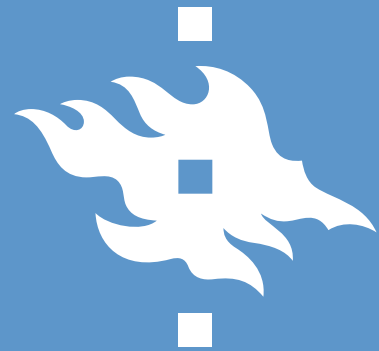


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Russian Military-Industrial Complex

Irina Bystrova

Abstract

During the Cold War, military-industrial complexes (MICs) appeared in most of the countries, involved in it. The MIC was a confluence of such groups, as professional military, defense-industrial, governmental and security bureaucracies, and a scientific and technical elite. In the paper, all these groups are presented in social and personal context.

The structure of Soviet MIC was formed by the mid-1960s. The organ of coordination was Military-industrial commission of Presidium of the Council of Ministries of the USSR. And, a “military-industrial complex of the Warsaw Pact” was created.

After the end of the Cold War, the MIC of Russia suffered major cutbacks. Since 1999 defense industry was financed at higher level, but defense production was oriented on exports. After 2006 a new period of development of the MIC started: the Military-industrial commission and State order for armaments were restored; defense industry was more oriented on the supply of Russian Armed Forces. This is the sign of rising priority of defense sector, and change in governmental policy, with the use of the Soviet legacy of State control over the national security. Despite difficulties, Russian MIC has inherited scientific and technical potential of the Soviet MIC.

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Contents

Russian Military-Industrial Complex	1
The MIC in Historical Research Literature	4
The Sources on the History of Soviet MIC	4
Forced Defense Construction in the USSR (1930-1945)	5
The Military Industry of the USSR in 1941-1945: The Domestic and International Aspects of Development	5
The Military-Industrial Complex and the Cold War	6
The MIC of the USSR and the Countries of “Peoples’ Democracy”	7
Military-Technical Cooperation of the USSR and the Countries of the “Third World”	8
Social and Political Aspects of Development of the Soviet MIC	9
The Political-Military Leadership	9
The Nucleus of the Military-Industrial Complex: The Military, Industrialists, and Scientists.....	10
The Military-Industrial Complex: Contradictions and Unity	11
Russian Defense-Industrial Complex in the Post-Soviet Period.....	12

Russian Military-Industrial Complex

This paper is the result of the first complex study of the history of the military-industrial complex of the USSR from 1930s to 1980s, and its transformation in post-Soviet period of 1990s-2000s. A broad range of aspects of the problem is included: economic and technical, social and political, cultural, international.

According to the author's major concept, the military-industrial complex (MIC) is seen as a confluence between the social and political groups connected with the military development: professional military, defense-industrial establishment, Communist Party and state bureaucracies, scientific and technical elite.

The Soviet case of the MIC is studied in the framework of the international history of the XXth century. The XXth century was characterized by sharply growing scale of military conflicts. This tendency was expressed in its most extreme form in the appearance of "world wars". These were total wars, which included front and rear. In these conditions permanent connections between war and economy were established, too. In the "militarized economies", a specific form of connection between governmental apparatus, military professionals and those who produced military techniques, appeared (they may be called "military-industrial liaisons"). Militarized economy appeared in all countries involved in World War I ("classical" system of state regulation of economy was created in Germany at that time). But after the war there was sharp reduction of military expenditures, which was characteristic for all of these countries.

The situation changed drastically from the end of World War II, when principally new period of the Cold War started, which was characterized by high level of defense expenditures in peacetime. In conditions of the Cold War, military-industrial complexes appeared in most of the countries, involved in it (the USA, Soviet Union and Russia, China, France, Great Britain).

In general, the processes of the MIC formation and development coincided in the United States and the Soviet Union. These processes were connected with such factors, as total militarization of both societies during World War II, the invention of nuclear weapons at the end of the war and the escalation of the arms race during the Cold War.

The term "military-industrial complex" was introduced by the US President Eisenhower in 1961. After that the concept was developed by American political scientists. In variants of the concept, the MIC was seen as a power elite, a ruling class, as a bureaucracy (i.e. a narrow powerful group), or as a lobby, which included wide strata of the American society, which were interested in the policy of the arms race and the Cold War¹. In general in different Western theories the MIC was seen as a coincidence of military and economic

interests in pursuing joint goals, to the detriment of society, as a whole². Therefore the accent was made on the negative aspect of that phenomenon.

Soviet official propaganda and social sciences considered the MIC to be the part of reactionary and aggressive circles of the Western countries, and denied the existence of such phenomenon in the USSR. Soviet historiography produced a number of works on the history of the MICs in the USA, Great Britain, France, and other “capitalist” countries.

In the same years of the Cold War, the Soviet MIC was studied in Western historiography. These research works were based on Western or opened Soviet sources. Among them capital books by D. Holloway, P. Almquist and some others have to be noted. In these books, in parallel with economic and technical sides of the Soviet MIC development, problems of internal relations between its different groups in the decision-making on the military-industrial issues were enlightened³. There was also a vast literature in the West on the problems of civil-military relations, including those in the Soviet Union⁴.

It was only starting from the end of the 1980s that the history of the Soviet MIC started to be studied in the USSR, and then these studies continued in Russian Federation. It was the archival revolution of the 1990s (opening of many Russian archives to the public, partial declassification of documents on Soviet military history) which made these studies possible.

