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Russia-NATO Relations: Between Cooperation and Confrontation

Alexander Golts

When business starts out on the wrong foot, it is difficult to get on the right course later. Relations between the newly independent Russian state and the North Atlantic alliance began with a simple misunderstanding.

Boris Yeltsin's first message to NATO headquarters in 1991 contained a typographical error. A typist missed the negative particle "not" in a sentence underlining that the new Russian state did not question an immediate entrance into the alliance. Having no idea how to react to Moscow's unexpected initiative, NATO officials were plunged into a panic. Over the past 14 years this mutual misunderstanding has turned into a kind of tradition, a "calling card" for relations between Russia and NATO. And the advent of Vladimir Putin's leadership has by no means brought clarity to these relations.

Without a doubt, however, it should be admitted that under the current Russian president, relations have been brought to a much higher level than with the preceding one. At the time Vladimir Putin was declared Yeltsin's successor, relations with NATO were at a standstill. After ignoring objections from Russia, NATO launched military operations in Yugoslavia in 1999 and as a result Moscow recalled its representatives from the alliance, practically freezing all contact. Moreover, the capture of the Prishtina airport in Kosovo by Russian Special Forces nearly turned into a direct military confrontation with the armies of the alliance.

When he came to office as president, the former KGB officer did not instill any hopes for improvement of the situation. What is more, under the direction of Putin, the Russian Security apparatus has developed directive documents specifying NATO as one of the main security threats to the country. The authors of the directive were obviously influenced by NATO's decision to accept former socialist countries and the operations in Yugoslavia. "Raised to the rank of a strategic doctrine, the transition of NATO to active use of (military) force in actions outside the zone of responsibility of the block and without the sanction of the United Nations Security Council, is fraught with the threat of destabilization of all strategic conditions in the world," affirms the Concept of National Security, the first document signed by Putin as president. Three months into office, he approved the Military Doctrine, which treated "the strengthening of military-political blocks and

unions, first of all expansion of NATO to the east" as the main security threat to the country.

More unexpected, however, was the approach taken by Putin, shortly after becoming president. "Why not?" he replied to the question from a British journalist on whether he conceded the possibility of Russia joining NATO. Preparing for a sharp turn in foreign policy, Putin then declared, "Even raising the question of NATO as an enemy is destructive to Russia." Furthermore, the Russian president reacted immediately after the September 11 terrorist attacks against the USA as he instantly understood that the new situation afforded a major shift in Russia's position, providing it with an important place among the leading nations of the world. To the surprise of his closest colleagues, the president immediately expressed support for the United States and only a few days after Defense Minister Sergey Ivanov had declared that Russia "even theoretically cannot envision the accommodation of NATO bases within the territory of the CIS countries," Putin personally called the heads of Kyrgyzia and Uzbekistan to convince them of the necessity to grant NATO installations.

NATO's response was very rapid. In a special letter at the end of 2001, British Prime Minister Tony Blair called for the creation of a new organization responsible for European and world security. In May 2002 at the NATO-Russia summit, which took place at the Practica di Mare Air Base near Rome, a declaration founding the NATO-Russia Council (NRC) was signed. The declaration asserts that during sessions of the Council, all participants will act in a "national capacity" to push forward discussion of stated problems delineated within the competence of internal organs (i.e. the struggle against terrorism, the settlement of crisis situations, strengthening means for non-proliferation of weapons of mass destruction, the arms control and the strengthening of measures of trust and cooperation in the sphere of creating regional systems of antimissile defense - ADS in battlefield conditions - water based rescue missions, and also cooperation in the matter of military reform). These discussions will be conducted from scratch, without the preliminary elaboration of a uniform NATO position.

Moreover, all preliminary discussions are required to be conducted within the framework of a special Preparatory Committee having the same status as the NATO

Political Committee, one of the most important bodies of the North Atlantic alliance where major decisions are prepared. Committees and working groups for the preparation of joint decisions have also been founded. In this way, Russia has an opportunity to participate in the decision-making process of NATO in the capacity of a partner without becoming a member.

At the present moment, relations between Russia and NATO have to all appearances settled down. A NATO information bureau has been opened with a military representative in Moscow. Russian representatives now work in the North Atlantic alliance headquarters in Brussels, as well as at the NATO Joint-Command Headquarters. Sessions of the NRC, generally timed to coincide with sessions of the NATO Council, are held at the Defense Ministers and foreign affairs level. These are not simply ceremonial meetings. For example, in the autumn of 2002, NATO and Russia managed to get through a potentially serious crisis relating to a NATO Council session in Prague in the North Atlantic union where seven Central and Eastern European countries were invited at the same time. Among them were Lithuania, Latvia and Estonia. NATO had crossed over the “red line” delineated much earlier by Evgeny Primakov. In 1996-1997 when Moscow and NATO representatives discussed conditions for agreements under which expansion of the block could be made, a categorical requirement was that under no circumstances would former republics of the USSR become members of the North Atlantic alliance. Nevertheless, even though the Baltic States have since become members of NATO, the Russian reaction was more than calm.

Cooperation with the alliance at a practical level is still developing. In 2005, fifty different activities were conducted – from a wide variety of seminars and conferences to (joint) military exercises. Their purpose was to provide operative compatibility between NATO and Russian divisions in the most diverse operations - from search and rescue on the sea to peacekeeping. In Russia a special peacekeeping unit has been formed, the preparation of which was of great interest to NATO command. Next year ships of the Black Sea fleet will begin joint patrols in the Mediterranean Sea with vessels of alliance countries participating in NATO operations.

On the other hand, it shouldn't be dismissed that many Russian officials regard the North Atlantic alliance with suspiciousness, and at times with undisguised animosity. When asked by a journalist to assess the cooperation between Russia and NATO in an interview with the Spanish newspaper El Pais, Defense Minister Sergey Ivanov abruptly stated, “Five years ago it would have been impossible to have imagined the progress which we have achieved in our relations today; nevertheless, the integration of military potential does not seem to me realistic. In the 1990's we

cooperated in Kosovo. Yet today I do not see regions where we can cooperate in a similar way. Iraq is out of the question. In Afghanistan, for historical reasons, it is also impossible, though we both provide military aid to this country.”

It is difficult to believe that Sergey Ivanov does not remember, for example, the planned joint Russian-NATO patrol in the Mediterranean or about the Russian offer to create a joint missile defense system for the continent and many other combined programs. Simply put, Ivanov evidently has faith in a certain aggressive posture of NATO and cooperation with the North Atlantic alliance seems to him completely senseless. Russian generals are in solidarity with him as well. Ivanov had not finished proclaiming the impossibility of cooperation with NATO when chief director of the Center for Strategic Research of the General Staff Konstantin Sivkov also considered it necessary to bring up the alleged military threat posed by the North Atlantic alliance: “Today, the NATO block is capable of exerting strategically significant pressure on the interior of Russia. In other words, for example, US tactical aircraft, operating from forward air bases of the alliance, are capable of reaching Moscow, Tula, Kursk, or other cities in the Central European parts of the country.”

Russian Air Force Commander General Vladimir Mikhailov reacted in an astonishing manner concerning the incident of the Russian fighter that appeared in Lithuanian air space after having lost orientation. The general declared that this plane had “opened” the NATO air defense system and shown its weakness. This is how the Russian military leader still looks at NATO, as if it is some potential opponent whose air defense systems should “be opened.”

In Brussels they prefer to see such pronouncements as some kind of relics from the ‘cold war’. But in reality, the hostility towards NATO has a quite rational character. The crux of the matter is that despite the uncountable declarations on cooperation, Russian military authorities have primordially categorized the alliance as playing the role of a so-called “global adversary.” Such an opponent is extremely necessary for Russian generals as it justifies the preservation of a massive mobilized army. The opponent should be so powerful that offering resistance is only possible if the Ministry of Defense can arm 6-8 million men. At the same time, the military today does not risk directly naming any concrete country as an enemy. The result is that NATO, outside any connection to real politics, has turned into a kind of euphemism sometimes indicating the USA, sometimes the EU and sometimes the West as a whole.

This ‘residual’ attitude can also be found in the document “Relevant Tasks for the Development of Armed Forces of the Russian Federation,” published in October 2003 (sometimes called the ‘white book’ by the Defense Ministry) where on one page it reads that Moscow must

develop military cooperation with the United States, and on another, that NATO, where the US plays a leading role, pursues an aggressive foreign policy which should be repulsed.

And this comes at the same time that NATO, as a result of transformation, is even more dissimilar to a supposed global enemy, night and day preparing an assault on Russia. The rapid expansion of the alliance owing to Eastern European states which the Russian General Staff sees as a security threat has actually prevented forces of the alliance from carrying out large-scale operations on the continent. In fact, by admitting the new states, NATO military leaders have given up on attempts to achieve conformity to a single standard among the armed forces of all member-states. This, in turn, has rendered NATO command unable to utilize the complete manpower of the armies of member-countries in military operations.

In contrast to the complex attitudes within the Russian military establishment, leaders of the North Atlantic alliance have drawn the reasonable conclusion that since the dissolution of the threat of a Soviet invasion, the need for such large scale operations is no longer relevant. The policy of protecting the airspace of the Baltic countries by only two pairs of fighters can be seen as an indicator to this change in attitude. That the point of view of Russian strategists appears to be either monstrous nonsense or manifest treachery is a subject widely discussed. Namely - to cease to put before the armed forces the task of protecting national territorial integrity. Instead, NATO countries are more and more focused on the development of so-called 'niche capabilities,' which consist of the preparation of separate select parts and formations from which, if necessary, it would be possible to form expeditionary forces. It is abundantly clear that because of their small number, these forces cannot in any way be considered a tool of aggression against Russia.

The Russian military has oriented itself for the same scenario of combat operations since 1999. According to this outlook, aggression against Russia is assumed to be in progress. In the first stage, the enemy is resisted with conventional forces. Russia and her allies deflect air attacks from the enemy's superior forces and simultaneously conduct mass mobilization. However, because of the

deficiencies in conventional forces, stopping the aggressor it is not possible. And so then strategic bombers deliver a limited nuclear attack on the opponent's sparsely populated areas. If said strike is deemed inefficient, then a nuclear strike with the complete force of the triad commences. (This year it was symbolized by the launch of a missile from the "Yekaterinburg", one of Russia's nuclear ballistic missile submarines). Beyond this, the General Staff doesn't have any plans; such a reaction would mean the end of the world.

Perhaps the main stumbling block in cooperation between Russia and NATO is that each of the partners is building an essentially different armed forces orientated on different conflicts. It is no accident that there is practically no cooperative development in the sphere of military reform - in fact Russian generals have asserted that military reform has already successfully been completed.

The second reason giving rise to conflict between the alliance and Russia is that former Soviet republics - Ukraine, Georgia and Moldova, have established entering NATO as a major foreign policy task. Domestic politicians verbalize their irritation with this "withdrawal" from Russia, arguing that it is paramount to a military threat. In their opinion, the entry of these states in NATO will necessarily be bound up with the establishment of foreign military bases in close proximity to Russian territory. From this point the question is already about the flying times of enemy missiles and planes.

Meanwhile, as with former allies of the USSR under the Warsaw Pact, former Soviet republics aspire to membership in the alliance not because of security reasons. Entry into NATO is above all an important step on the way towards integration into European structures. It is indicative that a country-candidate for NATO should meet not so much military, but rather political criteria. Such a state should be a democracy and there should be civilian control over the military sphere. It is precisely this that guarantees integration into the military community of civilized states and the former Soviet republics believe that they can satisfy these conditions. On the other hand, Russia on numerous occasions has declared that it does not intend to join NATO, an indication that it has decided NATO criteria are unacceptable.

The Russian Aircraft Industry: Contours of a Sesquipolar Model

Konstantin Makienko

Poles of Consolidation in the Russian Aircraft Industry

The topographic formation of the contemporary Russian aircraft industry has come about as a result of the simultaneous development of two processes: government efforts towards the consolidation of the industry and “spontaneous”¹ restructuring, resulting from mergers and acquisitions initiated by various economic entities.

Within the first trend, state support has resulted in the establishment and development of the Sukhoi and MiG corporations. The achievement in laying the foundation of these two corporations is due primarily to the management of the companies (to Mikhail Pogosyan and Nikolay Nikitin, respectively). Further success of their efforts, however, would have been impossible without active government support. Yuri Koptev, head of the Russian Aerospace Agency, most likely played a key role in the founding of Sukhoi as did then Deputy Prime Minister Ilya Klebanov in the establishment of MiG. In the “spontaneous” re-structuring trend, the main development has been the process of building up the Irkut Corporation on the basis of the Irkutsk Aircraft Production Association (IAPO) and the further expansion of this company through a broad alliance of design bureaus and manufacturing plants that hereafter shall be referred to as the “Irkut Alliance.”

It is now clearly evident that the Russian government has decided in favor of creating a ‘Unified Aircraft-Building Corporation’ (UABC), which will consolidate all the aircraft manufacturing activities of the country into a single framework. The practical implementation of this concept, however, presents serious organizational, legislative and political obstacles.² The creation of UABC falters partly on the objective complexity and unprecedented tasks involved in such an enormous undertaking, and partly due to the extremely poor quality of government management of the industry. It would appear that even if the necessary documentation for the establishment of UABC, (the Presidential Decree, and the corresponding Resolutions of the government and necessary directive orders) is accepted in the near future, this will not yet mean the success of this courageous undertaking. Even according to the planned schedule for its foundation, the creation of UABC should be completed no earlier than 2007, and keeping in mind the inevitable delays,

this could be further delayed to an even later date. The new government that will most likely be formed on the eve of presidential elections near the conclusion of 2007 will probably have a different vision for restructuring the industry. As recently as two years ago, from the moment of the resignation of Deputy Prime Minister Ilya Khlebanov and the appointment of Boris Alyoshin, a revision of the conceptual approach regarding the consolidation of the aircraft industry had already taken place. There is no guarantee that another revision will not take place after Mikhail Fradkov steps down from the government.

