



ACPR Policy Paper No. 143

## ARMENIAN “TRACES” IN THE PROLIFERATION OF RUSSIAN WEAPONS IN IRAN

*Ze'ev Wolfson*<sup>1</sup>

At the beginning of May 2002, the United States Department of State announced sanctions against two Armenian, two Moldovan, and eight Chinese firms, for having supplied Iran with equipment that could be used in the production and development of weapons of mass destruction. This announcement throws light on just one aspect of several odd relations between Teheran and its only Christian neighbor, Armenia. The relations between these two countries have been developing in the background of the more complicated setting of the great power politics of Russia and the US in the Middle East and the Caucasus, and until now have remained on the periphery of the attention of Western experts.<sup>1</sup>

### Chapter 1

#### The Armenian Military-Industrial Complex, 1980-1990

It would be no exaggeration to say that during the Soviet period, there were very few persons, even among the specialists, who were able to know that Armenia, a small country in both territory (30,000 square kilometers) and population (3.5 million persons), was one of the most

---

<sup>1</sup> **Ze'ev Wolfson** was born in 1944 in the USSR. He received a Ph.D. degree in Environmental Policy from Moscow State University in 1978. His work, *The Destruction of Nature in the Soviet Union*, (under the pseudonym, Boris Komarov) was published in 1979 in the West in eight editions in seven languages. The book was awarded the Gambrinus European Award (Italy) for best book on ecology in 1983. After the Chernobyl disaster, **Dr. Wolfson** focused his interests on the consequences of the development of nuclear technology, and chemical and biological weapons in the former Soviet Union and in Russia. The author has published numerous articles on these subjects.

In September 2000, **Dr. Wolfson's** work, "Syrian-FSU Military Cooperation", was published in *Nativ*. Since 1987, he has been affiliated with the Mayrock Center for Russian, Eurasian and Eastern European Research of the Hebrew University as a researcher and editor of the *Environmental Policy Review*. **ZW** has also been the editor of the *CIS Environmental and Disarmament Yearbook* since 1998.

militarized parts of the Soviet empire. Dozens of factories and R&D centers operated there, developing complex electronics, and radio devices for military aviation, rockets, and space technology, and control and safety systems for aircrafts and short- and long-range missiles. Armenia as a rule manufactured spare parts and components of devices and instruments. It produced almost no finished products. The devices and systems are completed, assembled, and mounted on aircrafts and missiles at plants located, for the most part, on Russian territory.<sup>2</sup>

There was no chance for an Armenian military industrial complex (MIC) to come into existence as long as the USSR existed, since the Armenian factories were something like a link and a bureau for development of small workshops in the framework of gigantic concerns, located mostly at the center, or in the Volga area, in the Urals, or in the Ukraine.

In the Soviet period, the USSR only State Planning Committee (Gosplan) made it possible to analyze the development of military production by types of weapons and by regions of the country. However, this was done mainly for the information of the “higher-ups”, and it was done infrequently, in order not to irritate those very “higher-ups” with figures about what “brotherly cooperation” in the USSR really amounted to, or figures indicating the percentages of decline in the efficiency of production. For this reason, Armenians came to understand just what valuable productive and scientific assets it possessed only after the dissolution of the centralized socialist economy. But they came to this understanding too late. For the Armenian economy began to decline rapidly, even earlier than the economies in other parts of the USSR, that is, before 1991, when state financing of the whole MIC was stopped. In Armenia, the breakdown began right after the disastrous December 1988 Spitak earthquake and just as the armed conflict with Azerbaijan over Karabakh began in 1989.

The warfare led Azerbaijan, followed by Turkey, to initiate an energy blockade of Armenia, cutting off its imports of oil and gas.

Also in 1989, the atomic energy plant that provided about 25-30% of Armenia's electric energy was closed, under pressure from the ecologists who expressed concern, not without foundation, about the high risk of a radiation catastrophe if an earthquake were to happen in the Yerevan region. The only remaining source of electricity was an antiquated hydroelectric plant (or, to be more precise, a series of small electric plants) that operated on a river flowing from the Lake Sevan.

The energy blockade and shortages led to the closing of almost two-thirds of all factories. By 1993, the gross output of Armenia had been reduced by 60% in comparison to 1988. There was not even one enterprise that was able to function normally. Until the present time, that is, 2002, no sector of the economy – from industry to municipal services has come out of the deep crisis.

Therefore, an Armenian MIC can be spoken about only as a potentiality. However, the figures that can be cited in this regard are quite impressive.

The most militarized republics of the USSR were the Ukraine and the RSFSR (Russia). In the 1980s, 1.2% and 1.0% respectively of the total work force of each republic worked in enterprises of the MIC. Belarus followed these two republics, with 0.89%. Coming in fourth in terms of the number of workers in MIC enterprises was Armenia, with 0.87% of its workers involved. That is, the level of involvement of its population was almost of the same order as in the most militarized regions.

Also, 40% of all industries in Armenia had some connection to the Soviet defense complex. Looking just at the largest enterprises, numbering 440 – 55 of them were military plants. Five

of the largest industrial enterprises in Armenia (scientific manufacturing amalgamations), those that are called the key enterprises of the Armenian economy (Sirius, Signal, Astrum, Kometa, and Bazalt – abstract names typical of classified productive units), were centers for the development and production of apparatuses, devices, and instruments for aviation and rocket technology. Thousands of employees worked in each of them, including hundreds of engineers and scientists.<sup>3</sup>

Outwardly, the militarization of industry in Yerevan and other Armenian towns was not so noticeable. One did not find huge factories with smokestacks and clouds of smoke and vapors. Top secret “mechanical engineering products” were not loaded with a din on closed platforms at the railroad stations at night. The flow of raw materials into Armenia and finished products out of it did not attract any special attention, either by their quantity or their external appearance.

Armenia’s uniqueness consisted in its exceptional concentration of plants specializing in military radio electronics and electrical engineering. Among the 55 plants mentioned above, only one engaged in machine construction and two were chemical plants. From the very beginning of the 1990s, the government of sovereign Armenia followed the path of privatization of industry. At the same time, it tried to renew ties with Russian military manufacturers. Factories were established in Armenia on the basis of certain well-defined technologies, focusing mainly on Soviet types of aviation and rocket technology. Also, as noted above, the items produced were mainly components, not final products. It was perfectly clear that if ties were not reestablished with the former main enterprises, the Armenian factories would have no chance of advancing.<sup>4</sup>

Some foreign investors had shown interest in purchasing components and half-finished equipment and know-how for Soviet-model aviation and rocket technology, naturally all of them were former Soviet clients: Arab states and Iran.