In 1996 the first specialized book on the history of Soviet MIC, based on the released documents from Russian archives, was published. This was the book of Nikolai S. Simonov⁵. That author was the first one to show economic dynamics and structural change of the complex. From conceptual point of view, this work may be attributed to the traditional “economic direction” of historiography, which identified the MIC with defense industry only.

A new characteristic feature of “archival opening” was that it produced a sort of convergence of Western and Soviet historiography. One of the results of that convergence became a collective book produced by Russian and foreign representatives of the “economic” direction «The Soviet Defence-Industry Complex from Stalin to Khrushchev»⁶. They determined subject of their research as “defence-industrial complex”, which included defence industry, its productive and research units, its labor force and system of administration, facilities and leaders. This notion differed from definition of “military-industrial complex”, for professional military, state and party leadership and some other components of the MIC were not included there.

In the recent two decades both Russian, and foreign historiography started to follow the same way in studying history of different branches of Soviet defense industry. The main period of research was the 1920s-1930s. This theme was developed in fundamental works on economic history by R. W. Davies, based on the released documents from Russian archives⁷. The author became the first one to publish the real figures showing the sharp rise of Soviet defense expenditures, connected with the course for “re-armament” taken

in the early 1930s.

Among the most significant works on the history of Soviet MIC, written on the basis of Russian archives, a book of Swedish historian L. Samuelson (translated into Russian) has to be noted⁸. The author investigated the problems of military planning and development of defense industry in the USSR in the 1920s-1930s, postulated theoretical ideas on the contents of militarization, on the two ways of development of the Soviet MIC (civil and military) and on the system of «dual planning». One of the recent research works on the history of Soviet militarization was written by American scholar D. Stone⁹. The book was based primarily on the documents of Russian State Military archive, and the core of his research became the course for rearmament of the Red Army in the end of 1920s- early 1930s, which a special stress on the role of the military in that process. These works lay primarily in the framework of “economic direction” in historiography of the Soviet MIC.

In recent years in Russia a number of works were published by M. Yu. Mukhin,¹⁰ who has investigated organizational structure of Soviet defense industry in the 1920s-1930s. For example, in his last monograph the history of Soviet aviation industry of that period was investigated from different points (evolution of institutions, problem of cadres, relations between political and economic leadership, comparison of the Soviet and German aviation industries).

Considering present historiography on the history of Soviet military industry, the author of this paper tries to avoid any kind of doubling of this literature. For example, the period of 1920-1930s in the MIC history had already been studied by many researchers - Russian, American and European. The main task of the author was to study most important, key moments in the process of Soviet MIC formation and development, the role of the MIC phenomenon in the history of the Soviet Union, in correlation with the internal Soviet policy and international relations. The core of this research is the period of the Cold War, when the MIC actually became one of the leading factors of Soviet economy, policy and culture.

According to the author's concept, these “key moments” were the following: 1) realization of the course for re-armament and creation of independent Soviet defense industry in the early 1930s; 2) “crash” militarization and preparation for war (1938-June 1941); 3) the “war economy” in 1941-1945 as the peak of militarization; 4) the main directions of the arms race between the Soviet and Western blocs in conditions of the Cold War; 5) Soviet MIC spread out of the limits of one country, and its role at the international arena; 6) attempts of reforming of the Soviet MIC in the second half of the 1980s.

Later, the main lines and stages of transformation of Russian MIC in post-Soviet times, are added.

Economic, or material-technical aspect of the MIC is presented by defense industry, like aggregate of enterprises and facilities, R&D organizations, administrative organs, involved in production of armaments.

Socio-political and cultural aspect is presented by social and political groups, connected with military production, their role in that process, their specific group mentality and way of life.

One of the main aspects of research is connected with the history of international relations. The Soviet MIC is considered to be a largest supplier of armaments to the countries of the “third world”, and the leader of the military-industrial system of the former Soviet bloc. Thus Soviet MIC went out of one single country and became a constant factor of the international relations.

The book is based on the broadest base of different sources (archival, as well as published – like collections of documents, memoirs, etc.). But the major complex of source base is presented by recently declassified documents from both Russian and American archives. As for Russian archives, the major collections from State archives (GA RF, RGAE), as well as the former Party archives (RGASPI, RGANI) concerning military history, were thoroughly searched and studied by the author of the book for about 13 years, and they laid in the basis of the book. A comparative study of both Russian and American sources (documents of CIA, military intelligence, etc.) made it possible to give more diversified, full, and objective picture of the implementation of the main Soviet military programs. In the book, personal role of the main leaders, and representatives of social groups, connected with the MIC, has been systemized and shown in practice (among them, such figures as J.V. Stalin, L.P. Beria, N.A. Bulganin, N.S. Khrushchev, D.F. Ustinov, G.M. Malenkov, B.L. Vannikov, G.K. Zhukov, V.M. Malyshev, A.P. Zaveniagin, S.P. Korolev, I.V. Kurchatov, A.D. Sakharov, and the others, have to be noted).

The mechanism of decision-making process on the military and defense-industrial matters is shown at all the main levels of the MIC. For example, the lower level is studied on the example of the activities of the system of “admittance” of defense-industrial production by representatives of the Ministry of Defense (“voennaia priemka”). The basic example of the internal unity of the MIC is of social commonality of the closed “atomic” cities.