Assuming the slowest pace for the establishment of UABC and a high probability for the revision of the concept in the future, the natural course of events reveals two poles opposed in conditions of uncompromising bureaucratic, political and market competition. These poles are the Irkut Alliance and Sukhoi holding.

The largest and as it is now stands, the most perspective of the two poles is centered around the Irkut Corporation, which has recently bought controlling shares in two design bureaus, the Yakovlev and Beriev. After naming Alexey Fyodorov head of MiG Corporation, it now appears MiG is connected with Irkut, although in the unusual form of personal ties between the managers appointed by the state in one company who at same time own shares in the other. The new structure of the board of directors of the Sokol Aircraft Production Facility in Nizhny Novgorod, chosen in June 2005, in which four out of eleven members are representatives of MiG and a fifth from Irkut, testifies that the Irkut Alliance has also penetrated the plant. The Ilushin Company is also within Irkut’s sphere of attraction. Currently Ilushin is connected with Irkut in a joint effort concerning the Multirole Transport Aircraft (MTA). However this relationship is not very dynamic. After the addition of Tupolev to the MS-21 program, in the orbit of Irkut the Tupolev conglomerate was also drawn in. All design bureaus have thus been drawn into the Irkut Alliance with the exception of Sukhoi. Even a production facilities in the European part of the country (Sokol) and in Siberia (the Irkutsk Aircraft Plant) are part of the alliance. The only element this structure needs to be complete is a factory making civil and military transport aircraft. The most interesting acquisition to fill this gap would be either the Voronezh Aircraft Production Stock Company (VASO) or the Ulyanovsk based Aviastar, both of which offer a

combination of high technological equipment and good location.

A second pole could be based around Sukhoi Holding. This company, as a major asset, has the foremost Russian design bureau and receives state support for the Russian Regional Jet program (RRJ). These factors provide Sukhoi with the potential for independent development and enable the company in principle to ignore the spontaneous consolidation processes. Until recently Sukhoi had the opportunity to create an alternative to the Irkut Alliance, having acquired the Tupolev design bureau and undertaking efforts to join a series of factories of the Tupolev production cooperative - Aviastar and the Kazan Aircraft Production Association (KAPO). It should be noted that the potential of Sukhoi is perfectly complimented by the potential of the Tupolev Conglomerate. The absorption of Tupolev would allow Sukhoi to manage the park of Tu-134 and Tu-154 aircraft and

this, in turn, would serve as an additional instrument to counteract the penetration of foreign producers of regional and short-range aircraft on the Russian market. Besides this, Sukhoi would enter upon the realm of the Tu-204 family of aircraft - the only planes among the Soviet heritage that have good sales prospects.

There are indications that in May and June of 2005 Sukhoi undertook measures for an unfriendly takeover of the Tupolev Design Bureau. It would appear that this very attack served as the reason for Tupolev Corporation's unexpected entrance into the MS-21 project (headed by the Yakovlev Design Bureau with the Ilushin Corporation as the other major participant) declared during the MAKS-2005 air show.³ The MS-21 project is mentioned on the Irkut Corporation website in the section about perspective projects.⁴ From this it would seem that through the MS-21 project Tupolev is being drawn into the gravitational field of the Irkut block. In this case Sukhoi remains alone, and in the

Table 1. Schematic Comparison of Poles of Aircraft Industry Consolidation

	Sukhoi	Irkut Alliance
Structure	Sukhoi Design Bureau, KnAAPO, NAPO, and Sukhoi Civil Aircrafts Company	Irkut Corporation, Yakovlev Design Bureau, Beriev Design Bureau, MiG Corporation and Sokol Aircraft Production Facility
Pole characteristic	Vertically integrated enterprise	An alliance of diverse economic entities united through participation in capital, technological interdependence, and personal ties among management personnel
Origin of Development	Arose within framework of Russian Defense Industry Re-Structuring and Development Programs for the period 2002-2006	A "spontaneous" development and re-structuring within the Russian aircraft industry
Corporate Form	100% state owned Open Joint Stock Company	A combination of state entities (FSUEs), private and state-private enterprises
Prospects	The injection of private capital while a controlling share block remains under state control is possible	Partnership between the state and private enterprise
Current Product Range	Su-30MK, Be-103	Su-30MKI/MKM, Be-200, MiG-29SMT/M/M2/K, Yak-130
Long Term Product Range	Su-35, RRJ, a project for the development of a perspective heavy class of fifth generation aircraft (PAK FA)	IRTA/MTA, a light class fifth generation fighter, a family of unmanned aerial vehicles, MS-21
Elements of Strategic Development	To become the systems integrator for the Russian Regional Jet project, realization of the project for the development of a new generation combat aircraft complex (CAC)	Integration into the European aircraft-industry, participation in the European projects as subcontractor
International alliances	SNECMA, Thales, Alenia Aeronautica	EADS
Nature of alliances	Risk sharing partnership	Participation of EADS in Irkut Corporation capital
Development Alternatives	1) Integration into UABC or 2) Confirmation as independent element of the national aircraft industry	1) Consolidation of the UABC on the basis of the corporations own personnel and organizational structure or 2) Confirmation as the Russian partner in the creation of the international alliances, primarily with Airbus
Strengths	High innovative potential	Wide experience in the application of modern business practice, diversified range of products, presence of special relations with EADS
Weaknesses	High risks for realization of the perspective RRJ project	Main element in the alliance Irkut Corporation has heavy debt, possible conflicts between leaders of the alliance

Source: table by author

event that the UABC is unsuccessful, it stands to become a Russian analogue of Dassault. At the same time, in addition to probable export contracts, a successful company should develop orders from the Russian Air Force as a foundation. On the whole, sufficiently energetic resistance from Sukhoi to plans for dissolving this company in the UABC have every chance of producing an aircraft industry dynamic similar to the French system.

Such a system could be called ‘sesquipolar’ (*lat.* ‘sesqui’ – one and a half). The majority of the French aircraft manufacturing industry is integrated into the European aircraft-industry zone – more concretely, in EADS. At the same time, however, the national pole of aircraft manufacture is maintained in the form of Dassault Aviation, which with state support (from significant defense orders from the state) makes a highly competitive showing in two sectors of the aviation market: light fighters (the Mirage 2000-5) and business jets (the Falcon).

There are significant cultural commonalities in both Russian and French aircraft-industry politics: the role of the state in the economy, the presence of a deep rooted aviation tradition, and, significantly in the era of globalization and the trans-nationalization of industries, the desire to preserve an expressed state and national-cultural identity in the industry, which only two decades ago was exclusively the province of the state. Further, given the present rate of growth of the Russian economy, the economies of the two countries viewed in terms of purchasing capacity will be comparable in the foreseeable future. These common attributes provide a basis for the reasonable assumption that the institutional configuration of their respective aircraft industries may follow similar patterns.

What is more, as depicted here, the sesquipolar system is to the greatest degree in the interests of the state. On the one hand, the formation of a large business unit like the UABC or an Irkut Alliance will permit the establishment of an attractive and legitimate partner for integration with European partners. Such integration is absolutely necessary for the survival of the Russian aircraft manufacturing industry. To further the process of integration in the European aerospace community, it will be necessary to concentrate assets and minimize state participation in any such consolidated enterprise connecting Russia to one of the European projects, namely the Airbus A-350 program. Even more advantageous would be the integration of Russian assets and the Indian aircraft industry represented by Hindustan Aeronautics Ltd. In its relations with India, Russia has broader prospects for the realization of joint military projects; the most important among them might include a joint program for the development of the MTA and a fifth generation fighter project. Also important and promising in this regard is India’s desire to participate in the Russian Regional Jet program.

On the other hand, Russia could also maintain a national model in the form of state dominated Sukhoi. Over the next 5-7 years, this company will continue to be highly competitive in the heavy warplanes sector (if the Su-27BM project will be successfully realized) while additionally the company possesses all preconditions for the development of a cutting edge product for the global market of civil aviation. The RRJ is one such product. The preservation of a completely national pole will facilitate the ability to keep up the necessary competitive pressure on any unified enterprise, and will also enable a more flexible means of maintaining balance between the two major players in the global aircraft industry – Airbus and Boeing. Such a position will also provide the option of entering into alliances with poles of the second echelon (Bombardier and Embraer) and with emerging players – the Indian and Chinese aircraft industries.

It almost goes without saying that the strategies of the two poles should ideally compliment each other. The European oriented strategy of Irkut is directed toward the integration of the Russian aircraft industry into the European industrial zone to the extent of Russia possibly sharing in Airbus capital. Theoretically, this strategy is set to be the main vector in the development in the aircraft industry. For a number of reasons, it is desirable to maintain the Russia pole, especially the military aspect, which can exist only as a systems integrator for its own projects, however modest. Such is the strategy of Sukhoi today.

Outsiders

Outside the two poles of consolidation described, there are yet three other interesting enterprises: the Voronezh Aircraft Production Stock Company (VASO), the Ulyanovsk based Aviastar and the Kazan Aircraft Production Association. The first factory is technologically connected with Ilyushin Company, and the other two work in association with Tupolev. It is noteworthy that both Ilyushin and Tupolev had opportunities to build corporate structures on the basis of their factories. If this had happened, both design bureaus would today have been players enjoying an equal standing on the field of consolidation instead remaining objects for acquisition by the more dynamic companies. The gap in restructuring between the civil and military-transport aircraft sectors has some fairly objective reasons, mainly: civil aircraft sales are markedly lower than sales of fighters. The main explanation for such a gap, however, is primarily due to the poor quality of management in these design bureaus and the factories connected to them.

A real prospect for transformation in this third pole of consolidation arose at VASO after the arrival of leasing

Table 2. Schematic Comparison of Outsiders

	VASO	Aviastar	KAPO
Current Product Range	Il -96-300, An-148	Tu-204-100, Tu-204S, Tu-204-300,	Tu-214, Tu-334, Tu-160
Long Term Product Range	IRTA/MTA, Il-112V, RRJ (possible), MS-21	MS-21, An-124-100M-150	Unknown
Strengths	Good location, a good perspective product range	Satisfactory location, a high technological level	Powerful political and economic support from regional authorities
Weaknesses	Technological degradation, poor management, difficult financial position	Chaos in shareholder relations, poor management, high risks long term projects	Limitation of current product range, absence of clarity concerning long term projects
Politico-economic Patrons	NRC-IFK, local authorities	Local authorities, Volga - Dnepr Company	Republic of Tatarstan
Strategy of Patrons	Transformation into a platform for licensed manufacture of small-scale production for the Ukraine	None	Unknown
Tendencies to Developed Poles of Consolidation	Towards Irkut Alliance. Given favorable developments in the RRJ project, then possibly to Sukhoi	None at present. In the long term (assuming positive developments with the MS-21) towards the Irkut Alliance	Development base for an aircraft industry for independent Tatarstan

Source: table by author

company Ilyushin Finance (IFK) at the plant. The National Reserve Corporation (NRC), a company with a rather strong showing in lobby and financial relations, backs Ilyushin Finance. The idea for such a transformation was in effect contained in proposition of Alexander Lebedev (co-owner of NRC) for the creation of a Unified National Aviation Corporation (UNAC). The potential of NRC-IFK, however, has not been sufficient for the realization of this ambitious idea and in the summer - autumn of 2005 saw IFK become the object for hostile take-over: the arrest of shares, a moratorium on flights of the Il-96-300 and the forced withdraw from the trust management of the controlling block of shares in VASO. As a result the company has been weakened and can now hardly compete politically with the much stronger lobbyists from Irkut and Sukhoi.