## **Chapter 2**

### **Military Cooperation between Armenia and Russia**

Military cooperation with Moscow was a key consideration in the foreign policy of the Republic of Armenia from the very beginning of its existence. Direct guarantees given by Russia for the security of Armenia are considered to be one of the main factors in its survival as an independent republic. Armenia cooperates with Russia more actively than any other state in the CIS in the framework of the five fundamental CIS collective security treaties.

At the moment when the USSR collapsed, the 7<sup>th</sup> Guard Army, numbering approximately 23,000 soldiers, was stationed in Armenia. Toward the middle of 1992, two of the Army’s three divisions were transferred to Armenian control. The Army’s materiel was distributed according to the Tashkent Collective Security Treaty of 1992. The distribution was actually completed by the end of the year. Armenia thus received about 360 tanks, over 100 BMP infantry fighting vehicles of other types, 130 artillery pieces and mortars, and dozens of anti-aircraft systems of the Osa, Strela, Shilka, and Igla types.

The Russian side was left with several military bases in the cities of Giumri and Yerevan. All in all, there are more than one hundred military sites in Armenia belonging to the Russian army.<sup>5</sup>

The Russian anti-aircraft defense division is supplied with S-300 type anti-aircraft rocket complexes, which protect against the incursions of enemy aircraft and ballistic rockets in a

radius of 90 kilometers. The anti-aircraft defense system protects, first of all, such objects as the capital, Yerevan, the nuclear power plant, airports, and so on. The Russian forces in Armenia also have at their disposal about 15 of the most modern model MIG-29s.

Russia's deliveries of weapons to Armenia in 1993-1996 should be noted, in particular, since, by both their scale (assessed as being worth a total of one billion dollars) and their political significance, there has been nothing like them in the recent history of Russia. These arms transfers were intended to strengthen Armenia's position in Karabakh against Azerbaijan.

As is well known, Armenia was almost cut off from the outside world in 1993-1994 because of the blockade imposed by Azerbaijan and Turkey. Therefore, for the urgent delivery of military technology and munitions to Yerevan, the Russian military, at the initiative of the Minister of Defense at the time, Pavel Grachev, organized 139 flights of AN-124 (named Ruslan) and Il-76 heavy military transport planes. The cost of these flights alone amounted to tens of millions of dollars.

The following were among the most important weapons received by Armenia: 27 Krug anti-aircraft rocket complexes; dozens of rockets for other complexes located in Armenia and Karabakh, including rockets for Scud systems; 200 Igla shoulder-held portable rockets; over 80 T-72 tanks; 50 BMP-2 infantry fighting vehicles and armored vehicles of other models.

It is known that apart from the weapons coming from Russia, arms procured on the black and gray markets of the Ukraine, Belarus, and Kazakhstan also came into Armenia.<sup>6</sup>

The political, military, and technical support Moscow gave Armenia during this whole period had two aspects: one was open and direct; the other was clandestine and unofficial. However, analysts evaluate its result unambiguously: Russian military support was essential for the Armenian victory in the 1991-1994 war over Karabakh. It enabled Armenia to build what is, according to the country's leaders, the strongest army in the south Caucasus (Georgia, Azerbaijan, and Armenia).<sup>7</sup>

Some Russian analysts regard the Armenian army as the most militarily capable of all the CIS republics' armies, including Russia's, when one takes into consideration its experience in Karabakh and the high level of fighting spirit characteristic of both its soldiers and officers.<sup>8</sup>

However, in addition to the steady Russian aid and the patriotism and fighting spirit of the Armenians, there were other factors that determined Armenia's military ascendancy. Until now, neither Russian nor Western analysts have studied the question of what happened to the massive military technology that Armenia received in 1992-1995. However, it is possible to state the opinion of Russian military experts on this matter. In personal conversations with the author of these lines, in the year 2000, experts of the Moscow CAST and the PIR Center asserted that *it never happened that all of the weapons acquired on the black and gray markets of the CIS remained at the disposal of the state that financed and supported their purchase*. Commercial interests dominated the purchasing process of weapons and military materials. These same interests pushed the people who received the weapons to resell them, if there was a possibility of making a profit.<sup>9</sup>

Thus, North Korean, Jordanian, Egyptian, and other Arab representatives purchased arms in Moscow, Kiev, and Minsk, and then resold part of them to Iraq, Iran, and Lebanon, places where, for obvious reasons, making such purchases themselves directly in the CIS was rather more complicated.

Azerbaijan and Moldova also resold arms. In regard to Armenia, it was more complicated to export from there weapons that it had acquired than from any other country due to its geopolitical situation at the time. Experts suppose that it is probably for this reason that

relatively few –about 10% – of the armaments in the country flowed out of Armenia from the beginning until the middle of the 1990s, circumventing the Armenian army and the armed units fighting in Karabakh. These weapons flowed mainly to Iran. Teheran’s interest in many types of Soviet arms, especially munitions and spare parts for its technologically advanced equipment, was obvious. However, the determining factors here were geography – the presence of a common border between Armenia and Iran – and the dependence of the Yerevan government on aid from Iran.

Armenian Deputy Minister of Foreign Affairs, Ruben Shugarian, stated not long ago that “during the first years of independence, the tendency was to incline toward Teheran because it was considered to be our lifeline.”<sup>10</sup>

Such a lifeline could not be only one-way. Parts for rocket installations could have been among the arms sold to Iran. But to purchase whole rocket systems and batteries was probably too risky, since there were ample Russian, Turkish, and American informers in the border region. Also, it is not clear that Teheran wanted to expend millions of dollars for the acquisition of used large-scale rocket installations. The Iranians were more interested in portable shoulder-held rockets of the Igla type. Armenia received several dozen Igla rockets as an inheritance from the Soviet Army, then it acquired 40 launching complexes and 200 rockets of this type. It is certain that some part of this arsenal flowed into Iran.<sup>11</sup>

In the 1990s, arms sales from Armenia to Iran hardly made any perceptible dent in the weaponry of the Armenian army, nor were they able to bring about any significant upgrading of Iran’s weapons level. The main result of these sales was that they became the basis for the development of unpublicized military and technical contacts between the two countries. Moscow should have known about these contacts, but, insofar as is known, this did not prevent further deliveries of Russian arms to Armenia.