The MIC in Historical Research Literature

The main directions in Russian and American literature are: 1) “economic”, or defense-industrial” (studied the MIC like a defense sector of national economy), 2) socio-political (studied such problems as civil-military relations, decision-making on the problems of military security, etc.). The first direction also had “scientific-technical” or technocratic group (developed the idea of the prevailing role of scientific and technical elite in the military-industrial system during the Cold War).

In general analysis of literature had shown that there had not been any complex research on the history of the Soviet MIC, in different aspects done so far. So research presented here is the first and still unique example of such work.

The Sources on the History of Soviet MIC

In this part detailed analysis of the main groups of sources, including various kinds of published data, archival sources, has been made. The author finds out and analyses the main types of archival documents, which had been just recently declassified. The role of each particular group of sources is being investigated. The process of declassification slowed down in recent years, and large groups of archival documents on the subject still remain classified. The general idea of the author is that scholar does not have to wait until all the sources are available. The level of sourced accessible is estimated as sufficient for making complex generalizing research of the history of the Soviet MIC.

Forced Defense Construction in the USSR (1930-1945)

Considering that the problem has been well-studied in Soviet-Russian and Western historiography, the author concentrates on some questions for discussion, and on the main lines and results of the development of defense industry. This part of research is based on newly declassified archival sources, including those which had been used by the other authors so far (like the Commission of Defense). Despite that the political campaign for “re-armament” evidently started in the “war scare” period in 1927, real large investments to defense industries, and their practical development started from 1931, and especially 1932. Most of so-called “big” military programs were so large-scaled (they meant “leap forward”), that they were not implemented according for the plans, but the basis of new defense industries was laid. As a result, defense industry was organized as a specific sector of the national economy (People’s Commissariat of defense industry was created in 1936). From the point of view of the “military-industrial relations”, the 1930s were characterized by the prevailing role of professional military in the process of defense industrial production.

In the end of the 1930s defense industry became diversified in the main four People’s Commissariats. The new mark of the period was well-distinguished preparation for war. Thus, a new administrative body, organized in 1938 inside the main organ on military-industrial matters – the Commission of Defense – was so-called Military-Industrial Commission. Its main functions were connected with the primarily tasks of mobilization of industry for military needs in case of war. This “mobilization” context was the feature that distinguished this Commission from the post-war bodies, which existed by similar names, but had broader functions of correlation of all the MIC activities. Mobilization plans of 1938-1939 were highly escalated, so the Military-Industrial Commission had to cut them down. Typical features of that period from the point view of the MIC development were: the most sharp rise of military production, the development of the “Eastern base” for the defense industry (the Urals, Siberia, etc.) by constructing “doubling” enterprises there;

the transfer of enterprises from “civilian” sector to the military People’s Commissariats; the development of the system of secrecy around the defense industry.

The Military Industry of the USSR in 1941-1945: The Domestic and International Aspects of Development

According to the view existing in literature, Soviet military economy showed its best during the war. Some authors argue that it was more productive and effective than the economies of most of the countries involved in World War II. Labour productivity in the USSR was higher than in Germany, Great Britain and other countries, except for the USA¹¹. Some of the modern Russian scholars called it “Soviet economic miracle”¹².

The author of this paper also proves the thesis that Soviet economic model was a kind of extraordinary “mobilization” model. The large-scale evacuation of defense enterprises to the Eastern areas of the USSR meant the gigantic shift of military production facilities to the East, and the making the new industrial base, which continued to develop in a larger scale after the war. From the point of view of the MIC development, the war period led to sharply growing infrastructure of military production in the USSR. The mobilization meant the mass transfer of most of enterprises (and not only industrial, but other civil, including administrative, cultural and the other units) to the military sector. At the same time, the creation of mass specialized military production (concentrated in a number of special People’s Commissariats) took place. Thanks to that, in 1943 the large-scale production of the armaments was achieved; the process of assimilation of the modern military models, which had been invented before the war, and their following modernization, led to the major breakthrough in the matter of achievement of the decisive advantage over the enemy in modern armaments, which became one of the main factors of the Victory.

As for the international factor, Lend-lease played a substantial role in the achievement of the joint victory of the Allies, too. Considering the discussions in literature on the role of economic aid from Western Allies (the USA and Great Britain) to the USSR, the author has arrived to the conclusion that this help was very important in many fields. An effective model of military-economic cooperation between East and West was created, which was mutually profitable for both sides.

The Military-Industrial Complex and the Cold War

In conditions of the Cold War, the Soviet military policy was more and more determined by the international factor, i.e. the arms race. The period from mid-1940s to mid-1970s was characterized by strategic competition between the U.S.A. and the USSR. The main Soviet goal was to catch up with the leading USA in the invention of the major strategic nuclear weapons. In most kinds of weapons the United States were ahead of the Soviet Union in 4-5 years (except for intercontinental ballistic missiles), but the USSR managed to catch up in the next 4-5 years. After US – Soviet strategic parity achieved, from mid-

1970s to the late 1980s, Soviet strategic stockpile continued to grow, while the American was frozen. These conditions made it possible for the Soviet MIC to get strong and to continue existing as a constant economic structure and political force.