It is now difficult to forecast developments with VASO, Aviastar or KAPO with complete confidence. Through ties with Ilyushin, the Voronezh factory certainly gravitates to the Irkut Alliance. The VASO industrial platform, however, has an optimal location appropriate for the manufacture of the RRJ regional aircraft. In any case, the head of the Federal Agency for Industry Boris Alyoshin has already announced the possibility of arranging for the manufacture of RRJ components at VASO.⁵ After halting the trust management activity under the Ilyushin Finans, the controlling block of shares in VASO could in theory be transferred to Sukhoi management or ownership, though now such a scenario

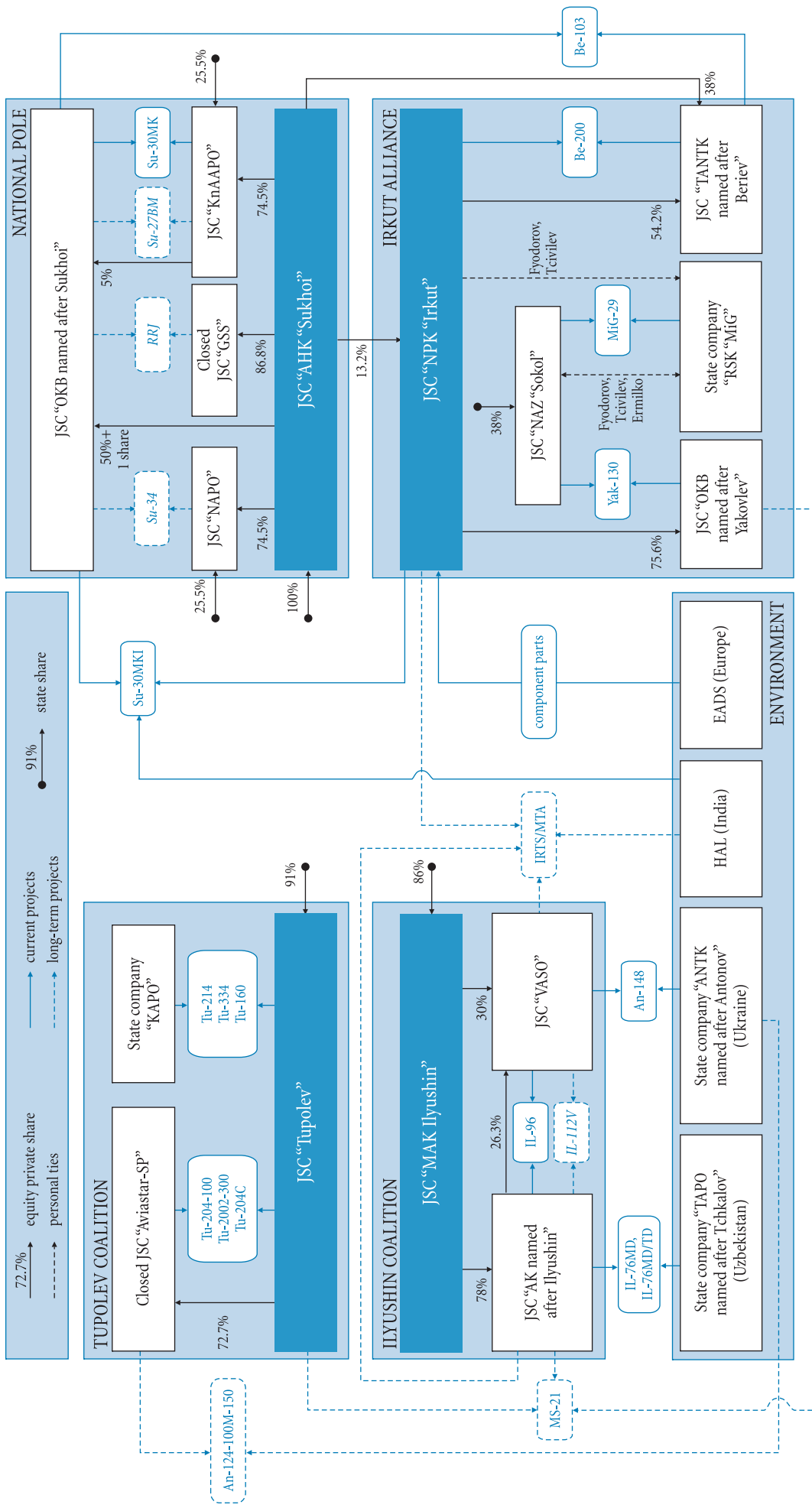
seems completely unrealistic. The chances of Sukhoi joining VASO will increase if An-148 loses Aeroflot's tender and the RRJ project maintains normal development pace. It is likely that an optimal variant would be the simultaneous presence of Sukhoi and the Irkut Alliance at the factory.

The most probable outlook for Aviastar is also a gradual drift towards the Irkut Alliance, mainly because this factory, aligned with VASO, is presumably a main platform for the manufacture of the advanced MS-21 aircraft. Although production will not begin earlier than 2012 at the best, for now the factory will be occupied exclusively with orders for the Tu-204 aircraft family in different versions. The An-124-100M-150 project appears to be extremely capital-intensive and consequently a very high risk; its outcome is far from clear.

Finally, the present and future of the Kazan Aircraft Production Association is defined exclusively by political factors. In the current situation the factory represents nothing more than an element forming part of an industrial base for a future autonomous Tatar republic. Assuming there will be no appreciable changes in this state of affairs, the federal center should pursue the mitigation of the factory's technological capacity and resource base. A desirable alternative might be the establishment of federal control over the factory by KAPO to transform it into a political, economic, financial and demographic tool in the struggle against separatism.

- 1 Sergei Sokut first used this term in the *Nezavisimoye voennoye obozreniye*. See: V Rossii nachalas stikhinaya restrukturizatsiya aviatsonnoi promishlennosti // *Nezavisimoye voennoye obozreniye*, 3 Dec 1999.
- 2 A. Nikolski. Russkiy EADS ne srastaetsya // *Vedemosti*, 2 Jun 2005
- 3 "Tupolev" podkluchsetsya k MS-21 // *Vzlyot*, #10, 2005.
- 4 See website: <http://www.irkut.com/ru/services/projects/>.
- 5 M. Simonova. Boris Alyoshin podstavil krylo VASO // *Kommersant (Voronezh)*, 6 Oct 2005.

Scheme 1. Institutional Framework of Russian Aircraft Industry and System of Corporate and Product Dependencies



AHK - Aviation Holding Company
 AK - Aviation Complex
 ANTK - Aviation Scientific & Technical Complex
 GSS - Sukhoi Civil Aircrafts
 IRTS/MTA - IRTA/MTA
 KAPO - Kazan Aircraft Production Association
 KnaAPO - Komsomolsk-on-Amur Aircraft Production Association
 MAK - International Aviation Complex
 NPO - Novosibirsk Aircraft Production Association
 NAZ - Nizhny Novgorod Aviation Plant
 NPK - Scientific Production Corporation
 OKB - Experimental Design Bureau
 RSK - Russian Aircraft Corporation
 TANTK - Taganrog Aviation Scientific & Technical Complex
 TAPO - Tashkent Aircraft Production Association
 VASO - Voronezh Aircraft Production Stock Company

Russian-Israeli Relations and Russian Arms Trade in the Middle East

Konstantin Makienko

Middle Eastern nations are constantly at the center of attention for Russian arms exporters. With the Chinese and Indian arms markets approaching saturation, the capacious markets of the countries of the Middle East are drawing attention as potential variants for the diversification of Russian arms exports. In this context it is important to note Russia's rather poor showing against other major contenders on the arms export market, namely American, British and French exporters. The disparity especially concerns the markets of the rich oil-producing monarchies of the Persian Gulf. The same situation, however, can be observed in relation to the traditional buyers of Soviet and Russian arms – the radical anti-Western and anti-Israeli regimes of Syria, Iran and Libya.

All major confirmed Russian arms deliveries to Iran took place in the first half of the 1990s. Among these deliveries were three Kilo class submarines, several dozens MiG-29 fighters of the basic '9-12' version and also a significant number of T-72 main battle tanks. The second half of the 1990's was marked by the appearance of the Gore-Chernomyrdin Memorandum, in which Russia gave up the option of concluding new arms contracts with Iran. Following Russia's withdrawal in 2000 from contract fulfillment contingencies contained in the Memorandum, Russian-Iranian military-technical cooperation over the past five years has only resulted in the presumed deliveries of 30 Mi-17 transport helicopters, a certain number of which are likely to have been the combat version. This resumption of arms trading is also likely to include deliveries of spare parts. On the whole, however, it is clear that Iran remains only a marginal buyer for Russian defense and dual-use production.

Regarding Syria, the only confirmed and completed arms deal was the delivery in 1998-2000 of a consignment of Cornet-E (AT-14) and Metis-M (AT-13) ATGMs, having a total value of just over USD 70 ml. Information concerning significant arms sales to Libya during the post-Soviet period is lacking.

The reasons for the low level of arms trade activity to Damascus, Teheran and Tripoli vary. The main obstacle to importing foreign arms to Syria is the limited means of the state. For Iran, it is the nation's orientation towards the development of its own defense industry; and for Libya, the obstacle remains the desire to normalize relations with the

West and dissatisfaction with Russian foreign policy at the beginning of the 1990's.

Despite the current low level of activity in this area, future developments of political and military conditions in the region may indeed compel Iran and Syria to become more active in arms purchases, including purchases from Russia. Because even the most insignificant arms deliveries infringe on the security interests of Israel, it would appear expedient to attempt to formulate some general principles for military-technical cooperation with the countries of the Middle East, adhering to which would support Russia's national interests. Generally these interests consist of:

- Commercial interests, these being the generation of resources from potential arms sales to clients in the region; and
- Maintaining access to advanced technologies, and in some cases, the direct purchases of arms and equipment from Israel with the purpose of ensuring increased competitiveness of the Russian defense industry, and in some cases – for the support of the so-called Russian 'power' ministries, the various military and strategic internal ministries reporting directly to the president.

It is easy to see how these two principles are potentially mutually exclusive. One of the major Russian military-technical policy tasks for the region is the harmonization of this conflict of interest. In the analysis of the situation, several prospective avenues emerge.

First, a reduction in the overall level of military security for the State of Israel is not among Russian interests. Moreover, Russia should pay increased attention to the possibility of *real* military threats as a consequence of Russian arms deliveries to Syria or other nations unfriendly to Israel. Special attention is necessary concerning the potential consequences of deliveries of weapons systems that could be used against civilians or civilian targets, and offensive arms against which it would be difficult to mount a defense.

Russian sensitivity to Israeli interests is desirable not in terms of altruism, but as a consequence of the fact that Israel, unusual as it may sound, could potentially become one of the Russian Federation's major partners in the area of military-technical cooperation. The character of military technical cooperation with Israel consists of the

fact that Israel is neither a buyer of Russian arms and military equipment nor a potential partner for the realization of large joint military-industrial projects. In the process of the degradation of the Russian defense industry and the growing gap between Russian and other military-technical leaders, Israel to an increasing degree could, however, become one of the major sources of cheap, easily imported technologies for Russia as an alternative to independent development. In addition, Israeli arms dealer networks in some cases could be used for the promotion of Russian aviation platforms equipped with Israeli avionics on the world market. Cooperation of this kind would be distinguished by a fully complimentary character and mutual commercial interest. Concerning Russia's relationships with other countries' manufacturing avionics, achievement of such a complimentary character in a manufacturing relationship would be more difficult, as France for example, is already a serious player in the market of aviation and helicopter platforms.

Finally, Russia has an interest in Israel with regards to that nation's experience in antiterrorist and counter-insurgent combat; including experience in densely populated urban conditions.

Though the idea of Russia's importing military equipment seems improbable at present, the fact that its own army is incapable of burdening the Russian arms industry with orders leads us to believe that such cooperation is a distinct possibility in the near future. Actually, the first imports of dual-use equipment in the interests of the Russian 'power' ministries have already taken place. For example, Irkut Corporation purchases from Israel equipment and technology for unmanned aviation systems and systems for observing and identifying objects. These transactions have been realized in the interests of the Russian Ministry of Emergency Situations, which, from the perspective of the interests of the Russian aircraft manufacturing industry, follows a much more effective policy than the Ministry of Defense.

It should be noted that Israel has many advantages as a source of arms and defense technologies for Russia. The basic advantages include the readiness to share technology and, as already noted, the complimentary nature of Russian and Israeli product lines on the market.

It is clear that relations with a potential strategic partner in the military-technical sphere can only be built on conditions of increased attention to the security interests of said partner, even more so in the case of Israel. On the other hand, taking the security interests of Israel into closer account, Russia can and should assert its commercial interests. This would include the sale of weapons systems that would not pose any threat to Israel from Syria, other Arab countries or Iran.

As presented here, these principles for Russian interests in the region are compatible with each other and could be easily combined in a real policy of military-technical cooperation. Proceeding from the given approaches, it is possible to count certain transfers of arms to Syria as undesirable. Systems such as the Iskander-E missile systems (SS-X-26), the family of S-300 SAM systems (SA-10) and portable MANPADs of any kind are clearly not in the interests of Israel. The Iskander, with its highly accurate targeting, three hundred km range and the impossibility of being intercepted by antimissile defense systems, is for the Middle East a strategic weapon of tremendous potential which could devastate vital military, economic and administrative targets almost anywhere within the territory of Israel. Likewise, the S-300 SAM systems also offer too much advantage in range in the context of the congested Middle Eastern region, and their transfer to Syria would certainly pose a threat to flights above the territory of Israel, including civilian aircraft. MANPADs can fall into the hands of irregular paramilitary groups, which could use them against civilian targets.

At the same time, the transfer of arms systems such as medium and short range Air Defense Systems Buk-M1 (SA-17), Tor-M1 (SA-15), Tunguska-M1 or the Pantsir-C1 (SA-19), while strengthening the military security of Syria, would not pose any threat to Israeli civilian targets. These defense systems can be used only against military targets and only in the event of Israeli military activity above Syrian or Lebanese territory. Similarly, the military balance of the region would not be essentially changed in the event of any large scale modernization of Syrian military air capabilities or Syrian ground forces, which will always be inferior to Israeli air and ground forces in fighting capacity.

Russian Military Aircraft Export: The Passing of a Golden Age

Konstantin Makienko

Heavy Fighters: Market Saturation

The period between 2002 and 2004 witnessed the most significant volumes for export deliveries of Russian military aircraft, primarily heavy fighters of the Su-27/30 family. Transfers in this time reached record volumes for all Russian military export: aircraft transfers in turn triggered the export of missiles, equipment, spare parts and hardware. The implementation of very large Chinese contracts signed in 1999, 2001 and 2002 were completed in full. At the same time aircraft transfers and significant research and development for the grandiose program relating to the construction and delivery of Su-30MKI fighters to India was also completed.

Since 1999, the People's Republic of China has received 76 Su-30MKK multi-purpose fighters, 28 Su-27UBK and 24 Su-30MK2 aircrafts optimized for anti-ship operations. In addition to this, 105 kits for assembling the Su-27SK aircraft at the factory in Shenyang have been transferred within the framework of the 1996 contract for licensed production.

The 32 Su-30MKI fighters stipulated by a 1996 contract with India have been transferred in the period from 2002-2004, and during deliveries their capabilities were upgraded. Aircraft of the third consignment were already delivered in nearly complete form; it only remained to integrate electronic countermeasures systems.