Prior to 2002 and the establishment of official contacts between the Armenian government and the Pentagon, the Russians evaded in every way possible any discussion of arms deliveries (whether of new or used weapons), or of their scope, or, especially, of the sums received in payment for deliveries.

However, at the very beginning of 2002, reports were disseminated in Moscow business circles close to the arms and military technology export business about the possibility of Armenia soon replacing its rocket complexes (8 Scud systems, SS-1 Scud/9P) with more up-to-date ones. Actually, Russia did not intend to sell anything. The idea was to supply new installations and rockets in place of the old ones. Meanwhile, the old, but still useful resources of the installations would be sold by Armenia to Iraq, which allegedly was willing to pay high prices for old installations.

The intermediary was supposed to be Kintex, a Bulgarian firm having representatives in Jordan, Turkey, and Syria. It is known that this firm was active in the black market for arms in the Ukraine, Belarus, and other countries of the CIS, including Armenia at the beginning of the 1990s.<sup>12</sup>

Items appearing in *The Times* of London on June 10, 2002, about the transfer to Iraq of tanks and other weapons, with the help of Bulgarian and Czech firms, give additional grounds for believing the reports about plans to sell Scud installations from Armenia.

Another development that should be noted in this connection is the strengthening of diplomatic ties between Armenia and Iraq. This found expression in the opening of the Armenian Embassy in Baghdad in 2001 and in the efforts of Armenia to receive a permanent “share” in the “Foodstuffs for Oil” program. Yerevan explained that it was necessary to open

the embassy because there is a 30,000-strong Armenian community in the land of Saddam Hussein, which allegedly needs humanitarian assistance.<sup>13</sup> This may be so, but impoverished Armenia itself receives humanitarian assistance from the whole world and can hardly permit itself the expense of maintaining an embassy whose aim is to provide humanitarian assistance.

### Chapter 3

#### The Military-Industrial Complex of Armenia Today

The experience of all the CIS states indicates that the large MIC left over from the Soviet period is a serious impediment to the changeover into a market economy. To be sure, closed enterprises and R&D centers, as “think tanks”, have certain unique virtues, but the overall economic character of the Soviet MIC contradicted the principles of the market economy. First, all the technologies that were developed and produced depended upon cooperation between the various republics of the USSR; not one of them was economically or technologically independent. Second, the system depended heavily on the use of very cheap energy. However, the possibility of maintaining these two conditions disappeared in 1991.

If only for this reason, it was impossible to think about Armenia entering the world market as an independent producer of military systems. In addition, Armenia was not geared to producing final products (instruments, apparatuses, etc.).

However, in distinction to other CIS republics, Armenia produces something for which the Russian aviation and rocket industries find it difficult to locate a replacement, namely, electronics and radar technology. For several years, the confusion and disorder that reigned in the Russian economy prevented Moscow from deciding just which products it wanted from Armenia. Only in 1997 was a list of 22 enterprises (factories and scientific research institutes) composed, with which the Russian aviation and rocket industries wanted to establish firm and long-lasting ties. Prior to the collapse of the USSR, there were 55 such firms. However, if Russia, under the new conditions was interested in the products of 22 enterprises, this was a relatively high percentage (40%) of the former MIC. Even the percentage of Ukrainian plants now cooperating with the Russian MIC is significantly lower (about 30% of the former MIC). In other states of the CIS, the proportion of such enterprises is lower than 20%.

Russia was, and remains, the natural and practically only potential customer of Armenian products. But only in 1998-1999 did signs appear of real cooperation between the Russian aviation and rocket firms and Armenian instrument manufacturing plants.

By that time, these plants had declined significantly from their former level. The years of economic dislocation and standing idle could only have a negative effect on their technical condition.

Also, the severe economic crisis in Armenia, apart from everything else, led to a large emigration. The flow of refugees and emigrants that began with the 1988 Spitak earthquake became stronger in 1990. According to calculations made by H. Khachatrian, at least 800,000 persons left Armenia between 1990 and 2001, out of a total population of 3.5 million.<sup>14</sup> Those leaving were not Russians or Russian speaking persons, for there were practically no such people in the country; 99% of the population was ethnically Armenian, and these were the people who were emigrating. They went – and many continue to do so – to the US, Belgium, France, and Australia (where significant Armenian communities have existed for a long time), as well as to CIS countries and Moscow. Qualified engineers and scientists who worked in high-tech were among the first to leave.

In spite of the poor condition of most of the Armenian MIC firms, many of them are still of interest to Russia, just as they were in the Soviet period. However, in cash terms, the figures in which this interest is expressed are not so large. In 2001-2002, intensive negotiations were conducted over the transfer of several scientific research institutes and electric power plants from Armenia to Russia, as a way of covering Armenia's state debt to Russia. This debt was incurred mostly for oil and gas deliveries, and amounted to approximately \$100 million. The signing of the agreement took place in early November 2002.<sup>15</sup> The fact that Ilia Klebanov – who made a career in the MIC and held many positions there – headed the Russian side from the very beginning of the negotiations indicates clearly the character of the Russians' interest in the enterprises involved.

At the beginning of 2002, the government of Armenia approved, in principle, the proposed agreement with Russia. According to it, the Russian Federation would be given ownership over the “Mars” R&D Center, Institute of Automatic System of Management, the Institute of Materials Science, and the Institute of Mathematical Machines. Russia would also be given the hydroelectric power plant on the Razdan River, consisting of five separate units, which were constructed over 60 years ago. This electric power complex was valued at \$42 million, while the four R&D centers were worth something like \$60 million. Armenian Minister of Defense, Serge Sarsikian, insisted that the transfer of the enterprises to Russia had the aim of guaranteeing the full employment of their workers, and said he thought that significant sums of money would probably be invested in their modernization.<sup>16</sup>

Less known paragraphs of the agreement promise Armenia two other important things. First, regular supply of nuclear fuel for the nuclear power plant, and second, to keep in secret all the classified technical information that the new Russian owners will possess when they get the above mentioned four Armenian centers and sell out their production.<sup>17</sup>

The declaration that steps would be taken to establish Russian control over that part of Armenian industry most important to Russia was made almost simultaneously with the deliveries of new weapons from Russia. These two developments indicate a new stage of cooperation between the two countries. At the same time, the striving to obtain full ownership over the plants and scientific research institutes, and not to be limited by their being connected with joint-stock companies controlled by the state – like the defense systems and others, for example – makes it necessary to raise certain questions. Russia's actions can be fully understood as a clear and even hasty effort to counter the Iranian policy of penetrating the Armenian MIC.