In the first post-war years Soviet military doctrine was still based on the experience of the past war, on Stalin's concept of "constantly acting factors", and on his thesis, that nuclear weapons only could not decide the fate of the war. From 1945 to 1953 despite the crash construction of the first Soviet atomic bomb, the military doctrine and strategy was based on the development of conventional armaments. The Stalinist economic policy proclaimed the course for "demilitarization" but this proved to be a secondary side of economic development. In fact the end of 1940s saw large-scale development of new military technologies (atomic, jet, radar) of highest priority. A 1951-1955 plan marked a period of sharp rise of the defense expenditures (the military production had to rise in 2, 5 times, and in some branches, as radar, or tanks – in 4, 5 times).

In the mid 1950s Khrushchev started reductions of the Armed Forces and military expenditures, which was, however, short-lived (up to 1957-1958). At the same time, in 1953-1959 became the period of mass development of atomic and missile weapons, when nuclear missiles started to be added to the armament. In 1959 a special branch of the Armed Forces was created – The Rocket Forces of Strategic Destination. The political concepts both in the Soviet Union, and in the United States, also included "defensive myths", strategic "bluff", exaggerated estimates of military potential of each other, etc.

Organizational structure of the Soviet MIC has been finally formed by 1965 in the system of 9 ministries (plus 10 defense-related ministries). In the 1980s the Soviet MIC produced 25 % of the national GDP, $\frac{3}{4}$ of all R&D works and the best qualified personnel were concentrated inside of the MIC, which also produced a lion's share of civil machine-building production. Thus the MIC has become the central and the leading sector of the national economy. The main coordinating structures of the MIC were the Council of Defense (at the level of the highest political leadership), the Military-Industrial Commission (revived in 1957 with a much larger control and coordination functions) in the middle higher level, and the organs of military representatives, R&D facilities, the "closed cities" – in the lower level.

The atomic project set up almost an ideal model of military-economic mobilization in "peacetime" (the Cold War). The analysis of the organizational structure and the dynamics of development of the Soviet "atomic complex" is based on recently published documents, and shows that the atomic Ministry of Medium Machine-Building has become a sort of "state within a state", and was privileged even inside of the Soviet MIC.

In the late 1980s, under M. Gorbachev's "perestroika", attempts were made to restructure the Soviet MIC. The defense expenditures were cut down in 1, 5 - 2 times. The administrative reorganisation was expressed in the including of the retarding branches of "civil" economy into the system of much more well-planned and organized MIC (i.e. agriculture, civil machine-building). The other direction of reforms was the partial defense conver-

sion, which in fact included a limited number of enterprises, and did not give positive results. All these attempts of reforming were stopped by the collapse of the Soviet Union. The Soviet MIC was disintegrated, like the USSR itself. Sharp drop of the defense expenditures, and as a result – the drop of military production, and a break between the Armed Forces and the defense industry, and the former MIC turning from a powerful “super-structure” into a kind of “lobby” struggling for resources – all these were typical features of the 1990s.

The MIC of the USSR and the Countries of “Peoples’ Democracy”

The main areas of the Soviet MIC activities in the international arena were as follows: 1) the relations with the leading “capitalist” countries and blocs (primarily with the USA and NATO, in the form of the arms race);

2) the creation of the MIC of the Soviet bloc as a unified system with the organs of joint administration, planning and military command (embodied in the organs of the COM-ECON, like the Constant Commission on Defense, and the military organs of the Warsaw Pact; making of the unified system of anti-aircraft defense of the Soviet bloc, etc.); 3) the military and technical assistance to the countries of “the third world”.

The main principles of the Soviet export of armaments were based on the general foundation of the Soviet policy, which was a state monopoly for external trade. Besides, the specifics of the export of armaments was connected with the total secrecy of that area of activities, for the reasons of “state security”.

Therefore it was a special “state mediator” in the Soviet administrative system, which supervised all the activities in the field of “war trade” (at first it was concentrated in the Ministry of the Foreign Trade, then in the so-called Main Engineer Directorate, then – in the State Committee (Ministry) for External Economic Connections), which supervised primarily the economic military “assistance” to the foreign countries.

The other “channel” of the external military relations went through the Ministry of Defense. A special 10th Chief Main Directorate supervised mostly military cooperation (the command over the activities of the Chief military councillors in different countries, the elevation of military personnel, the transfer of military literature, topography maps, military films, etc.).

From the mid-1950s on, a unified system of the armaments and a unified planning of development of the defense industries started to be created inside the Soviet bloc. Different countries of “peoples’ democracy” were specialized in the production of different armaments, according for a joint plan, created in Moscow.

Military-Technical Cooperation of the USSR and the Countries of the “Third World”

The value of the Soviet military-technical assistance to the countries of the “third world” was growing. In 1955-1968 the Soviet Union provided armaments and military-technical equipment to these countries in the sum of 4, 5 billion dollars, in 1966-1975 – 9, 2 billion, in 1978-1982 – 34, 4 billion.

The military-technical cooperation was more like assistance, than like any kind of profitable “war trade”. The main principles of cooperation: the “political” assistance (the struggle for independence, the development of Communist parties in the world) was free of charge; the military-technical cooperation developed in the form of Soviet credit to the other country for 10 years, with 2% payment per year. In fact, most of these countries have accumulated a huge debt, which they never paid back to the Soviet Union-Russia.

In conditions of the Cold War, the area of the military-technical cooperation became one on the main spheres of rivalry between the USSR and the USA. The leaders of the “third world” countries widely speculated on that factor. The enormous military “aid” became one of the main factors of the collapse of Soviet economy in the end of the 1980s.