Indonesia also received fighters – two Su-27s and two Su-30MKs for the tidy sum of USD 192.8 ml while the

Vietnamese Air Force was reinforced with four Su-30MK2s in November – December 2004.

According to the Russian press, in 2003 a contract was signed with Ethiopia for the delivery of a second consignment of another eight Su-27 fighters to Ethiopia in addition to eight such fighters delivered at the end of 1998 – beginning of 1999, and which played a role in the Eritrean-Ethiopian conflict. The deliveries were made from the standing reserve of the Russian Air Force and did not have any impact on the on the situation in the industry.

For today, however, it can be ascertained that the period for large export deliveries of Su fighters has come to a close. This is mainly due to the relative market saturation of the two largest traditional importers of the Russian family of Su-27/30 fighters. All delivery contracts with China and India have been completed, and only the license agreement signed with Delhi in 2000 is still in effect. Remaining Russian contract obligations consist only of the transfer of 18 Su-30MKMs to Malaysia under the August 2004 contract totaling more than USD 900 ml.

India is completely occupied with the licensed manufacture of the Su-30MKI in domestic facilities. The only means of conducting new deliveries to India would be to replace 18 Su-30K fighters delivered between 1997 and 1999. It was originally assumed that all Su-30Ks would subsequently be upgraded to the Su-30MKI standard, but it appears that the cost of such modernization is just too high as it would require not only the replacement of the onboard

Table 1. Export of Su-27/30 Fighters 2000-2004

Country	2000	2001	2002	2003	2004	Total
PRC	10 Su-30MKK 8 Su-27UBK	28 Su-30MKK 10 Su-27UBK	19 Su-30MKK 10 Su-27UBK	19 Su-30MKK	24 Su-30MKK	100 Su-30MKK/MK2 28 Su-27UBK
India			10 Su-30MKI	12 Su-30MKI	10 Su-30MKI	32 Su-30MKI
Indonesia				2 Su-27SK, 2 Su-30MK		4 Su-27SK/MK
Vietnam					4 Su-30MK2V	4 Su-30MK2V
Ethiopia				3 Su-27SK	5 Su-27SK	8 Su-27SK
Total	18	38	39	38	43	176

Source: table by author

equipment, but also the alteration of the airframe and replacement of the engines. These complications make it more rational to find now a third buyer for the Su-30K or to buy back these aircraft.

In the beginning of 2004 the Russian and international press discussed the probability of China purchasing one more consignment of Su-30MK2's equipped with anti-ship missiles for the Chinese Navy. However, the sale has not yet taken place. In addition, China so far has refrained from settling on a firm contract for the option on the delivery of 95 complete sets of Su-27SK's for assembly under license. At present there is little clarity as to whether the Chinese partners do not require an additional quantity of heavy fighters, or are only making a tactical pause in orders.

There remains a positive outlook for Sukhoi aircraft in the Indonesian market. It is clear that the Indonesian Air Force will not limit purchases to only four aircraft of this family. At the end of 2004 Indonesia was already prepared to acquire additional Sukhoi aircraft, but because of the devastating tsunami, the country has been compelled to postpone the project. Nevertheless, already by the middle of 2005 the Indonesian Air Force began to demand persistently from the government a provision for the continuation of aircraft purchases. On the whole Indonesia expects to deploy 44 Su-30MK fighters. The main obstacle

to the expansion of Russian arms export to this country is the lack of financial resources. It is clear that the tempo of deliveries will be low, even without the extenuating circumstances.

Vietnam, in addition to the 12 standard Su-27SK/UBK fighters already purchased in the middle of the 1990's, bought four more multi-role Su-30MK2V's for the sum of USD 110 ml in 2003. The transfer of these aircraft took place between November and December of last year. As well as the case with Indonesia, this country will most likely continue importing Russian military technical equipment. Up to now the purchase rate has averaged barely more than one fighter per year and more intensive deliveries are not expected, although besides arms for the Air Force, Vietnam places large orders for naval and anti-aircraft systems.

From this it is apparent that in the short term, Southeast Asia poses itself as the most realistic market for fighters. But it is clear that the states of this region, even taken together, cannot match the military aircraft orders which came through China and India over the last five years. Most likely a new surge in purchases comparable to 1999-2004 sales volumes will only happen if a Su-35 variant should reach the market or in the event of the expansion of the Chinese Navy with a large aircraft carrier program.

Table 2. MiG Fulfillment of Contracts 1999-2004

Year	Importer	Aircraft	Contract Value, USD ml
1999	Bangladesh	8 MiG-29B/UB	124
2000	Eritrea	6 MiG-29B/UB	77
	Syria	Repair of 13 MiG-23, 1 MiG-29UB, delivery of spare parts	61
2001	Myanmar	12 MiG-29B/UB	132
	Sudan	12 MiG-29SE/UB	140
	Yemen	14 MiG-29B/UB	430
	Congo	4 MiG-29B/UB	85
2002	Bulgaria, Hungary, Slovakia	Repair and upgrade of 58 MiG-29	120
	Eritrea	2 MiG-29B	21
	South Korea	22 Il-103	8
2003	Libya	Repair of 16 MiG-23	20
	Yemen	6 MiG-29SMT, repair of 5 MiG-29, delivery of spare parts	150
	Yemen	Upgrade of 14 previously delivered MiG-29 to MiG-29SMT	Within the framework of the 2001 contract for USD 430 ml
	Eritrea	2 MiG-29SE and upgrade of 2 MiG-29B to MiG-29SMT	50
2004	India	16 MiG-29K/KUB	740
	India	Option for 30 MiG-29K/KUB	1,400
Total	Bangladesh, Myanmar, Yemen, Sudan, Eritrea, Congo, India, Libya, Syria, South Korea, Bulgaria, Hungary, Slovakia	60 MiG-29B/SE/UB, 6 MiG-29SMT, upgrade of 16 MiG-29 to SMT version, repair and upgrade of 58 MiG-29, repair of 29 MiG-23, delivery of 16 MiG-29K/KUB and 22 Il-103	USD 2.158 bl and option for USD 1.4 bl in total – up to USD 3.6 bl

Source: table by author

MiG: The Breakthrough That Might Have Been

The MiG Corporation (RSK “MiG”) has carried out rather large deliveries within the framework of contracts dating from 1999, when its strategy on the international market consisted of offering the MiG-29 from factory stocks at a low price. According to different sources, at the end of the 1990s there were anywhere from 70 to 100 aircraft in various degrees of readiness in Lukhovitsy, not far from Moscow. It would appear that the majority of these aircraft have been sold in the last five years. Resources from export contracts have been reinvested in the further development of the multi-role MiG-29SMT version equipped with the Zhuk-M radar.

In March 2003 RSK “MiG” managed to conclude the first contract for delivery of the new radar equipped MiG-29SMT. Launch customer for the aircraft was Yemen, which will have a total of 20 such aircraft. Eritrea is another buyer of this version today. Work on the MiG-29SMT has allowed the corporation to position itself more confidently in negotiations with India over the delivery of the ship borne MiG-29K to complete a consignment sold in January 2004 for the aircraft carrier Admiral Gorshkov. The signing of this contract was the peak achievement of the company, the logical conclusion of the ‘Lukhovitsy’ strategy.

At the end of 2003 it appeared that, of all Russian aircraft manufacturers, RSK “MiG” was the company with the highest prospects for potential export orders. There were realistic plans for the conclusion of new contracts for deliveries of low cost models to the markets of the poorer countries of Africa and Asia. The Russian press has reported on negotiations with Tanzania, Uganda and Chad, and Sudan has shown interested in purchasing new consignments of MiG-29s. But the main hopes for a sharp

boost in the position of RSK “MiG” are connected with an anticipated Algerian order for 50 MiG-29SMTs for the sum of USD 1.8 bl. At the same time, MiG intends to buy back dozens of Algerian MiG-29s for USD 300 ml.

The 2004 presidential elections in Algeria, however, have changed the political landscape of the country. The military has lost part of its influence and lobbyist groups have put a new government administration together. The contract remains unsigned. With the exception of a previous agreement for the delivery of ship based MiG-29Ks, since November 2003 the corporation has not concluded any contracts for the delivery of fighters.

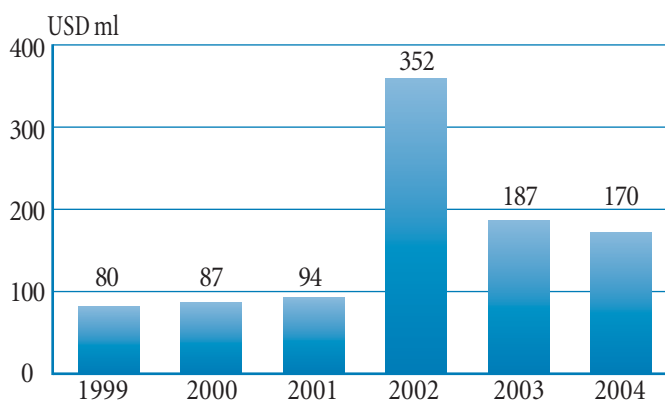
At present MiG has executed in a quantitative sense a large part of its contract obligations; the overall volume of the company’s export during the period between 1999 and the end of 2003 consisted of about 40 base version MiG-29 aircraft for USD 800 ml. From the point of view of the quality of these contracts, however, the corporation is only now coming to the most crucial period. Transfers of the MiG-29SMT to Yemen began at the end of 2004 or the beginning of 2005. It appears that the development of the aircraft is close to completion and the plane, at last, presents an operational combat aviation complex. This means that the corporation, although with a delay of ten years, is nevertheless ready to offer a multi-role aircraft on the market. The primary goal for the company now will be the successful culmination of intense research and development on a ship-borne fighter.

Recently in the press there has been information about a request by Indian Naval command to the Ministry of Defense to unblock credit for the purchase of an additional 14 MiG-29Ks for the outfitting of an ADS aircraft carrier of Indian construction.

Furthermore, a major challenge for RSK “MiG” will be participation in the enormous tender for the Indian purchase and license manufacture of 126 light fighters. According to some sources, the deal is valued at USD 9 bl. Originally, the Indian Air Force intended to purchase French Mirage 2000-5s. Later on, however, conditions were reformulated in such a manner that the attraction of heavier fighters of the 20-ton class could participate in the tender. Now the tender has been expanded to include all fighters available on the market, from the extra light Gripen to the heavy F-18 E/F Super Hornet.

It seems clear that the export of fighters in the coming years will be much less significant than for the period of 2001-2004 when more than 50 military aircraft were sent abroad annually. This recession will go on at least until the industry is in a position to offer aircraft with capabilities approaching fifth generation fighters on the market, and the only means of navigating this recession will be through purchases by the Russian Ministry of Defense.

Diagram 1. Value Dynamics of MiG Corporation Transfers 1999-2004



Source: company's data

Peace Mission 2005: A 1970s Template for Sino-Russian “Peacekeeping”

Mikhail Lukin

During the 1960-70s, Chinese military planners envisaged a possible Soviet landing on the Shandong Peninsula. They warned that Moscow might seek to cut off north-east China to establish a pro-Soviet bulkhead, so in 1970 the People’s Liberation Army (PLA) conducted large-scale military exercises to repulse a simulated hostile landing on the peninsula. We may never know to what extent these fears corresponded with the actual intentions of the Soviet Armed Forces, but the PLA’s worst expectations have ironically come true: the “Russians” have indeed landed in Shandong, as part of the first ever Sino-Russian joint military exercise.

The code-name “Peace Mission 2005” appeared in the press in June 2005 following a meeting in Khabarovsk between Assistant Chief of Staff, Major-General Chzhan Tsinyein with General of the Army Yury Yakubov, Commander of the Far Eastern Military District. The idea of holding a joint exercise was probably first mooted during Defense Minister Sergey Ivanov’s visit to China in April, 2004. Tsinyein and Yakobov would meet once more in Vladivostok to conclude negotiations and turn towards concrete preparations for the exercise. On July 6, 2004, Sergey Ivanov and the Deputy Chairman of China’s Central Defense Council Ho Bosiun announced the official decision to hold joint military exercises.

According to the Russian media, it took several rounds of negotiations to arrive at an agreement on the location for the exercise. Initially, the Chinese suggested Primorskiy Krai’s Sergeev testing field. This was rejected by the Far East Military District commanders, as that field is used for training against possible Chinese attacks. As an alternative, Russia suggested the Xinjiang Uygur autonomous region, where separatists and, in neighboring Central Asia, terrorists abound, along with American forces, whose presence is an irritant to both China and Russia. But this suggestion for whatever reason did not suit the Chinese. The third option, proposed by the Chinese, was to hold the exercise in Zhejiang Province, not far from Taiwan. However, anxious to keep away from the China-Taiwan problematic, Moscow requested that the exercise be held further from the disputed island.

As for the scenario, the military showed no inclination towards originality, and suggested a standard “peacekeeping-antiterrorist” scenario, very fashionable in

recent times, as “peacekeeping” and “antiterrorist” exercises have been held by all save perhaps the strategic nuclear forces. Even the Russian Air Force led by none other than the Commander in Chief Vladimir Putin not so long ago pounded “terrorist bases” with their new Kh-555 missiles.

Participating Forces

Russian participation was directed by Deputy Chief Commander of the Army Colonel-General Vladimir Moltenskiy. On the whole, approximately 1,800 servicemen took part, including a company of paratroopers from the 234th Regiment of the 76th Airborne Division (Pskov) commanded by Captain Vitaly Repin.