## **Chapter 4**

### **Armenia's Relations with Iran and the US Sanctions**

The mutual interests of Armenia and Iran are defined by several factors. First of all, there is geography, the fact that the two countries are neighbors sharing a border. Having survived the severe period of the early 1990s, with the aid of the US, Russia, and even Iran, Yerevan has still not solved – and is not able to solve – the problem of its insufficient energy supplies. The restoration of the atomic energy electric plant loosened somewhat the “noose” around the neck of the Armenian economy, but the country's huge concern over every drop of oil and every cubic meter of gas remained as before. Active cooperation developed between Armenia and Iran, first of all, in connection with the construction of a gas pipeline that would supply Armenia with gas and in connection with agreements on reciprocal deliveries of electric energy to the shared border regions during various seasons of the year. An agreement about

the construction of the gas pipeline, 140 kilometers long, at a cost of about \$120 million, was finally signed in mid-2002 after lengthy talks.

The trade relations between Armenia and Iran are of a rather modest scope. In 2001, according to official figures, Armenia sold Iran metals in exchange for energy resources: \$12 million worth of aluminum, \$5 million worth of copper, plus other raw materials, for a total of \$32.5 million. Teheran's political sympathies toward Armenia were conditioned by Iran's opposition to Turkey. Both Iran and Russia are concerned about Turkey's growing influence in the Caucasus. Of course, Iran takes into consideration Russia's steady support of Armenia. In the pragmatic political line adopted by Teheran for almost a decade now, one can find combined such things as, on the one hand, the complete condemnation of the Chechen fighters, who fight with the Qur'an in their hands (right up to the consistent use of the term, "Chechen terrorists", in official and semi-official Teheran publications) and, on the other hand, support for the Christians in the war with the Moslems in Karabakh.<sup>18</sup>

There are practically no published data about the activity of private firms in Armenia. Only in May 2002 did anyone begin to talk about the activity of this sector in the export of military technologies. This was after the US State Department declared sanctions on two Armenian companies for violating a US law (2000) on the proliferation of dual technologies in Iran. (Dual technologies are ones that can be utilized for both military and civilian purposes.) The American ambassador in Yerevan made an official declaration about this on May 4, 2002, and added that sanctions were also being imposed, in this connection, on two Moldovian firms and eight Chinese firms. However, it remained unclear just what role each of these companies played in the transfer of technologies having some connection with the production of weapons of mass destruction.<sup>19</sup> (Were the technologies involved transferred into Iran from elsewhere via the territory of Armenia, or were they transferred from Armenia, with the aid of these firms, via a third country?)

Meanwhile, analysis of the relations between Iran and Armenia during the last four or five years casts another light on the above incident, which emerged unexpectedly for both countries.

Apart from Russia, Armenia had only a very few possible customers for, or investors in, its MIC electronics and radio-technology products – namely, Iran and certain Arab countries – countries with large stocks of technologically advanced Soviet military materials and perhaps Soviet-style rockets they developed themselves. The possibility of receiving expensive electronic components of avionics, rocket guidance control, or knowledge of the technology of their production, directly from the producer and developer, was an alluring prospect for any of these countries. It is obvious that having several different paths for obtaining the military and technological legacy of the USSR was preferable to having just the one that led straight to Moscow.

It is known that Syria tried, not without success, to buy a controlling interest in stocks of companies in the Ukraine and Belarus that produce military electronics.<sup>20</sup>

After establishing contacts with Armenian arms dealers and penetrating the Armenian market through energy supplies, it was not difficult for Teheran to get involved in earnest in plants producing military electronics and radio technology.

Armenian laws on privatization are the most liberal in the FSU. In addition, after the several years of economic collapse experienced by the country, any Armenian plant of interest to Teheran would be priced at not more than several million dollars, \$10-12 million at the most.<sup>21</sup>



Nowhere else on the globe could the Iranian military authorities obtain access to such technologies as, for example, those used in producing advanced guidance systems, and, moreover, at a price to fit their budget.

In Russia, as early as the beginning of the 1990s, Iranian diplomats received quite complete descriptions of the workings of the basic enterprises of the USSR’s huge MIC (often with the assistance of directors of impoverished plants, who themselves handed over to the Iranian diplomats detailed descriptions of the capabilities of their plants and of the products being developed by scientific research institutes connected with them). The Iranians were able to use this information to directly approach producers of weapons and technologies they needed.

The Iranians have made great progress in the creation of their own military industries. They are investing their greatest efforts in the creation of an up-to-date electronics industry able to guarantee aviation and rocket production.

If the reports are true that Persian has become the third language in the world (after English and Russian) in the number of physics and mathematics books published, then this surely indicates how seriously the Iranians take the matter. They are not able and do not want to use English for teaching in their schools. But they are laying the foundations for the serious technical education of their population rather successfully, just as the Soviet Union did in its time, in the 1930s and 1940s, following the slogan, “Cadres decide everything!”

In the words of a former leading engineer at Yerevan’s Orbit plant, now living in Israel, the most complex problem for a probable buyer in Armenia was to choose among the possibilities for combining the elements and components produced in Armenia with the remaining airplane and rocket parts and equipment that could be obtained from Russia. The Iranians, however, managed to deal with this problem, from one year to the next.<sup>22</sup>

The Iranians are fully competent in determining in which cases Armenian products make it possible for them to reduce, simplify, and make cheaper their orders in Russia. For example, certain advanced guidance systems that are produced at Armenian plants are at the heart of the modernization of many rocket systems. Having obtained knowledge of their technology, or at least partial information on their manufacture, the Iranians can easily improve the rockets of various sorts that they already have, and they can relate more calmly to Russia’s refusal to sell them such up-to-date weapons as the Igla, mentioned above, or Moskit and Yakhont anti-ship rockets. The Yakhont, in the opinion of Western experts, if installed on Iranian warships, would dangerously increase their ability to close the Straits of Ormuz, through which about 20% of the world’s oil passes.<sup>23</sup>