Social and Political Aspects of Development of the Soviet MIC

This part shows the “human side” of the Soviet MIC, including the role of its groups and leaders, relations, contradictions and the formation of the MIC like social and political unity, with specific mentality and interests.

The Political-Military Leadership

In the Soviet political system, the leading role of Communist Party and its leaders in all the areas was more than evident. It was expressed in the strongest way in the military and military-industrial matters, which were most strictly controlled. In the period of “Stalinism” it was the Soviet dictator Josef I. Stalin who supervised directly the most important defense projects (for example, the atomic program, the development of jet and missile techniques, radar, etc.). Besides of him, the most important figures were Lavrentii P. Beria (who led the atomic project) and Nikolai A. Bulganin (who supervised the Armed Forces and a number of programs like missiles and radar from the part of the Communist highest organ of power – the Politburo). In this system, a specific figure of so-called “political-military leader” has appeared. After Stalin, the system continued acting as a rule. All the main Soviet political leaders (Nikita S. Khrushchev, Leonid I. Brezhnev) were in

general following the line of strict personal control over the defense matters.

The main Party organs, responsible for defense matters, were the Department of administrative organs of the Central Committee (which supervised the Armed Forces), and the Department of Machine-building (after 1953 – the Department of defense industry). Besides the economic management, the Central Committee decided the crucially important question of selecting personnel for the leading posts in the defense industry and the military command.

On the lower level, however, the local party organs were not allowed to interfere into the research and production activities of the “closed cities”, subdued to the administrative organs of the atomic complex.

As for the security organs, NKVD-MVD (the organs supervising “the internal matters”) played a great role in creating of Soviet defense industry from 1930s to mid 1950s, when the system of forced labour was liquidated. MGB and KGB (the organs of state security) supervised mostly intelligence and counter-intelligence works in the military and defense-industrial “enclaves”, guarded the objects of “special importance”, the nuclear devices during their transportation, etc. The leading personalities from the security organs, responsible for defense matters, were like A.P. Zaveniagin, P.A. Sudoplatov, P.Ja. Meshik, A.N. Komarovskii, I.A. Serov.

It is needless to mention, that the professional military and some defense industrial managers working for the Soviet MIC, often had conflicts with the representatives of security organs, which interfered in their practical activities.

The Nucleus of the Military-Industrial Complex: The Military, Industrialists, and Scientists

The military branch was the cornerstone of the Soviet military-industrial complex. The uppermost echelon was composed of marshals and generals of the professional military elite. It was this part of the military as a social stratum of Soviet society which became most involved in politics. This particular group will be the topic of discussion here.

The Soviet military were traditionally subdued to the political leadership. After the Great Patriotic war the role of the military in society inevitably grew. That was one of the main reasons for the massive “purges” against them in the late 1940s – early 1950s. A number of processes took part against different groups of the military (the “aviation affair” of 1946, the accusations against one of the most famous military leaders of World War II Georgii K.Zhukov, process against Admiral Nikolai G.Kuznetsov and the other Navy chiefs in 1948, the “affair” against “the artillerists” of 1952).

Some of the military commanders played a substantial role in the development of new armaments (for example, Marshals Nikolai D. Iakovlev and Mitrofan I. Nedelin – in the

progress in missile techniques). Despite the accusations against him as a supporter of “obsolete conventional armaments”, Marshal Zhukov himself contributed to the creation of nuclear missiles and their adding to the armament.

In the first post-war period Soviet institutions were greatly “militarized” (i.e. a great number of professional military worked in civilian institutions). 1000 generals and officers were sent right after the war to the Ministry of Armaments. As an example of such military-industrial representative, the biography of Vladimir M. Riabikov is presented, as a typical figure from the part of the “military admittance” (“voennaia priemka”) - the biography of Alexei S. Kalashnikov.

The evolution of the Soviet military elite from 1930 to the post-war period consisted of slowing down of theoretical level, depth and independence of the military thought, the growing role of staff commanders, which had never taken part in a real war. That was natural in the conditions of the long-standing Cold War period, and led to the growing dependence of the professional military from the political leadership.

The most influential group of the Soviet MIC in the conditions of the Cold War became in fact the defense-industrial managers. Its social structure was formed together with the defense industry itself in the 1930s. A new group of industrial leaders was promoted on the wave of “purges” in the end of the 1930s. It was the group of young and technically educated industrial managers (like Dmitrii F. Ustinov, Viacheslav A. Malyshev, Mikhail V. Khrunichev, etc.), which came to lead the new defense industry at the face of approaching war. Most of these people were personally devoted to Stalin, for he was the one to “promote” them.

The main lines and the specifics of this core group of the Soviet MIC is shown in details at the example of the biographies of one of the bright representatives of the generation of “marshals of industry” – Malyshev, and of the most powerful “grey cardinal” of the defense industry Ustinov.

In the post-war period the scientific and technical achievements were laid in the foundations of the world policies and economies. Therefore the role of technical and scientific elite inside the military-industrial systems was growing all the time. As for the Soviet case, scientists, engineers and researchers were among the most noticeable groups of the military-industrial complex.