Russian naval forces included the Destroyer “Burny” (Project 956, launched February 1987, crew of 344, part of the 36th division of the Pacific Fleet missile-boats, commander First Captain Alexander Kuzminets); the Udaloy class destroyer “Marshal Shaposhnikov” (Project 1155, launched December 1984, crew of 220, part of the 44th Pacific Fleet anti-ship brigade, commander Second Captain Anatoly Vislov); the tank landing ship BDK-11 (Project 775M, launched April 1990, crew of 98, part of the Pacific Fleet’s 100th Landing Brigade); the “Pechenga” tanker, an SB-522 rescue tug; a company from the 390th Regiment, 55th Division Naval Infantry; and cadets from the Makarov Pacific Ocean Navy Institute (Vladivostok).

The Air Force component included two Tu-95MS strategic missile carriers from the 326th Heavy Bomber Division; four long-range Tu-22M3 bombers from the 444th Air Regiment of the 326th Heavy Bomber Division; seven Il-76MD military transport aircraft from the 110th Air Regiment; a Il-78 refueling aircraft from the 203rd Air Regiment; an A-50 AWACS aircraft from the 2457th Air Base; a Su-24M2 front-line bomber and Su-27SM multi-role jets from the 23rd Fighter Air Regiment.

The Chinese side was led by the PLA Deputy Chief of Staff Col. General Ge Chzhengfen, and included up to 10,000 military servicemen. Beijing provided three Harbin class destroyers, three Jianghu-class frigates, two trawlers, six large landing ships with infantry on board, two Kilo class diesel submarines (Project 877), and also three H-6 bombers,

ten Il-76 and Y-8 military transport planes, three Su-30MKK fighters, and several Mi-8, Z-5 and Z-9G helicopters. In terms of ground forces, there was an amphibious armored battalion, an armored infantry battalion, special-forces and a command of paratroopers. Up to 100 ZTZ-96 and ZTS 63-A (amphibious) tanks as well as ZLS-92 and ZLS -2000 (paratroop) armored carries took part.

Peace Mission 2005

Chinese servicemen began to deploy to the theatre from the second half of June. On August 11 Russian military planes started to land at the Chinese Lyutin airport. On August 12 Russian ships that had left Vladivostok on August 7 arrived at Qingdao port. The first accident occurred on August 12, when a coder went missing on the “Burny” (according to some reports, cipher clerk Nikolai Degtyarev). According to the military, he was washed off board during a transfer, but according to the media, the sailor may have defected to the Chinese.

The main rehearsal for the exercise began on August 15, when the military managed to set a building in a village on fire. The Chinese authorities had given prior notice that they would compensate all losses to the harvest, housing and property arising from the exercise, and even paid out compensation in advance, given the clear expectation of civilian losses. Training flights began on August 16: the A-50 AWACS flew with crew of Russian and Chinese specialists on board and a Russian Il-78 conducted an air-refueling of two Chinese Su-30 fighters. To enable communication between Russian and Chinese pilots, a new system of codes was developed and each pilot had a list of transcribed Russian and Chinese commands at hand.

The exercise was officially opened on August 18 by the Chiefs of Staff of both parties – Russia’s General of the Army Yury Baluyevskiy and Chinese People’s Liberation Army Col. Gen. Liang Guanglie. Commanders and staff officers from both sides commenced analysis of the military-political conditions and jointly planned the war game. The scenario involved three hypothetical states: “Russia”, “China” and a third state on the Shandong Peninsula, where ethnic conflict has given rise to civil unrest, and whose authorities have requested assistance from its neighbors and the UN. Acting under the authority of a UN mandate, “Russia” and “China” launched a peacekeeping mission to separate the opposing forces.

The second stage consisted of maneuvers and deployment of troops. Since the main forces had arrived in theatre much earlier, the “maneuvers” consisted mainly in the arrival of the military commanders to Shandong, where they added the final touches to the deployment plan. A series of training exercises were held for Russian and

Chinese paratroops and sailors. By August 21 the positioning of troops was complete and on August 22 they enjoyed a cultural program while waiting for the commencement of action the next day.

The final and active phase of the exercise began on August 23 and consisted of anti-shipping operations, namely, the search and destruction of an “enemy submarine” played by a Chinese diesel Project 877 boat. It is worth recalling that, according to the scenario, an “ethnic conflict” served as the basis for the peacekeeping mission, and the hypothetical enemy consisted of “terrorists, separatists and extremists.” It is not entirely clear how a group of terrorists would have been able to man a submarine or of what practical use such a vehicle would have to the parties of an “ethnic conflict.” In any case, the joint anti-shipping operation was successful in destroying this hypothetical enemy submarine.

The Russian and Chinese navies then organized a blockade of the Shandong coastline to prevent the arrival of assistance to the terrorists from sea. This included live-fire exercises of missiles from ships and submarines. The PLA Air Force acquired supremacy over the peninsula and its territorial waters. Some of the aircraft imitated an attack on ships which responded with air defenses. Towards the evening of August 23 the “peacekeepers” had achieved both air and sea supremacy, by which time the defense ministers of Russia and China had arrived in theatre.

On August 24 the most spectacular phase of the exercise began: a landing operation at Quindao by Russian-Chinese marines and seven landing ships, including the BDK-11. The operation began at 11:08 with missile strikes by 12 fighters and 12 bombers along terrorist positions on the Laniatai peninsula. By 11:20 destroyers began to fire on the peninsula from sea. At 11:23 PLA bombers with fighter escort launched a second raid, now at enemy artillery positions. At this point the enemy was considered to be “hypothetically immobilized” and three groups of Special Forces landed from 18 helicopters behind enemy lines, along with paratroops airdropped from three Il-76 aircraft.

At 11:32 the remaining “separatists” opened fire on the landing ships, after which 18 cutters delivered a company of “peacekeepers” that took down enemy defenses with flamethrowers. Simultaneously, the air force launched air strikes against the defenders’ positions. At 11:38 under the cover of twelve military helicopters began the landing of marines (a marine company and 10 APCs from the Russian side, an amphibious armored battalion and 33 APCs from the Chinese side). At 11:40 the first echelon of marines captured the beachhead, and at 11:52 the second echelon of armored battalion of 32 vehicles landed successfully. The “enemy” began a final counterattack that was decisively defeated by a massive artillery attack by land and sea systems. The marine landing operation was complete by 12:10.

There was another accident in the Yellow sea, when a Russian APC sunk at a depth of 5 meters along with eight marines. Fortunately, there were no casualties as the crew was evacuated successfully. However, during the landing the Chinese sunk two tanks, and eight crewmen died. It would appear that these accidents were caused by the extremely difficult weather conditions, as the landing parties had to traverse about one mile under heavy rain and a level three storm, instead of the expected half kilometer of smooth sea.

Paratroops landed on August 25 on the other peninsula Veybey. At 11:00 two strategic Tu-95MS “Bear” bombers deployed from the Ukrainka airbase in Russia launched cruise missiles against terrorist landing strips. At 11:07 four long-range Tu-22M3 bombers deployed from the Ussuriysk airbase dropped 18 FAB-250 bombs on the same peninsula. Three Chinese H-6 attacked targets with missiles. A further 18 aircraft of various types attacked deep into enemy defenses and headquarters. All the while, the Russian A-50 AWACS directed aircraft to their targets.

Artillery bombardment of the forward edge and fortified points deep into the enemy defenses began at 11:17. Upon its conclusion, the Chinese shot a few rounds of propaganda projectiles with the aim of undermining the fighting spirit of the enemy. (The Russian armed forces have long recognized the clear superiority of high-explosive ammunition over propaganda leaflets!) Nonetheless, according to the scenario, the leaflets apparently drove the enemy to retreat and defend the airport and other key points. At 11:26 five Russian and five Chinese military transport Il-76 planes arrived in theatre, escorted by fighters and AEW planes, followed at 11:38 by joint tactical airdrops on the left flank of the enemy, each consisting of 86 Russian and Chinese soldiers and 12 armored vehicles. In each case the vehicles dropped first and soldiers later, and the Chinese drop followed the Russian. The parachute of one Russian soldier failed, but he was saved by a colleague who grabbed him in freefall and the two landed safely with one parachute. About two dozen Chinese paratroopers required medical assistance upon landing.

Despite minor casualties, the paratroopers destroyed the enemy airport, and “immobilized and assumed control of the air corridor.” At 11:53 Chinese paratroopers began to land from helicopters on the right flank. Having regrouped and marched forward, the company broke through enemy defenses and secured entry for the mechanized regiment of the Chinese army. Thus, the joint Chinese-Russian forces, as described in the official press release, “successfully established a zone of forced separation on dry land.” Peace Mission 2005 concluded on 25 August with a review parade of the troops. At the ceremonial dinner Chinese Defense Minister Cao Gangchuan presented Sergey Ivanov with two kites, which the Russian Defense Minister promised to fly in Moscow.

International Reaction

On August 2, 2005 the General Staff of the Russian Armed Forces held a special briefing that explained that “Peace Mission 2005 would be conducted in accordance with the UN Charter, the norms of international law and the principles of respect for the independence, sovereignty and territorial integrity of other states and without affecting the interests of ‘third’ countries.” This somewhat less than concrete explanation only encouraged further speculation as to the true nature of the exercise.

It’s only natural that the execution of a Russian-Chinese sea and air attack immediately raised doubts regarding the “peacekeeping” character of the exercise. The first and most persistent theory, that the exercises presaged a PRC attack on Taiwan with the support of the Russian army and air force, was repeatedly denied by Russian and Chinese spokesmen. A more original theory was offered by the Japanese media: Russia and China were preparing for the joint occupation of North Korea in the event of “unforeseen circumstances.”

Official observers of the exercise included military representatives from the states parties of the Shanghai Cooperation Organization (SCO), including Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan in addition to Russia and China, as well as Mongolia, Iran, India and Pakistan, who enjoy observer status in the organization. Unofficial but extremely interested observers included South Korea, which made a big show of sending warships to the Yellow sea to “collect information.”

Comments by US representatives were diplomatic and restrained, careful not to rub against either Chinese or Taiwanese sensitivities. For example, on August 5 the deputy chief of operations of the Committee of the Chiefs of Staff Brigadier General Carter Hamm told journalists that the United States would monitor Peace Mission 2005 but did not view it in any way as a cause for concern. On August 16 the Chief of the State Department press service Shawn McCormack expressed hopes that the exercise would be conducted in a way that “supports regional stability which the US, China and Russia are all working for”.

Japanese unease was especially evident upon the conclusion of Peace Mission 2005. On September 28 Japanese Deputy Minister of Foreign Affairs Itiro Aisava flew to Khabarovsk on a special trip to meet with Commander of the Far East Military District, General of the Army Yury Yakubov. Aisava expressed Japan’s concern that the exercises “were not conducted in a manner that was transparent to the international community.” Yakubov assured his guest that Peace Mission 2005 was of a peacekeeping nature and was not a military operation in essence.

Analysis

The inappropriateness of the forces in play relative to the stated task of Peace Mission 2005 is painfully obvious. Let us recall that according to the scenario, ethnic conflict was breeding civil unrest on the Shandong peninsula. Russia and China launched a peacekeeping operation under a UN mandate to “separate the opposing forces.”

In fact, Russia and China launched an all-forces battle, including air and sea landings of land, air and sea forces, all according to the instructions laid out in field manuals of the 1970s and 1980s. These methods are hardly applicable to situations of ethnic conflict and even less so to modern counter-guerrilla operations. In actuality, the “separation of opposing forces” is done in an entirely different manner, as shown repeatedly during various exercises in Russia and elsewhere and at times under actual battle conditions.

Real peacekeeping operations as practiced during the past 20 years involved active counter-guerrilla and policing operations, the interception of communications, and preparations to receive and relocate refugees. An essential element in planning and executing peacekeeping operations includes consideration of the presence of a large number of peaceful civilians, mixed together with armed individuals and either providing them with support or, on the contrary, being victimized by their presence. None of these considerations were in evidence during Peace Mission 2005. Clearly, the deployment of missile destroyers, submarines, strategic bombers and AWACS is not appropriate for action against irregular groups of rebels, the typical actors involved in ethnic conflicts.

The obvious incommensurability of the active phase of the exercise with its stated purpose suggests that the exercise was in fact designed around an unstated scenario. In any event, we see that the active phase began with a blockade of the separatists from the sea, including the destruction of the “terrorist submarine.” In the context of a peacekeeping mission this could be explained only if one of the conflicting parties was expecting or receiving support via sea channels from a third party. However, this possibility was not mentioned in the scenario.

The next day the separatists regrouped on the beach to repel the marine landing supported by air forces. This might recall the Chechen defense of Grozny in 1995 and 1999, when they were sure of the superiority of their professional light infantry acting in mobile groups on familiar terrain, fighting against Russian army recruits grouped in formations designed to attach US tank division. But to imagine that the instigators of an “ethnic conflict,” such as Uyghur separatists, would as their first priority install defenses along the beach is unrealistic. The advantages of partisan warfare are clear, and it doesn’t matter how many

destroyers or tank landing and anti-submarine ships you have, such forces are unable to deal with irregular formations operating on their home territory.

Of course, during the course of the “ethnic conflict” in Somalia in the early 1990s, the American marines landed on the coast, but that was to a large degree a propaganda action with virtually no concrete military effect, a fact admitted by the American command. In any case General Aidid’s rebels were certainly not waiting on the beach with machine guns ready to repel the amphibious marine infantry!

Similar conclusions may be drawn with respect to the third day of military operations. One can only smile at the pretense of “separating enemy parties” by means of a landing of paratroopers followed by a motorized rifle division. Surely no commander in an actual peacekeeping operation would have a regiment of long range bombers drop high explosive charges on an “airport” belonging to bands of terrorists and separatists. The operations of Peace Mission 2005 scenario make sense only if they were meant to confront a regular army of an invading state, with perhaps the same or different goals as those described by the “peacekeeping mandate of the UN.”