Teheran wants to be able, in the near future, to manufacture for itself, under license, much of the military equipment, and especially the expensive rocket weapons, that it intends to purchase in Moscow according to the 2001 agreement. In this connection, the Iranians very much need the components of systems produced in Armenian plants, and also the Armenians’ experience in organizing technologies of production (sometimes with improvements over those already existing in Iranian plants). They may need these more than they need deliveries of ready-made systems, which must be disassembled “down to the last screw” in order to learn how each component is made. Armenian engineers are very familiar with many of the processes of operational development and assembling of their equipment, which originated in Russian enterprises, and they are fully competent to give skilled consultations on these topics.<sup>24</sup>

It is difficult to say how much hardware and software the Iranians have succeeded in buying and transferring to themselves on the sly from Yerevan scientific research institutes. But it is

obvious that by 2001, the situation was such that it had become difficult for them to continue their activity only in the private and unofficial sector. They abandoned the phase of using prepared solutions and the already accumulated experience of scientific research centers, and began to place before their specialists new targets, in conformity with their specific needs. For this to succeed better, it was found necessary to change the framework of activity and to conclude official agreements that would grant effective legal control over the activity of the enterprises.

After certain preparatory steps, the Iranian Minister of Defense, Ali Shamkhani, came to Yerevan in March 2002 and signed an agreement on military and technical cooperation between the two countries. According to the memorandum, this agreement was intended to cement the existing cooperation and give the stimulus for its further development. However, the memorandum did not say, or even give a hint, about what cooperation it was referring to. By the most objective analysis, it is hard to find in this agreement any field of cooperation besides the one involving the potential of the Armenian military equipment and electronics plants and scientific research institutes.

At the end of March 2002, the Armenian Minister of Defense, S. Sarkisian, visited the Pentagon, where an agreement was signed governing the beginning of the realization of the American program of assistance to the Armenian armed forces, in the sum of \$4.3 million a year. The money was earmarked for the instruction and training of Armenian frontier guards and customs officials. After many years, during which the US did not give any military assistance to either Armenia or Azerbaijan, because of the Karabakh conflict, this was an important achievement for the Yerevan government. It cannot be ruled out that the State Department agreed to this step of the Pentagon after reports appeared in December 2001 about the participation of *al-Qa`idah* members in the Karabakh fighting on the side of Azerbaijan.<sup>25</sup>

However, it was not long thereafter, on May 4, 2002, that the US ambassador in Yerevan made his declaration about State Department sanctions in connection with violations of the year 2000 US law on the proliferation of dangerous technologies in Iran. As noted above, two Armenian firms – as well as eight Chinese and two Moldovian firms – were accused of violations of this law. However, they were not penalized so severely: the sanctions were not extended to the activities of Armenian government organs, and the firms themselves were prohibited for just two years from trading with US firms. After statements of the Armenian government expressing bewilderment and apologies, the Americans gave additional details and explained that the matter concerned the Lysin Open Joint Stock Company that owned a small plant in the town of Charemntsavan, 30 kilometers north of Yerevan. That plant, for a while, had produced biochemical additives to fodder for cattle.<sup>26</sup>

No biological substances were sold by Armenia to Iran in 2001. Then, according to an informed source, all the equipment of the plant that had stood idle during the past year was dismantled and sold to Iran. The American Embassy in Yerevan allegedly warned the government about the need to prohibit the transaction, since the unique equipment it involved could be used by the Iranians for the production of biological weapons. The sale, nevertheless, took place, with Al-Ahd Sadeq Trade Company, registered in the United Arab Emirates, being cited as the official buyer of the equipment, for the sum of \$102,000.<sup>27</sup>

One of the persons subjected to sanctions was Ashot Ohanian, owner of the biggest block of Lysin stocks. The second biggest owner of stocks after him was an Iranian citizen of Armenian origin, Varushan Andreasian. There are indications that Armen Sarkisian, brother of Armenian Prime Minister Vazgen Sarkisian, who was murdered in 1999, had a direct

connection with the deal. Both Armen Sarkisian himself and people connected with Lysin deny categorically that he had any connection with the firm or, in general, that he has participated in any transactions with Iran. However, the names of the “first persons” of Armenia are almost always mentioned in the reports published about doubtful deals with Iran.

Iran also denied that it had imported any technologies connected with the production of weapons of mass destruction and asserted that Lysin was by no means the first Iranian-Armenian enterprise accused by the US of such transfers.<sup>28</sup>

Judging from additional statements made by the US Ambassador in Yerevan, John Ordway, and from numerous hints given out by State Department sources during interviews on the Armenian service of Radio Free Europe in May 2002, the US knew about many cases of proliferation in Iran of undesirable technologies, information, and military materials. Former Armenian Minister of Foreign Affairs, Aleksandr Arzumanian, also confirmed American concern during recent years.<sup>29</sup> Moreover, it was broadly hinted that Russian plants stood behind the Armenian “leaks”. The Russians would transfer to the Armenians and to other partners superfluous production and information potentially necessary to Iran, or the Russians would ignore (of course, not without a payoff) the question of how Armenian businessmen disposed of the property belonging to them.<sup>30</sup> The step-by-step plan to transport obsolete Scud installations from Armenia to another country (Moldova, Bulgaria, the Ukraine), in order to then transfer them through Syria into Iraq, could not remain a secret from the CIA. Of course, such information was not made public by official Washington. However, somewhat later, in July 2002, three big Russian plants were included in the blacklists of the State Department for delivering dual technology to Iran and Libya. Russia was linked to the Armenian proliferation, but only in a general way, not concretely.

The Lysin case was known to the Americans in greater detail, and for this reason served as a convenient lever for putting pressure on the “Armenian sphere of proliferation”. The goal here was real: to reduce the level of relations between Armenia and Iran so that essentially only the joint energy program remained. The Yerevan government stated more than once that its customs officials could not permit the transport of products prohibited for export. However, Aleksandr Arzumanian, mentioned above, asserted outright just the opposite: Such a transaction, he said, could simply not pass through customs without government officials knowing about it, especially taking into consideration the small volume of trade and other transactions with Iran.<sup>31</sup>

The State Department sanctions evidently achieved the desired results, judging by the reactions of the Armenian media and the responses from Teheran that followed. These were not so aggressive as they had been previously. On the one hand, they protested against the pressure from Washington, and, on the other hand, they spoke about the unfulfilled potential of the relations with Armenia.