By 1960 there was a strong military-industrial «lobby» in the Academy of Sciences, concentrated inside the departments of technical sciences and physical sciences. In May 1962 this lobby supported the election of the new President of the Academy of Sciences – Mstislav V. Keldysh, who was connected with military works. The next President of the Academy of Sciences in 1975 became one of the leading Soviet atomic physicists Anatolii P. Aleksandrov. The best scientific and technical personnel, and most of the achievements in the science and technology in the Soviet Union, appeared to be connected with the MIC.

The role of the scientific and technical elite in the Soviet system was restricted to the level of technical expertise. A scientist could only give the policy-makers advice on the technical aspects of a given weapons system, but never on any substantial changes of the political course. The leading engineers like Sergei P. Korolev gained monopoly control over the R&D and production facilities. However, the strict Party control limited the domain of «chef constructors» to their scientific and production units (nauchno-proizvodstvennyye ob'edineniia). The high ranking engineers of the military techniques were perhaps the most «top secret» group within Soviet society. Personal biographies of such leaders of military science and technology, as Iulii B. Khariton, Igor B. Kurchatov, Sergei P. Korolev, Andrei D. Sakharov, Mikhail K. Iangel and the others are presented.

The composition of the Military-Industrial Commission (VPK), which was the main administrative organ of the Soviet MIC from the late 1950s to 1980s, showed the relative role of different groups inside the MIC. 50 % of the VPK apparatus came from the ministerial leaders, 10 % - from the State Planning Commission (Gosplan), 6 % - from the Ministry of Defense, 34 % - from the research and development institutes, the construction bureaus and enterprises. Thus, the most numerous were the leaders of the defense industry and the scientific and technical elite, the military professionals consisted much smaller per cent.

The Military-Industrial Complex: Contradictions and Unity

A specific social unity of all the groups connected with the MIC was formed in the framework of so called “closed cities”, which existed in the system of the Soviet atomic industry. The specifics of life “under the double iron curtain”, together with social and material privileges, have formed a sort of collective mentality on the lower level of the MIC.

There were several levels of secrecy around the military-industrial objects in the USSR. The close cities were at the highest level of secrecy. However, some partly closed enterprises, which were situated in the midst of non-secret infrastructure of the ordinary, “opened” cities, constructed a specific form of relations between secret and not secret zones.

The system of the Soviet MIC in general could not avoid contradictions between different interest-groups. In the second paragraph, the following types of conflicts are shown: 1) The inter-group contradictions, which took place between the leaders of various institutions of the MIC – chief constructors, administrative personnel, party organs, military representatives, scientists. In these conflicts, the discussions on the questions of principle closely interweaved with personal rivalries, ambitions, etc.

2) The contradictions between different departments inside the related branches of the MIC. Inside the MIC, a dualism between a customer (the military) and a producer (the defense industry) inevitably took place. This sort of dualism is shown on the example of the discussions between the Air Force command and the Ministry of Aviation industry

leaders. Commander-in-Chief of the Air Force K.A.Vershinin wrote to Stalin that the Air Force was subdued to the interest of Ministry of aviation industry and its construction bureaus (KBs), the Ministry hold “monopoly prices” for military production, which were in 1,5-2,5 times lower than those calculated by the Air Force. He asked to create a single coordinating centre for aviation (on the pattern of the American NASA).

3) The contradictions between the different branches of the MIC. The most classical experience was the struggle for control over nuclear weapons between the military and industrial leaders. At first nuclear charges were put under the supervision of the First Main Directorate (then the atomic Ministry of Medium Machine-Building), then they were removed to the authority of the Ministry of Defense, to its 12th Chief Main Administration for nuclear armaments (the same transformation happened in the USA)

However, by the time of Brezhnev’s rule most of these contradictions were more and more overpassed by the unity of interests between all the groups, which worked together in the system of the Soviet MIC. The general scheme of the decision-making on military and defense-industrial matters was elaborated.

The Soviet MIC became the core structure of the Soviet economic and social infrastructure. All the Party- state political leaders (before Mikhail S. Gorbachev) conducted the Soviet policy primarily in the interests of the MIC development, which corresponded with the interests and prestige of the Soviet state at the international arena.

Russian Defense-Industrial Complex in the Post-Soviet Period

After the collapse of the Soviet Union the MIC entered the period of deep crisis. It has lost the leading qualities in the economy and become a sort of lobby group struggling for the interests of the military and defense industrial sector. The reforms in military-industrial sector had to correlate the scale of the MIC with the real economic potential and interests of security of Russia. These tasks had to be decided in conditions of sharp deterioration of the economic situation. Russia has inherited 85 % of military potential, but just 60 % of GNP of the former USSR. By 1997, when the military reform in fact started, Russian Federation had only 25 % of the Soviet GNP, while the country still kept 35-40 % of the Soviet Army and Navy. By 1997 sharp reduction of defense spending led to the cut of defense industrial production for almost 90 % as compare to 1991.

“Defense conversion” course produced a number of programs, which appeared to be unsuccessful in general (two State programs of conversion of the defense industry for 1993-1995 and 1995-1997, Federal program for a special purpose of restructuring and conversion of defense industry for 1998-2000 (plus 2001), Federal programs of development of defense-industrial complex for 2002-2006 and 2006-2010).

In these hard conditions, a sort of “a break” between military organization and defense

industry of Russia appeared. As a result of privatization, forms of ownership in defense industry of Russia had radically changed. By 1997 about 800 defense-industrial enterprises were in joint-stock and private property; the State organs supervised around 2 000 enterprises, 400 among them were in full State property, in 500 State had “golden share”, in 500 – control share.