Insofar as there are no grounds to consider either the Russian or the Chinese military to be unprofessional or given to take unreasonable decisions, it follows that the “peacekeeping” nature of the exercise was arbitrary, in line with current fashions, and had nothing to do with the real objectives of the exercise. And since Russia has on more than one occasion conducted its own peacekeeping exercises and participated in international operations, its military is fully aware of the specific requirements of such missions. If it were truly necessary, the PLA could have well learned from Russia’s Yugoslav, Abkhaz or TransDniester peacekeeping experience.

That said, there’s no reason to go to the other extreme and speculate about preparations for some kind of Sino-Russian expansion. Instead, it is more likely that the military was given a political task: to demonstrate the strengthening of ties between the Russian Federation and the Chinese People’s Republic. In their efforts to satisfy their political masters, the military commanders came up with a currently fashionable “peacekeeping” scenario. But when it came to designing the actual operational plans they saw no reason to reinvent the wheel, so they just used the tried and true templates of past exercises: artillery and air strikes, sea and air landings, “seizing the beachhead” and “securing entry of the second echelon.” To fulfill this political task, the assortment of military exercises characteristic of the second half of the twentieth century worked perfectly well even today.

Does Russia Need the European Cosmodrome?

Andrei Ionin

Agreement on Launching Russia's Carrier Rocket from the Kourou Space Center

On April 11, 2005, Anatoli Perminov, Head of Russian Space Agency (Roscosmos), and Jean-Yves Le Galle, Director-General of Arianespace, completed four-year negotiations by signing a contract detailing the launching of a Russian Soyuz-ST carrier rocket from the European Space Center in Kourou, French Guiana (Centre Spatial Guianese). As a result, the parties can now commence practical implementation of the agreement, which has received solid support from a number of intergovernmental agreements between Russia, France, and the European Space Agency (ESA).¹

The cost of the signed contract is EUR 121 ml. These funds shall be used as payment for work performed by Russian enterprises, distributed as follows: EUR 90 ml for equipment of new technical and launching facilities and the remaining EUR 31 ml to be directly used for development and testing of the Soyuz-ST launch vehicle.² This launcher is based on the Soyuz-2 carrier rocket adapted to tropical conditions. Soyuz-2, in its turn, is a new, completely Russian modification of Korolev's R-7A "Semyorka" rocket (the preceding Soyuz launchers were equipped with Ukrainian-made control systems). Two versions of the Soyuz-2 are being developed: one based on the "old" three-stage propulsion system (Phase 1a), the other with a new and more powerful propulsion system (Phase 1b). It is planned to use both options in the Soyuz-Kourou Project.³

The Russian contribution will be financed by Arianespace with a loan raised from the European Investment Bank against guarantees issued by the French Government.⁴ The total cost of the Soyuz-Kourou Project is estimated at EUR 344 ml with the majority (EUR 223 ml) dedicated to the development of Space Center infrastructure. These funds will be distributed among European companies strictly pro rata of their respective countries to the Program budget.

According to details of the agreement, the first launch of a Soyuz-ST should take place three years after conclusion of the contract, i. e. in 2008, with a total of 50 launches projected for the subsequent 15 years.⁵ Arianespace, the project's commercial operator,⁶ has already begun signing initial contracts.⁷

The European and Russian media, as well as officials on both sides, have invariably given positive comments about the project. Without denying the significance and even inevitability of Russia's and the Russian space industry's cooperation with other space powers and foreign companies, the project should, nonetheless, be viewed in a broader perspective, and the possible pros and cons for each side should be assessed.

Position of Soyuz-ST in the Space Transportation Market

First of all, we should define the perspective niches for the Soyuz-ST in the market of space transportation services as well as assess its capability for occupying those niches in a competitive environment. Taking into account the key market trends in the field of traditional applications concerning Soyuz launchers, three main assignments should be considered:

- Putting payloads into geostationary (GEO) or geotransitional (GTO) orbits;
- Putting payloads into solar synchronous orbits (SSO);
- Launches to support ISS activities.

It should be noted that for the first two assignments the Soyuz-ST would be used in its four-stage version in combination with the Fregat upper stage developed by Lavochkin Design Bureau.

The GEO market has a high priority, enough to mention that worldwide one-third of all satellites and an overwhelming majority of commercial satellites (e.g. 13 of 15 commercial satellites launched in 2004) are launched into GEO.⁸ Two contradictory tendencies are observed in that segment. The first one is a historic tendency for more powerful (and hence, heavier) communication satellites with increased functional capabilities. If in 1999 a mere 5% (one of 22) of spacecrafts (SC) had a mass exceeding 4 tons in the geo-transitional orbit; by 2004 their share had already grown to 60%. That trend is supported by the creation of a powerful new generation of launch vehicles such as Delta 4 (Boeing), Atlas 5 (Lockheed Martin) and Ariane 5 (EADS) which have replaced the aging predecessors Delta 2, Atlas 2 and Ariane 4 respectively.

At the same time, an opposite trend is also visible – the development and launching of full-scale communications

satellites with less than 2.5-ton mass into GTO (less than 1.5 tons in GEO). This has become possible only in recent years due to the advent of several new space technologies, above all the creation of light transmitting systems with low unit weight per transponder and improvement of electric propulsion systems that combine long life (thousands of work hours) and high specific impulse. The use of small spacecraft also offers direct economic advantages: total project cost is cut, including through the use of lighter and, consequently, less expensive launchers, the time of project realization is shortened and conditions for improving space communication systems are simplified. It all makes small satellites an efficient tool for accomplishing a wide range of tasks such as launching communication satellites for governments or companies having some orbital assets but low on budget, or temporary build-up of capacity in a certain orbital position in GSO, e.g. for communication support of troops in a regional conflict. Thus, the market for launching small GEO satellites has substantial growth potential and it is within the segment in which Soyuz-ST is going to operate (Fig. 1).⁹

Solar synchronous orbits have one specific feature: they are walking orbits whose orbital plane processes with the same period as the planet's solar orbit period. In other words, the sunlight illumination angle of the earth's surface point located directly beneath the SSO satellite is constant. It creates optimal conditions for Earth observation, which is why SSO satellites are widely used in a number of Earth observation applications, from mapping through oceanography, meteorology, and optical intelligence missions. Over the last ten years more than 120 satellites with a mass varying from 100 kg to 5 tons have been put into solar synchronous orbits, which is evidence showing substantial potentiality of that market segment.

Since the launch site location (its geographic latitude) does not offer substantial advantages for SSO launches, the capabilities of Soyuz-2 launchers are practically the same whether launched from Russian space centers or Kourou. The position occupied by Soyuz-2 (Soyuz-ST) alongside a number of other launchers in the SSO launch market is shown in Fig. 2 (for 700 to 800 km orbits).

As to the ISS, in recent years five to six Soyuz launches annually have taken place carrying Soyuz-TMA spacecraft or Progress cargo craft to support vital activities of the International Space Station (ISS).

After development of the Soyuz-2 is fully completed, it will most likely launch manned missions. To support that eventuality, upgrading one of the two Soyuz launching pads is presently underway in Baikonur.¹⁰

The question whether Kourou is going to be used for launching manned missions is still open, although ESA continuously expresses keen interest in this option.¹¹ The key objections raised by the Russian side are by far not

merely technical. First, the geographic location of Kourou fails to offer any obvious advantages as compared to Baikonur¹² in terms of ISS missions. Secondly, expensive infrastructure will have to be created for launching manned missions from Kourou; new methods and tools will have to be perfected for rescuing cosmonauts in the event of an abortive launch as presently they are oriented on evacuation from dry land while evacuation conditions at Kourou will largely be effected from the ocean surface. Nonetheless, these facts did not prevent Nikolai Sevastyanov, the new President of RKK "Energia", the enterprise that created both the Soyuz-TMA and Progress spacecraft and the key Russian organization responsible for manned missions, from saying that the new six-seater Clipper spacecraft as well as the new (?) launcher and subsequent new launch and support facilities would from the outset be developed with parameters for use at the European Space Center as well.¹³ Undoubtedly, launches from Kourou are bound to substantially increase the commercial potential of the Soyuz-2 launcher.

The Project from the ESA Viewpoint

The launch of an Ariane 4 medium launcher in February 2003 brought to an end ESA's most successful program to date, culminating in 113 successful launches out of 116 in a time span of 15 years; while the launcher's reliability based on the last 10 years of operation had reached a phenomenal 99%.¹⁴ Now, due to the retirement of Ariane 4, ESA and Arianespace have at their disposal only the Ariane 5 heavy launcher with a launching cost in excess of EUR 130 ml. The launcher is available in two versions: Ariane 5G and the newer and more powerful Ariane 5ECA. So far, the launch vehicle has failed to demonstrate a high degree of reliability with 3 of 20 launches unsuccessful from 1996 to 2004. As a consequence, Arianespace, the company that previously was the undisputed leader of commercial launches with 50% of the market, is currently in a down turn as the number of Ariane launches has now substantially decreased. For instance, in 2003 only four launches were made instead of a planned 6 or 7 and in 2004 that number was only 3, the company's worst performance since 1987. Another European launcher, Vega, a light launch vehicle developed by a consortium of European manufacturers lead by Fiat Avio, is not likely to be ready before mid-2007 and would require at least EUR 261 ml to be complete.¹⁵

Competitors were quick to take advantage of the difficulties experienced by Arianespace. For example, International Launch Services (ILS), controlled by Lockheed Martin with Atlas 5 and Proton-M launchers, has signed more commercial contracts than all its competitors together and today as a result controls nearly 70% of the

market.¹⁶ Indeed, the dominance of ILS is so that it has forced other major launch providers –Arianespace, Sea Launch (marketed through Boeing Launch Services, BLS), and Mitsubishi Heavy Industries (MHI) – to take the unprecedented step of joining in an agreement on mutual support in launching commercial satellites, aptly named Launch Services Alliance.¹⁷

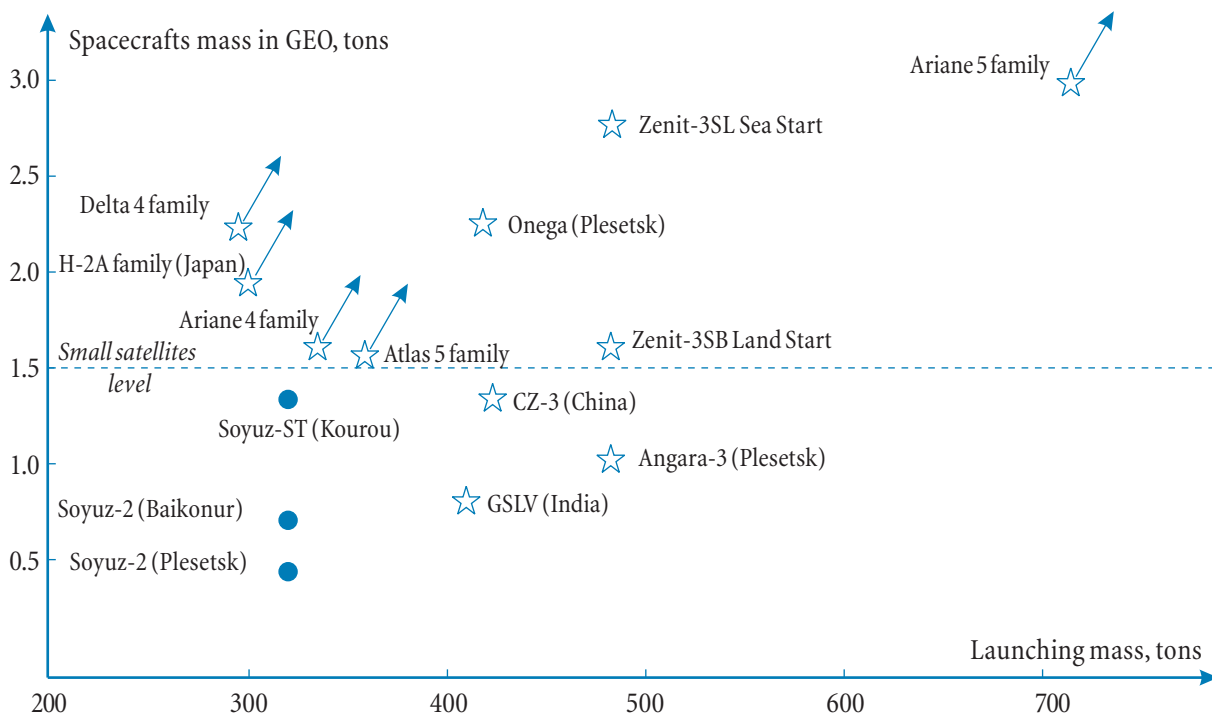
Analysis shows that the existing situation is connected not only with the current crisis on the launch services market and difficulties experienced in completing the development of Ariane 5 but also may be attributed to marketing miscalculations by Arianespace itself. Indeed, Ariane 5 is being developed with the purpose of simultaneously putting into orbit several satellites at once. The capabilities of Ariane 5G (6.8 tons in Geo-transitional orbit) allow the lifting of either two medium communication SC or bygone large and one small satellites at a time; Ariane 5ECA (10.5 tons in geo-transitional orbit) and the perspective Ariane 5ECB (up to 12 tons in geo-transitional orbit) would be able to lift two large or three medium satellites.¹⁸ Therefore, applying the conditions of the current “customer-dominated market”, given the difficulty of ensuring simultaneous availability of several satellites for launch, as well as a slowdown in the trend of

satellite mass growth (due to achievements in satellite technologies), the Ariane 5 launcher badly needs to be complemented with a reliable and inexpensive “junior partner” that would be able to support the execution of small communication SC launch contracts.¹⁹

Let us consider how the Soyuz-Kourou Project can be of help in that situation. After commencement of the Soyuz-ST and Vega launches from Kourou the EU and ESA will obtain access to space with all classes of launchers: heavy, medium and light, thus attaining par with Russia and the United States. It would allow Arianespace, as the operator of all three types of launchers, to meet market demands in a flexible and economically efficient manner. In addition, it would create the basis for the planning and development of a European defense infrastructure in space, which is absolutely essential for any modern armed forces.