There were a few very snide speeches and remarks made by Teheran officials addressed to Yerevan after May 2002, concerning their obedient relationship with the USA. Yerevan didn't fight back and tried to keep the delicate balance in their policy toward Iran and first of all to keep the energy supply and stable situation in Karabakh.<sup>32</sup>

At the time of this writing, it can be said that the risk of proliferation of exceptionally dangerous weapons from Armenia or via Armenia has been significantly reduced in a way that has enabled the US to avoid damaging its relations with Russia in the Caucasus region. This latter point is very important. For even if the risk of Armenia's participation in proliferation has been significantly reduced, for the moment, it's potential for doing so has not changed. Its economic crisis and weak, unstable political system remain. Its military and

technological products, in spite of this sector's significant decline, remain the most attractive to foreign clients of all the products manufactured in Armenia. In light of all this, one can hardly expect export controls alone to be effective.

In addition, Armenia's ties with the Russian MIC remain firm, and are even becoming stronger, while all the reasons for "inclining" toward proliferation indicated above are characteristic of the Russian MIC. Therefore, sanctions against Armenia alone, most likely, will have only a short-term effect. Pressure on Russia, as the main source of proliferation, and on Armenia as the second in line (or, more precisely, as one of several "second in line" states), would be more productive and more in conformity with reality. In spite of all the disagreements concerning the sale to Iran of Russian weapons, technologies, and services connected with them, wider coordination of action between Russia and the US in the Caucasus and Caspian region could become a factor leading step-by-step to stricter export controls, both in Russia and Armenia, and, indirectly, even in other countries of the CIS. This is even more likely in light of the post September 11 policies of the United States and the hard line it has taken toward Iran, which have already led to Iran's isolation in the question of the division of rights over the Caspian oil, and which will probably, with time, weaken Iran further.<sup>33</sup>

## Conclusion

1. Armenia received a significant number of military high-tech centers and plants as a result of the collapse of the USSR. However, for a number of reasons, it has not been able to exploit this potential.

Armenian plants, created in their time as shops, or sub-sections, for the main Russian aviation, rocket, and space technology enterprises, continued to depend upon cooperation with Russia. And although Russia, for its part, needed Armenia's radio and electronics products more than the products of any other CIS country, only at the very end of the 1990s did the ties that had fallen apart begin to be restored. In 2002, the Armenian government agreed to hand over to Russia large R&D centers in the development and production of military electronics, as partial payment of Yerevan's debt to Moscow for deliveries of oil and gas.

2. During the period 1992-1996, Russia supplied Armenia with arms that included P-17 Scud tactical rockets, dozens of rockets for anti-aircraft defense systems, and numerous other weapons, estimated to have been worth one billion dollars. All of this was in addition to the significant amounts of arms Armenia received in 1992 as a result of the division of the property of the Soviet Army. By agreement, Russia kept a number of military bases in Armenia, and actually bears responsibility for the defense of that country's airspace. In recent years, military cooperation between Yerevan and Moscow has increased, and in June 2002, the sides began to talk openly for the first time about new transfers of arms for the Armenian army.
3. The arms transfers made to Armenia in 1992-1996 did not receive any official approval from the Kremlin. They were carried out through channels connected with the "gray" and "black" markets in arms that blossomed in those years in the FSU. Whenever the interests of high-ranking military officers and businessmen predominated in such deliveries, the resale of the weapons, mainly to Iran, was facilitated.
4. Illegal deliveries of arms to Armenia were investigated on the Russian side by a Duma commission at the initiative of General Rokhlin. In the Western press this scandal was

compared with the Iran-Contras (“Irangate”) affair. Although criminal proceedings were begun in Moscow against several of the figures involved, these cases were quickly closed. From the Armenian side, there were never any investigations, nor were there ever any serious publications dealing with the arms trade and proliferation. At the beginning of 2002, information had been spread about the possibility of Armenia soon replacing its rocket complexes with more up-to-date equipment.

5. Cooperation between Armenia and Iran began at the beginning of 1990. Armenia was under blockade from Azerbaijan and Turkey, and Iran made it possible to transport goods by rail across its border to Armenia. In return, the Armenian authorities turned a blind eye to the outflow of part of the arms received from Russia (and also from the Ukraine and Belarus). The Iranians at that time were interested mainly in receiving from the former Soviet arsenals, munitions and spare parts for tanks, artillery, and rocket complexes.
6. During the second half of the 1990s, the Iranians, having strengthened their ties with Armenia mainly through deliveries of oil and gas, became interested in factories and scientific research institutes involved in military production. The fact that Armenia could not supply finished products did not stop the Iranians. Having received the basic elements of valuable systems (for example, rocket navigation and guidance systems) and instruments and parts, they were able to achieve the production of complete units at Iranian factories, following the instructions of Armenian engineers. Other elements interested them with the object of fine-tuning or improving the production of analogous products in Iran.
7. By 2001, the Iranians had probably exhausted the possibilities of their unpublicized cooperation with factories and scientific research institutes in Yerevan, which make use mainly of old developments and components from stockpiles. New, official frameworks were needed in order to meet the demands of larger-scale and more expensive orders that would be aimed at meeting the needs of the Iranian MIC. Such an agreement would permit joint ventures, the purchase of raw materials, and the receipt of information from Russian MIC enterprises.
8. After the Pentagon, in April 2002, allotted to Armenia the long expected aid package, earmarked for the instruction and training of Armenian frontier guards and customs officials (in the sum of \$4.3 million), the US began to take action. According to the US State Department, the Armenian authorities were not taking steps to annul a transaction by which the equipment of a certain biological substances plant would be sold to Iran, equipment that could be used in the preparation of biological weapons, so, the US declared sanctions against the Armenian company involved (as well as against ten other firms registered in China and Moldova, which were also trading goods from the prohibited list with Iran).
9. A lion’s share of the know-how in military electronics production, and maybe some of the components themselves, have already been transferred from Armenia to Iran. But as a result of the US pressure on Yerevan, the possibilities at present for exporting military and dual technologies have been significantly reduced for the time being.
10. The recently upgraded cooperation with the Russian MIC opens new opportunities to those who, until recently, provided Iran with military orientated hardware and software products.