Since 1996-1998 the State policy shifted towards restructuring of the MIC, and the creation of diversified integrated structures. At the same time, the reform of the Armed Forces of Russian Federation took place, first of all in the direction of cutting down the number of personnel. In 1992-1997 the Armed Forces were cut down to 2, 8 billion (in the end of the 1980s the numbers were 4,2 billion), by 2000 – to the level of 1,2 billion. The system of civilian control over the military started to develop. The first “civilian” (non-military) Minister of Defense was Sergei Ivanov, since 2007 it is Anatoly Serdiukov.

Cutting down the military potential, Russian Federation changed its military doctrine, choosing nuclear deterrence as one of the main mechanisms of its national security after the end of the Cold War. The State program of armament for 2001-2010 was aimed at the preservation of military potential on the main directions of technical progress, mobilization facilities, with the high level of financing of R &D.

Since 1999 defense industry was financed at higher level, as compare to the previous period, but defense production was oriented more on exports, rather than on the supply of the Armed Forces of Russia. The volume of Russian exports of armaments was growing sharply: in 1998 – 2 billion dollars, in 1999 – 3, 5 billion, in 2000 – 4 billion, in 2002 – 4, 8 billion, in 2009 – 8, 8 billion USD. By 2010 it reached 10 billion USD.

At present the share of Russia in world supplies of armaments grew to 13-15 % in different kinds of armaments. The number of “partner countries” of Russia in the arms trade grew up to 60.

Since 2006 a principally new period of development of Russian MIC started. The State order for armaments was restored (thus defense industry was more oriented on the supply of Russian Armed Forces), the central organ of coordination of the military-industrial complex - the Military-industrial commission - was reinstated, and gained great powers again. The functions of the Commission are like the following: setting up prices for defense production; implementing State defense order; control over quality of armaments produced; making contracts for the production of armaments and military techniques; elaboration of State program of armaments (for 2011-2020)¹³.

Nowadays the State takes more and more control over the large defense companies, especially in the key branches like the atomic, missile, electronics, naval construction branches. This is the sign of the rising priority of the defense sector, and substantial change in governmental policy, with the use of the Soviet legacy of planning and control of the State over the sphere of the national security.

In 2010 a new stage of the administrative military reform started in Russia. The main directions of the reform are:

- Creation of 4 military districts (instead of 6) = 4 United Strategic Commands
- Western military district includes the former Moscow and Leningrad military districts (Headquarters in St-Petersburg), Northern Fleet and Baltic Fleet, the 1st Command of Air Forces and Air Defense (VVS and PVO)
- Central Military District includes the former Volga-Urals and partly Siberian military districts, 2nd Command of VVS and PVO, 6th Territorial Command of Railway troops (Headquarters in Ekaterinburg)
- Eastern Military District includes part of the former Siberian military district and Far East military district, 3rd Command of VVS and PVO (Headquarters in Khabarovsk), Pacific Fleet
- Southern military district includes North Caucasus military district, 4th Command of VVS and PVO, Railway troops (Headquarters in Rostov-on-Don), Black Sea Fleet, Caspian Fleet.
- One of the aims of this reform is increasing the role of the Southern District, which is close to the areas of military and terrorist threats (in 2011, there will be 214 military trainings in the North Caucasus - 7 times more than in previous year).

The main reasons for military reform were, first of all, due to the lack of coordination:

- Previously 6 military districts existed separately, Commander of military district had the authority over the Land Forces only;
- There were no organs of unified command over land, air and naval forces, and no commanders qualified for such operations;
- In order to make joint operations involving the other forces some temporary Commands had to be created, with the low level of authority and preparedness;
- 4 Armies of the Air Forces and Anti-aircraft defense (VVS and PVO), which existed previously, were not correlated with the military districts: territorial borders of military districts did not correspond the borders of responsibility for the air defense.

The advantages of the new system of 4 military districts are said to be as follows:

- The new United Strategic Commands (USCs) unify all the military forces in their military district;
- The Commander of military district commands all the troops and is personally responsible for regional security;
- The USC can quickly react to any threats and challenges, implementing joint land, sea and air operations;
- Inter-group groups of forces can be prepared in peacetime without any additional reconstruction;
- The new principles of dislocation of troops are introduced: they are near large cities, closer to the main means of communication and test ranges;
- According to the new rules of combat readiness, all the levels of the new military districts reach combat readiness in 6 hours;
- The raising mobility of forces¹⁴.

The new line of military reform for 2010-2011 was introduced in Russian President Dmitrii Medvedev's address to the Federal Assembly in December 2010:

- Strengthening air and space defense of the country, by unifying the existing systems of anti-aircraft and anti-ballistic missile defenses, the systems of warning on missile attack and control over space; subdued to a unified strategic command {planned to be done by 1 December, 2011};
- Modern Russia needs modern Army and Navy, compact and mobile troops, armed by the most advanced armaments and high-class specialists. It is necessary to pay all the obligations to the military people, first of all, to decide housing problem;
- The Army should get rid of all non-profile functions, which have to be passed to civil organizations {auto-sourcing – the form of civil military cooperation= transfer of side functions like housing, food supply, repair of military techniques, etc., to civil specialized companies};
- Development of international cooperation in the sphere of security, namely dialog between Russia and NATO on the construction of European ABM system; Russia's set up the initiatives on the European security Treaty;
- Development of "economic diplomacy": creation of joint ventures, influx of foreign goods to Russia, creation of new jobs, and simplification of the visa regime;

- According to these plans, from 2010 to 2020 Russia will spend 2,8 per cent of GDP for the national defense annually;
- Reforms on the social sphere, concerning the military: from 2012 on, the basic salary of those at military service has to increase in 3 times;
- The rise of prestige of military service by contract¹⁵.