As noted, the Soyuz-ST launcher will occupy the most advantageous position in the market. Indeed, it would be able to cover all segments of the market including the lifting of up to 1.5 tons in GEO orbit (Fig. 1). The emergence of such an inexpensive and reliable launcher combined with the capabilities of Arianespace would provide an additional growth incentive to that segment. The only competitor will

Fig. 1 Position of Soyuz-ST Among GEO Launch Vehicles



Source: diagram by author

be the US-Russian Land Launch project (the first launch of a Zenit-SLB from Baikonur is planned for the second quarter of 2007).²⁰ India's GSLV and China's CZ-3 are not likely to offer strong competition because their launching rate is low (1 to 2 launches a year) and they are encumbered with launches under their national space programs. Figure 1 also makes it quite apparent that Ariane 4, if continued, would meet severe competition from light versions of both Delta 4 and Atlas 5.

The Soyuz-ST launcher would also occupy a sound position in the SSO market where, while completely overriding the capabilities of Ariane 4, it would be able to execute up to 90% of potential contracts by putting into orbit multiple satellites with overall mass of up to 5 tons (Fig. 2).

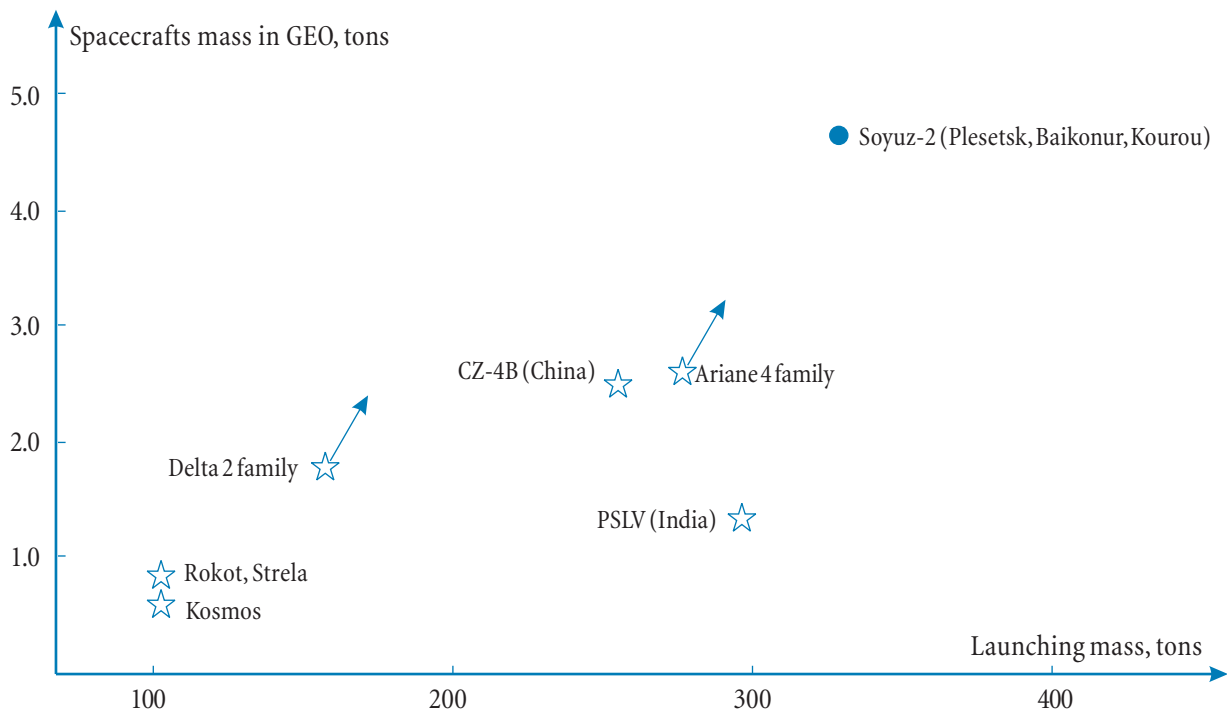
By the time of the first launch from Kourou, the Soyuz-2 launcher will have completed several test launches. The first successful launch took place from Plesetsk on November 8, 2004; the launch from Baikonur is planned for 2006.²¹ In that way, the main risks and costs related to flight tests of the new launcher (which are particularly heavy in initial launches) would be fully incurred by the Russian side while the European partners would receive a partially tested launcher. The situation with the Fregat booster is even more favorable. As of July 2005, it had completed six

successful flights and by commencement launches from Kourou it's testing should almost certainly be completed.

Thus, ESA and Arianespace would receive a medium class launcher at the cost of a Vega light launcher while it is well known that upgrading launcher class increases development costs in geometric progression. (Indeed, just the initial allocations to the European industry for the Vega Program were planned at a level of EUR 335 ml).²² This is due to the wide use of existing technologies and components of the Ariane program, industrial and launching infrastructure of Kourou space center, in particular the launch pad of Ariane 1 and control center of Ariane 5. The comparatively inexpensive solution concerning the lack of a medium-class launcher would allow ESA to concentrate its financial, material, and intellectual resources on the priority task of increasing its competitive edge and development of Ariane 5 program, which is especially pressing in view of successes achieved by US competitors: developmental testing of the new heavy launchers (Delta 4 and Atlas 5) have been accident-free.

As to the launch cost, Soyuz-2 is by far more preferable than Ariane 4. The contract cost (even for a four-stage version) is planned at USD 42 ml (EUR 35 ml)²³ while the actual cost of Ariane 4 amounted to USD 60 ml to 100 ml per launch.

Fig. 2 Position of Soyuz-ST among SSO Launch Vehicles



Source: diagram by author

Implementation of the Soyuz-ST program will result in increased incomes of European companies not only due to augmentation in the number of annual launches from the current level of 2-3 to the planned figure of 3-4 but also owing to the paid infrastructure services of the European Space Center.

In addition, commercial success of the program is likely to be further promoted by a number of other factors, including the following:

- Soyuz-ST launcher, as the descendant of the legendary “Semyorka” is potentially the best-known space brand;
- Russian manufacturers of the Soyuz-ST and Fregat already have substantial experience of adapting their products to launching commercial payloads;
- The propulsion system of the Soyuz-ST launcher (excluding that of Fregat) uses kerosene and liquid oxygen, which is more environment-friendly than the propellants used in Ariane 4 with its first two stages using highly toxic components. Although Kourou Space Center is located outside Europe, it is a factor which, given the influence of European environmentalists’ movements, can only make the project more attractive to public opinion;
- Given the difficulties experienced with the Ariane 5 launcher and the multi-million losses of EADS Space²⁴ (in 2004 the period of losses was overcome and profits amounted to EUR 10 ml), the successful launch of a Russian rocket from Kourou might well have a positive impact on the ESA image, promote a wide political acclaim and attract public attention to European space programs.

Does the Soyuz-ST project have any negative aspects for ESA? Apparently, not, if we don’t attribute the EUR 223 ml. spent by ESA members on contracts with their respective European companies and EUR 121 ml. spent by Arianespace to fund Russian industry, which would return to Arianespace from commercial launches of Soyuz-ST.

The analysis allows us to draw the following conclusions:

- From any standpoint the Soyuz-ST Project is both necessary and profitable for ESA and Arianespace;
- The reasons behind termination of the outwardly successful Ariane 4 program have become evident and it is clear now why the Soyuz-ST was selected as the “junior partner” of Ariane 5 as opposed to, for example, the US Delta-2 launcher (that option was considered in 1996),²⁵ the Ukrainian Tsyklon-4²⁶ or other design options of “Semyorka” – Avrora and Onega.²⁷ Apparently, it was neither a spontaneous, nor thoughtless choice – in totality of their characteristics, all of the said launchers, including Ariane 4, are inferior to the Soyuz-ST.

The Project from the Russian Viewpoint

What are the gains of the Russian side derived from Soyuz-ST launches from Kourou? It is all the more important to know, since the first project – the one with Starsem – has not yet been assessed and still Russia takes the course of expanding cooperation. Each official comment quotes two seemingly apparent advantages of the project’s realization:²⁸

- Noticeable increase of production volumes of both Soyuz-ST launchers and Fregat boosters;
- Attraction of substantial extra-budgetary funds to the Russian space industry.

Let us consider these two advantages more attentively. It is planned to execute 50 Soyuz-ST launches within 15 years. However, these are just projections the realization of which will depend not only on the intentions of Russia and ESA but also on the state of the market and success of Arianespace activities in said market. The principal consideration, however, lies elsewhere: since it is more advantageous to launch a Soyuz-2 (Soyuz-ST) to GEO from Kourou than from Baikonur (Fig. 1) while for launches to SSO the location of space base is largely not important, Russia will not be able to raise any substantive objections when Arianespace takes the following and obvious step by transferring all commercial launches of Soyuz to Kourou. Consequently, the 3 to 4 planned Soyuz launches from Kourou shall be conducted not over and above but instead of the present 2 to 3 launches from Russian cosmodromes; in other words, the real increase of Soyuz production volumes will not be more than 1 or 2 launch vehicles per annum. Given that over the last five years the average launch rate of the “Semyorka” series has been about 10 launches per year, after the project hits the road the production of “CSKB-Progress” would grow by 10 - 20%. Although it is growth, it can hardly be regarded as a breakthrough, compared to annual 50 launch vehicles some twenty years ago.

In the course of the project Russian industrial enterprises will receive EUR 121 ml in the form of equipment delivery orders and for completion of Soyuz-ST development. Since comparison is the mother of cognition, let us recall that Russia’s annual expenditures for the lease of Baikonur amount to nearly EUR 100 ml. and Ariane 5G launch contract costs more than EUR 110 ml.²⁹ It is possible that Russia’s total profit would grow due to the number of commercial launches increasing by 1 or 2 per annum. But to be sure about that, one must know how the profits derived from launches will be distributed in the new project and how much Russia’s share will change (or, rather, diminish) taking into account that launches will be performed not from a Russian cosmodrome but from the European Space Center. One should also remember that Arianespace has yet to repay credit and that would be

another serious reason for squeezing the Russian part of profits derived from launching services.

The analysis shows that Russia may obtain other benefits from implementation of the project. First and foremost, Russia would diversify its economic and political risks in the commercial launch services market by selecting all the leading players in the world space industry as its partners in various projects. Indeed, marketing of the Proton-M and subsequently launch vehicles of the Angara family will be performed by ILS, a joint venture with Lockheed Martin. The Russian-Ukrainian launcher Sea Launch Co. of which Boeing is the major shareholder promotes Zenit-3SL to the world market. And now, following realization of the Soyuz-ST project, Roscosmos and Russia's industrial enterprises are going to become partners of European corporations Arianespace and EADS.³⁰ It is a truly significant fact, since it is quite evident that Russian manufacturers of launch vehicles are unable now and will for a long time remain unable to, without a serious Western partner, enter the launching services market and stay therein.

Also, Russia would obtain a new launch site for its spacecraft; for instance, small geostationary communication satellites. However, one could hardly expect any preferences on the part of Arianespace; most likely, everything will be done on equal terms and then it might well turn out to be more advantageous for Russia to launch its satellites from its own space center.

It is possible that realization of the project is stipulated by certain political agreements between Russia and the European Union or between Russia and France: after all, the project perfectly fits the "European choice" we have been informed about. It is not a coincidence that one of the four "road maps" approved by leaders of Russia and the EU in May 2005 ("Common European Economic Area") includes a chapter on Space.³¹

Now let us see what Russia is going to lose after Soyuz-ST launches start. As discussed above, after the beginning of launches from Kourou, commercial Soyuz launch vehicles are bound to abandon Baikonur, which would mean direct losses connected with the downtime of launch infrastructure and personnel. In the meantime it is known that irrespective of the number of launchings from Baikonur, Russia will pay Kazakhstan the annual rent of USD 115 ml until 2050. In addition, Russia must carry out work connected with environmental safety and land reclamation, as well as resettlement of Russian citizens.³² Thus, following realization of the Soyuz-Kourou project, commercial profits derived from Baikonur are bound to decrease while expenditures connected with it will remain at the same level.

A Soyuz-ST backed by the capabilities of Arianespace would compete with other Russian launch vehicles. For

example, the commercial prospects of Angara-3 (Fig. 1) will certainly deteriorate. In the meantime, the chances of Russian light launchers, such as Kosmos, Rokot and Strela winning commercial contracts for SSO launches will become thinner (Fig. 2) and the chances for extra-budgetary funding of more powerful versions of the "Semyorka" family rockets (Avrora and Onega) will become miserable. In other words, as a result of the new round of competition between Lockheed Martin, Boeing and EADS, where Soyuz-ST would side with the latter, a mere redistribution of launch service market between different Russian launch vehicles will take place and, consequently, Russian space industry will not substantially increase its commercial revenues.

In addition, it should be acknowledged that on the whole the Soyuz-Kourou program goes along with an "inertial" strategy of Russian space industry development and would not lead to any technological breakthrough since it tends to replicate former achievements, albeit in a new environment. At the same time the project would permit our partners to free their resources and concentrate them on development of new technologies.

What's Next?