11. Parallel pressure made by the US State Department on some R&D centers and companies within the Russian MIC, to stop violation of international limitations on the trade with Iran, could bring better results than the strongest steps against Armenia itself. In any case, the Russian MIC remains the “head” and the main source of proliferation from the CIS countries. Even modest progress in tightening the Russian export control system might have serious effect on the ability and willingness to transfer arms to Teheran from Armenia and through Armenia.

## Appendix

The major enterprises of the machine construction, radio electronics, and electrical engineering industries of the Republic of Armenia, that could transfer military equipment, components and know-how to Iran.

“Aviakompleks” <i>Priboroostroitel’nyi (Po) Zavod</i> (“Aviakompleks” Instrument Manufacturing Plant)	Specializes in control systems and aircraft life-support systems, and radio electronics devices.
SKB	Radio electronic devices for space station platforms.
“ASUP”	Specializes in development and production of electronic and electro-technical devices and instruments.
ANI NPO	Specializes in development and production of monitoring and measuring equipment and computer technology.
Ashvich, AO	Specializes in the production of thin-film integrated circuits and computer technology instruments.
“Galaktika”	Specializes in the production of optical, mechanical and radio electronics instruments.
<i>Kometa, Nauchno-Proizvodstvennyi Institut</i> (Comet, Scientific and Industrial Institute)	Specializes in development and production of radio, technical and radar systems, and devices.
<i>Lazerain Tekhnika Nauchno-Proizvodstvennoe Ob’edinenie</i> (Lazerain, Technological Scientific Industrial Association)	Specializes in research, development, and production of crystals, optical elements, lasers, and laser systems.
<i>NII Vychislitel’noi Tekhniki I Informatiki</i> (Scientific Research Institute of Computer Technology and Information Theory)	Leading institute in the development and application of computer systems and computer software.
Signal, Opytno-Konstruktorskoe Biuro (Signal, Experimental Design Bureau)	Specializes in development and production of automatic control systems and diagnostics of radio electronics devices for aeronautical equipment.
Sirius	Specializes in production of products for the electronics industry.

<i>Tekhnika I Tekhnologiiia, OOO</i> (Engineering and Technology, OOO)	Specializes in scientific instruments and electronic devices.
<i>Tranzistor, Ashtaraskii Zavod</i> (Transistor, the Ashtarasky Plant)	The largest plant for the production of semiconductor devices. It is equipped with the newest equipment. Highly skilled specialists are among the personnel. It meets world standards in the production of semiconductor devices.
<i>Elektron</i> (Electron)	It produces electronics and electro-technical equipment.
“Mars”	Electronic equipment, avionic equipment.
“ <i>Manes</i> ” <i>Zavod Tsvetnykh Metallov</i> (Manes, Nonferrous Metals Plant)	It produces nonferrous metals, powders, and alloys for the electrical, machine construction, aircraft, automobile, and shipbuilding industries.

## Endnotes

- <sup>1</sup> In essence, only one analytical paper on the Armenian military-industrial complex (MIC) has been published in Russian, and only two or three on the supplies of weapons to Armenia and Karabakh, in which Russia, the Ukraine and Belarus, among others, took part. Of Western publications, only one can be mentioned (apart from data on transfers of weapons to Karabakh), that is, the detailed picture of the Soviet period MIC (including Armenia) presented by the CIA. In October 2001, even this information disappeared from the Internet site.
- <sup>2</sup> The main enterprises and military scientific research institutes of the USSR were located in Russia as much for economic as political reasons. The Ukraine was an exception. As early as the 1930s, large centers for the production of arms were located there. To a lesser degree, this was true of Belarus, and there were a few exceptions with regard to other republics of the USSR. It is indicative that in time, from the middle of the 1970s, these exceptions became more frequent, because of the shortage of qualified workers in Russia, and also because of pressure from the leaders of the national republics who wanted to join the exclusive MIC “club”.
- <sup>3</sup> Marat Kenzhetaev, “*Oboronnaia promyshlennost’ respubliki Armneniia*” (Defense Industry of the Republic of Armenia), *Ekspert vooruzhenii* (Arms Export), No. 3, 1997, Chapter 2, <www.cast.ru>.
- <sup>4</sup> *Ibid.*, Chapter 3.
- <sup>5</sup> *Ibid.*, Chapter 1.
- <sup>6</sup> Russian politicians and military specialists often cited figures about the sale (transfer) of Turkish tanks, rocket complexes, and munitions to Azerbaijan. In particular, Turkey received from Germany hundreds of tanks, airplanes, and helicopters that had belonged to the army of the former German Democratic Republic. These weapons were not very useful to Turkey, since its weapons arsenal was oriented to NATO standards.  
  
All these arms were allegedly given over by the Turks to the Baku government. *Ibid.*, Chapters 3 and 4, <www.cast.ru>.
- <sup>7</sup> Emil Danielyan, *Armenia Report*, RFE/RL, June 7, 2002.
- <sup>8</sup> “Aspects of Military Significance of Nagorno-Karabakh Republic”, *Russia Military Analysis*, No. 97, August 23, 2002, <www.felist.com>.
- <sup>9</sup> Information received by the author personally, in Moscow, May 2000.

