.

⁵¹ Wezeman, S. T., *The Future of the United Nations Register of Conventional Arms*, SIPRI Policy Paper no. 4 (SIPRI: Stockholm, Aug. 2003), available at URL <<http://editors.sipri.se/recpubs.html>>.

⁵² United Nations Register of Conventional Arms, URL <http://disarmament.un.org:8080/UN_REGISTER.nsf>.

⁵³ See chapter 12 in this volume.

⁵⁴ According to 1 recent Russian source, Belarus now has 66 arms industry facilities. *Nezavisimoe Voennoe Obozrenie* (note 7), 26 Dec. 2003, URL <<http://nvo.ng.ru/armament/2003-12-26>>.

MiG-29 aircraft is carried out at the 558th aircraft repair works of the Ministry of Defence, at Baranovichi, with Russian technical assistance.

Many of these facilities are integrated into the Russian arms industry, sometimes organizationally. This applies above all to enterprises associated with the production of air defence equipment. From 2000, the Minsk wheeled tractor plant and the Ministry of Defence's 2566th factory for the repair of radio-electronic armaments have been members of the Moscow-based inter-state financial industrial group Defence Systems (*Oboronitel'nye sistemy*). It exports the S-300PMU air defence missile system and an upgraded version of the S-125 Pechora anti-aircraft system (NATO SA-3, Goa), which is in service in more than 30 countries. However, this does not involve any ownership stake. Some Belarusian industrial facilities are vital to the Russian defence effort. In particular, the Minsk wheeled tractor plant supplies the chassis for the mobile version of the Topol'-M strategic missile system.

The majority of Belarusian enterprises that conduct military-related work are under full or partial state ownership and subordinated to the Ministry of Industry. In late 2003 President Aleksandr Lukashenko proposed that the principal military facilities form a specialized agency. This resulted in the creation in December 2003 of the State Military-Industrial Committee (*Goskomvoenprom*).⁵⁵ Analysts believe that Lukashenko's proposal is related to the perceived export potential of the sector, with Russian claims that a large proportion of Belarusian arms export earnings enter an extra-budgetary fund controlled by the president.⁵⁶ However, future export earnings will depend to a considerable extent on developments in Russia, in particular the degree to which the markets expand for weapons that incorporate Belarusian components, either for domestic procurement or export. According to an agreement reached in late 2003, Belarus and Russia will undertake mutual deliveries of arms at the domestic prices of the delivering country from the beginning of 2004. It was also decided that a number of joint enterprises working in the interests of the arms industries of both countries would be created on Belarusian territory in 2004.⁵⁷

V. Future prospects

The future prospects of the Russian arms industry remain uncertain. Domestic procurement is likely to increase gradually during the next few years, but preference will probably be given to upgraded versions of existing weapons rather than new systems. At the same time exports may begin to decline. Much will depend on the pace of industry restructuring, and the Russian authorities may need to accept that a larger role will be played by private companies, perhaps with international links, in supplying both external customers and the armed forces. The new leader of the arms industry, former Deputy Prime Minister Boris Aleshin, has made it clear that he does not object to non-state companies fulfilling the State Defence Order.⁵⁸ In this respect, the Irkut concern could provide a model for the future.

The case of Ukraine is different in so far as its leadership is anxious to strengthen its developing relationship with the EU and NATO. This intensifying orientation

⁵⁵ *Mezhregional'nyi Fond Informatsionnykh Tekhnologii* (note 5), 9 Jan. 2004, URL <<http://www.mfit.ru/defensive/obzor/ob09-01-04>>.

⁵⁶ *Nezavisimoe Voennoe Obozrenie* (note 7), 19 Dec. 2003, URL <<http://nvo.ng.ru/cis/2003-12-19>>.

⁵⁷ *Mezhregional'nyi Fond Informatsionnykh Tekhnologii* (note 5), 19 Dec. 2003, URL <<http://www.mfit.ru/defensive/obzor/ob19-12-03>>.

⁵⁸ *RosBiznesKonsulting*, 4 Aug. 2003, URL <<http://www.rbc.ru>>.

towards Europe is likely to strengthen further if a pro-reform candidate wins the October 2004 presidential election. At the end of 2003 the United States agreed, in principle, to the possibility of supplying Ukraine with US-produced weapons. It would not be surprising if Ukraine were to attempt to gradually weaken its dependence on Russia and increase its links with West and Central European arms-producing companies. From this perspective, the fate of the Ukrainian aviation industry would appear to be problematic unless stronger links can be forged with European and US manufacturers.

Arms industry plants in Belarus should be able to supply some upgraded Soviet-era weapons to the domestic armed forces, but in the view of General-Major Petr Rogozhevskii, chief of armaments of the Armed Forces of Belarus, in the next five years there will be only modest procurement of new systems.⁵⁹ Possibilities of exporting old, surplus armed forces equipment are probably reaching exhaustion, although much will depend on the willingness of Belarus to export to countries which Russia and other major exporters decline to trade with for political reasons. However, Belarus should be able to occupy some niche export markets, in particular, for certain types of armoured vehicles, optical equipment and control systems. Belarus is unlikely to remain a front rank actor on the arms export scene. Future military business will be heavily dependent on its symbiotic relationship with Russia.

⁵⁹ Mezhregional'nyi Fond Informatsionnykh Tekhnologii (note 5), 5 Apr. 2002, URL <<http://www.mfit.ru/defensive/obzor/ob05-04-02>>.