As regards of the position of defense industry in the 2000s, it was characterized by the upward tendency. One of the main features of that period was the growing role of State in administration and support of defense-industrial sector. The important fact was restoration, at least partial, of unified system of State order for armaments, military and special techniques, in the form of a special Federal agency. In 2005-2009 the volume of State order for armaments grew in 2,5 times.

In 2009 state support for defense was totally 93 billion rubles.

The forms of such support were the advancement of works implemented according to the State order for armaments in the sum of 80 per cent of total sum of contract; subsidizing defense enterprises in their credit payments, etc.

In general, the total volume of industrial production of defense-industrial complex in 2009 (as compare to 2008) grew in 4,1 per cent, and military production grew in 13 per cent.

One of the most important new tendencies in Russian military-industrial policy is gradual transition from so-called “repair system” to purchase of new armaments (in 2009 only 13 per cent of state expenditures went to “repair” – previously it was 40 per cent).

Some of the new principles were expressed in the State program of armaments for 2010-2020: 1) 20 trillion rubles to be spend for re-armament; 2) Preserving combat readiness of Strategic nuclear forces; 3) Creation of perspective system of guidance on the basis of modern systems of information and telecommunication; 4) Guaranteed access to space, full-scale development of space techniques, and means of air and space defense; 5) Purchasing the means providing strategic mobility of troops; 6) Development of armaments and military techniques of general destination¹⁶.

The largest “integrated structures” of Russian defense industry are state companies, so the President of Russian Federation gave the order to Commission on modernization to elaborate the program of innovative development of these structures.

In terms of actual modernization of armaments, according to State program of armaments-2015, some new complexes were already created:

- Missile complex of strategic destination “Yars” (the first regiment armed

with these missiles, was put on duty in Teikovo missile unit (Ivanovskaia oblast) on 5 March, 2011)¹⁷.

- Nuclear powered submarines of “Iuriii Dolgorukii” type
- Su-34 fighters
- Antiballistic missile systems C-400
- Missile complexes “Iskander-M”

Plans of modernization in the military-industrial sphere for 2010-2020 were also expressed by Chairman of Government of Russian Federation Vladimir Putin during his visit to the center of naval military construction in Severodvinsk, that took place also in December 2010. According to his words, the main lines of development of defense industry included:

The increase of share of modern items of armament up to 30 per cent - by 2015, and up to 70-100 per cent – by 2020;

New armament will be procured not in single items, but in complexes;

According to the State program, 79 per cent of all finance will go for purchase of new high-technological armaments¹⁸.

The final variant of the State program for armaments was confirmed by President Medvedev’s Ukaz of 31 December, 2011. According to the program, the first priority is still the development of Strategic nuclear forces of Russia. 10 per cent of expenditures go for Strategic Nuclear Forces (modernization of land forces - Strategic Rocket Forces, construction of 8 nuclear submarines, modernization of strategic aviation group).

Second priority would be so-called “strategic defensive forces” (unified radar system, S-400 antiballistic missile complexes, defensive systems, based in space).

The third main area would be the development of highly accurate weapons (“Iskander-M” missile complexes and other systems)¹⁹.

As compare to the Soviet MIC, modern Russian complex evidently suffers a number of “system problems”. In 2010 about 30 per cent of State order for armaments was not accomplished. According to Minister of Defense of Russia Anatoly Serdukov’s report to the President in the early March of 2011, among the “undelivered items” were some types of ships, submarines, training aircraft and armored techniques. One of the largest Russian unified industrial corporations - “Roskosmos” - did not accomplish State order on space techniques for 2010, and was criticized for that by Chairman of Military-industrial commission Sergei Ivanov²⁰.

The reasons for that are quite numerous: low effectiveness and productiveness of Russian defense-industrial enterprises (70 per cent of equipment is obsolete), the growing debt of the Ministry of defense, etc. Some analysts also complain of the lack of coordination from the part of the Military-industrial commission, the authority of which is substantially lower as compare to the Soviet time.

In recent years Russia simultaneously used the policy of purchase of some types of armaments abroad. One of the largest recent deals is Russian-French agreement on the construction of military ship 'Mistral' (signed in January 2011). "Mistral" helicopter-carriers are destined to deliver military personnel, military techniques to combat areas, to provide their landing with the use of landing vessels and helicopters, and to coordinate operation using powerful means of reconnaissance and combat commandment.

Cases like that let some Western analytical sources argue that Russia would be "attempting to skip a generation in research and development (R & D) terms by making acquisitions of high-tech military hardware from abroad"²¹.

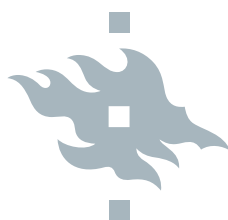
In any way, despite of many difficulties, typical for Russian economic and social system "in transition", nowadays the military-industrial complex of Russian Federation experiences the period of relative revival and upward development.

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