- <sup>10</sup> *Respublika Armeniia* (Republic of Armenia) (Russian), March 22, 2001, p. 2.
- <sup>11</sup> According to data presented by Rokhlin, the Russians assessed the value of each such light installation with a set of six to eight early 1990s-model rockets, at about \$250,000. [See K. Makienko, “‘Seryi’ Rynok Oruzhiia i VoЕННОi Tekhniki v gosudarstvakh SNG” (The “Gray” Market in Arms and Military Technology in the States of the CIS), “*Nauchnye zapiski*”, *PIR* (Scientific Papers of the PIR Center), Moscow, No. 6, 1997, p.10.] Even if the Iranians paid more for them, still, they were worth it in terms of their performance capabilities. The Russians even assert that technically this weapon is even better than the Stinger-type rockets. At the beginning of 2002, Moscow refused to accept an order from Iran for an improved model of the Igla, referring to the fact that there could be no guarantee that these rockets would remain exclusively under the control of the Iranian army.
- The last models of the Igla produced by the Kolomna Machine Construction Bureau (KBM) (of the 9K38 type, which at the beginning of the 1990s were the previous models), were capable of hitting their target – helicopters and airplanes – at a height of 3.5 kilometers and at a distance of 5.2 kilometers. It is practically impossible to locate this weapon by means of reconnaissance. It can be fired from the shoulder, from an installation on a vehicle, a tank, a boat, and so on, that makes it possible to fire volleys and improve accuracy. *Nezavisimoe Voennoe Obozrenie* (NVO), January 15, 2002, p. 6. In the summer of 2002, Chechen terrorists using Igla were able to shoot down two Russian helicopters, killing over 120 persons. According to Israeli newspaper reports, Russian President Vladimir Putin promised Israeli Prime Minister Ariel Sharon, during the latter’s visit in Moscow on September 30, 2002, that such rockets would not be sold to Syria.
- <sup>12</sup> *Ibid.*, Konstantin Makienko, p. 11.
- <sup>13</sup> *Op. cit.*, *Respublika Armeniia*, p. 2.
- <sup>14</sup> Haroutuin Khachatryan, “The Paradox of Armenian Economy”, <[www.euroasianet.org](http://www.euroasianet.org)>, January 4, 2002.
- <sup>15</sup> Hrach Melkumian and Atom Markarian, “Russian-Armenian Debt Deal Again Delayed”, *RFE/RL Armenia Report*, June 20, 2002; *Izvestiia*, November 5, 2002; *Izvestiia*, November 3, 2002.
- <sup>16</sup> H. Melkumian, A. Markarian, “Russian-Armenian Debt Deal Again Delayed”, *RFE/RL Armenia Report*, June 20, 2002; also, H. Melkumian, S. Avoyan, “Armenia, Russia Agree on Debt Settlement”, *RFE/RL Armenia Report*, November 5, 2002.
- <sup>17</sup> E. Danielyan, A. Markarian, H. Melkumian, “Armenia to Set Date for Metsamor’s Closure After International Inspection”, *RFE/RL Armenia Report*, October 29, 2002.
- <sup>18</sup> E. Danielyan, “Armenia To Probe Iran Deals After US Sanctions”, *RFE/RL Armenia Report*, May 10, 2002.
- <sup>19</sup> *RFE/RL Magazine*, Armenia, March 9, 2002.
- <sup>20</sup> Ze'ev Wolfson, “Syrian-FSU Military Cooperation”, *Nativ*, Vol. 75/76, September 2000, p. 17.
- <sup>21</sup> *Respublika Armeniia*, January 11, 2002.
- <sup>22</sup> In the work of the Russian specialists on Iran, A. Krymov and E. Engelgart, “*Sistemnaia uiazvimost' politiko-voennoi struktury Islamskoi Respubliki Iran*” (Systemic Vulnerability of the Political and Military Structure of the Islamic Republic of Iran), *Ekspert Vooruzhenii*, No. 1, 2001, pp. 38-44. There are references to the fact that as early as the end of the 1980s, Iranian government agencies had created special groups that coordinated the purchase of sections of systems and technologies in different countries and from different firms, equipment that it was impossible, for various reasons, to obtain complete from one source. Their efforts to obtain separate elements of hardware and specifications of technologies prohibited for export were rather successful, since these efforts were backed-up by plans to combine everything obtained into one whole, later on, in Iran. According to the testimony of Moscow and St. Petersburg professors, Iranian students and doctoral



candidates manifest a high level of preparation and motivation, and are fully able to perform the known trick, whereby, for example, 20 students ask the author of a report at a conference 20 different “innocent” questions, and the answers he gives make it possible to put together a full picture of a new idea that the author of the report had no intention of revealing. A. Krymov and E. Engelgart speak about the creation of *two unconventional methods for increasing the military potential of Iran with minimal costs*: one, preparation for the possibility of closing the Straits of Ormuz, and two, the use of international terrorism to achieve political goals. In regard to the first method, special attention was paid to acquiring effective anti-ship rockets that could be launched from all kinds of platforms (submarines, ships, land-based batteries, helicopters, etc.) and the means for protecting them from air strikes. To arm the second method, emphasis was placed on the development of new technologies of terror.

<sup>23</sup> The Yakhont is a compact anti-ship cruise missile that can be launched from any platform (submarines, ships, helicopters, airplanes, and land-based batteries). According to Russian data, it exceeds every similar existing Western weapon in the effectiveness of the damage it can do to the target, its stability, and the flexibility it gives in the selection of its trajectory. (*NVO*, No. 26, 1999, p. 4.) Moskit (for instance the model 3M-80E) is an anti-aircraft carrier missile that had been sold so far only to China.

<sup>24</sup> Personal contact with an Armenian engineer visiting Tel-Aviv, Summer 2002.

<sup>25</sup> *Magazine Caucasus*, RFE/RL, “Possible US Military Buildup”, March 2002.

<sup>26</sup> *RFE/RL Magazine*, March 9, 2002.

<sup>27</sup> Ruzzana Khachtrian, E. Danielyan, “US Named Armenian Firm Subject to Iran Sanction”, *RFE/RL Armenia Report*, May 16, 2002.

After the Chernobyl disaster, bioactive substances under the generic name “Lysin” became widely known as substances that increased the resistance of an organism to radiation and cancerous diseases. At the beginning of the 1990s, the products of the Armenian plant were in great demand in Belarus and the Ukraine, where millions of people living in the Chernobyl disaster zone were subjected to increased risk of radiation. In a short time, however, the “Lysin boom” in Belarus and the Ukraine ended.

<sup>28</sup> E. Danielyan, A. Markarian, H. Melkumian, “Government, Blacklisted Businessman Deny Role in Alleged Iran Deals”, *RFE/RL Armenia Report*, May 17, 2002.

<sup>29</sup> *RFE/RL Armenia Report*, May 18, 2002.

<sup>30</sup> Oleg Khrabryi, <[www.vesti.ru](http://www.vesti.ru)>, May 28, 2002.

<sup>31</sup> E. Danielyan, “Armenian Customs Chief Denies Sensitive Equipment Sales to Iran”, *RFE/RL Armenia Report*, May 22, 2002.

<sup>32</sup> *RFE/RL Armenia Report*, October 29, 2002, also *Zerkalo*, (Russian), Baku, Azerbaijan, November 4, 2002, p. 9.

<sup>33</sup> Maksim Yusin, “*Ayitolly Podderzhali Terroristov*”, *Izvestia*, October 31, 2002.