Based on the above, one could assert that the Soyuz-Kourou Project is advantageous for ESA, EADS and Arianespace from any viewpoint, since it permits the resolution of several high priority issues of the European space industry and enhances its competitive edge in a comparatively short time in an economically efficient manner without any serious technological or other problems. For the European side the project was, in effect, a no-alternative decision and, anyway, it was not an act of charity aimed at supporting the Russian space industry. On the other hand, implementation of the project offers both positive and negative consequences for Russia. Besides, Russia does have alternative programs.

That said, this should be the basis of Russia's strategy at the negotiating table. For example, Russia may reasonably demand an increase in its share of earnings from launch contracts or, being aware of the fact that a human flight program has vital political importance for ESA, Russia may agree to launch cosmonauts from Kourou, subject to the fact that Russia is paid not the cost price, but a price taking into account more than 44 years of investment which has resulted in the know-how to make said project possible. Also, compensation for partial "distraction" of launches from the leased Baikonur is a possibility. It would not be a sin to take a lesson of pragmatism from the other party. After all, it can hardly be considered a coincidence that the French Government provided guarantees to Arianespace

to borrow for the Soyuz-Kourou program only after the first and successful launch of Soyuz-2, which delayed the launch of the program for more than a year.

What remains to be answered is one last, more general but, in essence, key question: how close will the Soyuz-Kourou project bring the Russian space industry to achieving its main goal? Does that goal really consist of expansion of the Russian-European space dialogue and development of some kind of a space “road map” or Russia’s intention to become ESA’s eighteenth member-state, as it was jokingly (or seriously?) suggested by Mr. Jean-Jacque Dordin, Head of ESA, a year ago?³³ Apparently, the Russian space industry is not doomed to that kind of cooperation both by its history and its potentialities.

Or, maybe, the goal is to earn money by commercial launches at any cost to obtain extra-budgetary funds for the space industry? But then, why with a balanced national budget (a necessary precondition) and public consensus on priority development of the Russian space technologies (a sufficient condition), which is supported both on the top level and by ordinary people (a nearly unique case in today’s Russia), the new Federal Space Program for 2006-2015 put forward by Roscosmos is “unambitious” and “lacks projects that could be realized through public-private partnership with funding from the Investment fund, which is being formed now”?³⁴ Furthermore, analysis undeniably demonstrates that the volume of resources made available to the industry is not the key problem; instead, it is the efficiency of formulating objectives, distribution and control patterns.³⁵

Or, alternatively, is Russia focused on maintaining the top position in the world in terms of the number of space launches or preserving the numerical strength of the Russian orbital group, which Roscosmos is so proud of?³⁶ But it is evident that neither the number of satellites in orbit (today Russia has about one hundred orbited spacecraft), nor the number of annual launches (in 2004 Russia

performed 43% of the world launches, United States 30%, and ESA 6%) can secure achievement of the principal goal, e.i. target efficiency of space-based systems that is completely dependent on the satellite technologies applied therein. Only these technologies can provide Russia with:

- Efficiency of military and dual-purpose systems ensuring just necessary preconditions for the country to maintain its political status;
- Entry to the satellite manufacturing market, which is admittedly much wider and more profitable than the launching services market;
- Independence from Western partners in terms of commercial use of own launchers.

It is satellite technologies where Russia has experienced problems originating yet in the Soviet era.³⁷ It is quite easy to see that the Soyuz-Kourou project has nothing to do with the development of those technologies. Likewise, other joint programs of Roscosmos and ESA also have little to do with those technologies since they largely concentrate on matters where Russia already has highly competitive technologies, namely: the creation of perspective launchers, including reusable ones and their propulsion systems, as well as manned missions.³⁸

At the same time, in the spheres where ESA can manage without the assistance of Russia, the latter has been lacking in offers of cooperation. For instance, ESA has refrained from large-scale cooperation with Russia in the development of Galileo navigation system; also Russia was not invited to participate in the development of a light European launch vehicle (Vega) or in the ultra-light European launcher project, although Russia already had a launcher of that class (Start-1). That is why we can and must approach Russian-European space cooperation in a different, more careful manner. Otherwise, Russian space industry might well be strangled in such “friendly embrace”.

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2 Afanasyev I. Dogovor o zapuskah “Souzov” iz Kouro podpisan // *Novosti kosmonavtiki*, #1, 2004, pp. 36–38.

3 Proekt “Soyuz” v Gvianskom kosmicheskom centre // www.federspace.ru, 11 Apr 2005.

4 Afanasyev I. “Ural” i perspektivnye evropeiskie nositeli // *Novosti kosmonavtiki*, #5, 2005, pp. 52–54.

5 Proekt “Soyuz” v Gvianskom kosmicheskom centre // www.federspace.ru, 11 Apr 2005.

6 Marketing of launches of Soyuz carriers from Russian space centers is implemented by Starsem founded in 1996 (Space Technology Alliance based on R-7 “Semyorka” launch vehicles). Starsem shareholders are EADS (35%), Arianespace (15%), Russian enterprise “CSKB-Progress”, which produces Soyuz carriers (25%), and Roscosmos (25%). From 1999 till present Starsem has made 12 commercial launchers of SOYUZ carries.

7 Afanasyev I. “Ural” I perspektivnye evropeiskie nositeli // *Novosti kosmonavtiki*, #5, 2005, pp. 52–54.

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Russian Joint Military Exercises with Foreign Countries in 2005

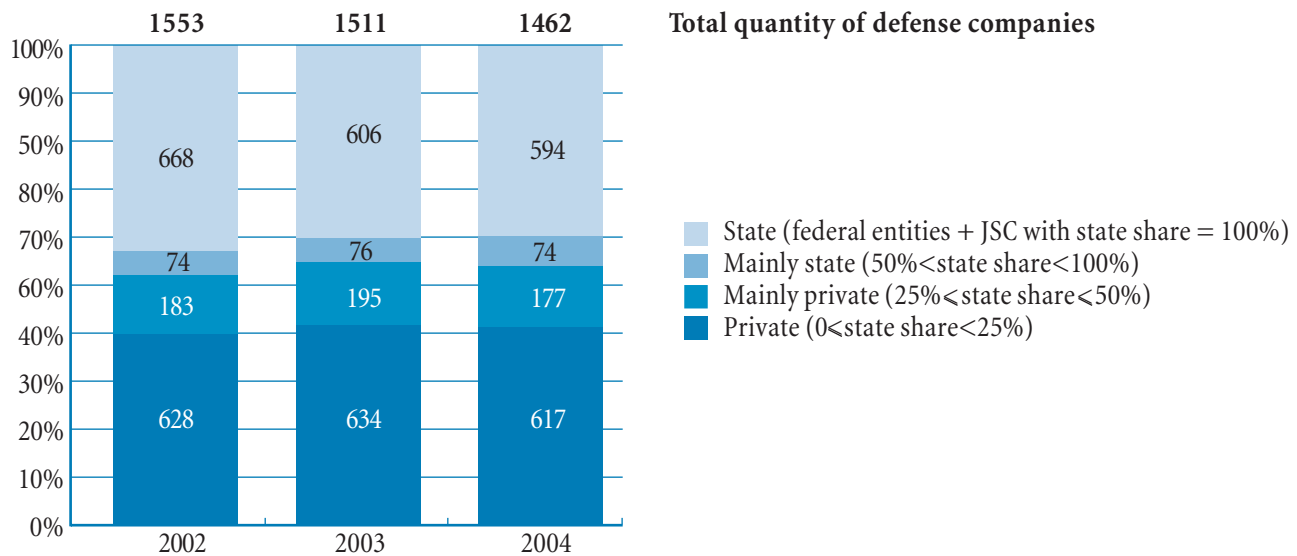
Title	Period	Location	Task	Foreign participants	Russian participation
Arrow of cooperation 2005	March 14-23	Airbase De Peel (the Netherlands)	Computer generated simulation of battle ground ballistic missile defence	NATO (Germany, the Netherlands, the USA)	50 specialists
Rubezh 2005 (Boundary 2005)	April 2-6	Jeshakmajdon firing range (Tadjikistan)	Counter-terrorism operation: protection of sovereignty and territorial integrity of Tadjikistan	Armenia, Belarus, Kirghizia, Kazakhstan, Tadjikistan	Special forces group, reinforced company of 76 th Airborne Division, battalion group of 4 th Military Base located in Tadjikistan, 303 rd Separate Helicopter Squadron, 670 th Air Group
Strategic command post rehearsal of CIS' air defence forces	April 5	CIS	Exercise: joint actions of air defence forces and air forces, interception of air space violators	Armenia, Belarus, Kazakhstan, Kirghizia, Tadjikistan, Ukraine, Uzbekistan	Units and troops of air forces and air defence forces
Black Sea Partnership	April 8	South Western part of the Black Sea	Exercise: joint maneuvering, communication, search & rescue operations	Bulgaria, Georgia, Romania, Turkey, Ukraine	Tank landing ship "Cezar Kunikov"
BlackSeaFor 2005	April 4-27, August 8-27	Black Sea	Cooperation in counter-terrorism and search & rescue operations, joint maneuvering, antiboat, antisubmarine and air defence	Bulgaria, Georgia, Romania, Turkey, Ukraine	Tank landing ship "Yamal" (Black Sea Fleet)
—	April 18	Moscow	Computer generated simulation of ballistic missile defence	The USA	4 th Central Institute for Scientific Research of the Ministry of Defence
—	May 4	South Western part of the Black Sea	Exercise: joint maneuvering, communication, search & rescue operations	Turkey	Tank landing ship "Azov", frigate "Pytlivy" (Krivak class)
Torgau-2005	May 23 – June 3	Solnechnogorsk (Russia), Grafenwoehr firing range (Germany)	Defence combat action against third party in adherence to UN resolution	Germany	52 officers and 85 soldiers of composite motorized rifle company
Baltops-2005	June 2-17	Baltic Sea	Antiboat, air defence and search & rescue operations, board and search of vessel in violation of UN embargo	Germany, Denmark, Latvia, Lithuania, Poland, the USA, Sweden	Destroyer "Nastojchivy", tank landing ship "Kaliningrad"
—	June 10	Bay of Peter the Great (Vladivostok)	Search & rescue of vessel under distress	Japan	Destroyer "Admiral Vinogradov" guided missile patrol boat, support aircraft and helicopters
—	June 14	Baltic Sea	Exercise: joint maneuvering, communication, search and destroy of naval mines	France	Coastal minesweeper "Alexey Lebedev"
Sorbet Royal 2005	June 17-24	Bay of Taranto (Italy)	International submarine rescue exercise	The UK, the Netherlands, Greece, Israel, Spain, Italy, Canada, Portugal, the USA, Turkey, Ukraine, France, Sweden	Tug "Shakhter" combat divers of the Black Sea Fleet 328 th Special Search & Rescue Unit of the Russian Navy

Title	Period	Location	Task	Foreign participants	Russian participation
— Frukus 2005	June 21 June 22-24	Goteborg (Sweden) Bay of Biscay	Amphibious assault landing Exercise: joint cruising, alarm and control signaling, cooperation in countermeasures against international terrorism and piracy	Sweden The UK, the USA, France	Tank landing ship “Kaliningrad” Destroyer “Admiral Levchenko”
Bojevoje Sodruzhestvo 2005 (Comradeship-in-Arms 2005)	June 24 – July 10, August 5-12, August 22-31	Ashuluk and Telemba firing ranges (Russia), Saryshagan (Kazakhstan)	Exercise: joint support to Armenia against armed gangs and terrorist groups, air defence and air training	Armenia, Belarus, Tajikistan	MiG-29 fighters, Su-25 attack aircraft, Su-24 fighter-bombers, S-300 SAM systems
—	July 5	Bay of Peter the Great (Vladivostok, Russia)	Exercise: joint maneuvering and communications	The USA	Destroyers “Admiral Vinogradov”, “Marshal Shaposhnikov”, “Admiral Pantelev”
—	July 6	South Western part of the Black Sea	Exercise: joint maneuvering and communications	Turkey	Guided missile cruiser “Moskva”, frigate “Pytlivy” (Krivak class), tanker “Ivan Bubnov”
—	July 11	Mediterranean Sea	Exercise: joint maneuvering and communications, examination maritime violators	Italy	Frigate “Pytlivy” (Krivak class)
—	July 18-22	Pskov (Russia), Zweibrücken (Germany)	Cooperation of airborne forces in counter-terrorism and rescue operations	Germany	23 rd Platoon of 4th Parachute Regiment of 76th Airborne Division
Kaspiy - Antiterror 2005 (Kaspiy – Counterterrorism 2005)	August 16-19	Aktau (Kazakhstan)	Joint investigative work against terrorists, cooperation in control headquarter for hostage extraction, counter-terrorism operations at energy facilities, post-attack recovery operations	Kazakhstan, Ukraine	Counter-terrorism units
Peace Mission 2005	August 18-25	China, Shandun Peninsula	Peacemaking in area suffering from ethnic conflict	China	Destroyers “Burny” and “Marshal Shaposhnikov”, tank landing ship BDK-11, auxiliary ships, 17 aircraft of various types, units of the 76 th Airborne Division
—	September 7-14	Firing range named after Marshal Bagramyan (Armenia)	Tactical cooperation	Armenia	Motorized rifle regiment of 102 th Military Base
—	September 19-24	firing range “Fareesh” (Uzbekistan)	Elimination of terrorists in mountainous terrain	Uzbekistan	Operations command group, special forces team, units of 76 th Airborne Division
Indra-2005	October 10-20	India, Indian Ocean	Counter-terrorism land sea operation	India	Guided missile cruiser “Varyag”, destroyers “Admiral Tributs”, “Admiral Pantelev” tanker “Pechenga”, tug “Kalar” reinforced company of 76 th Airborne Division

Source: table by Mikhail Lukin

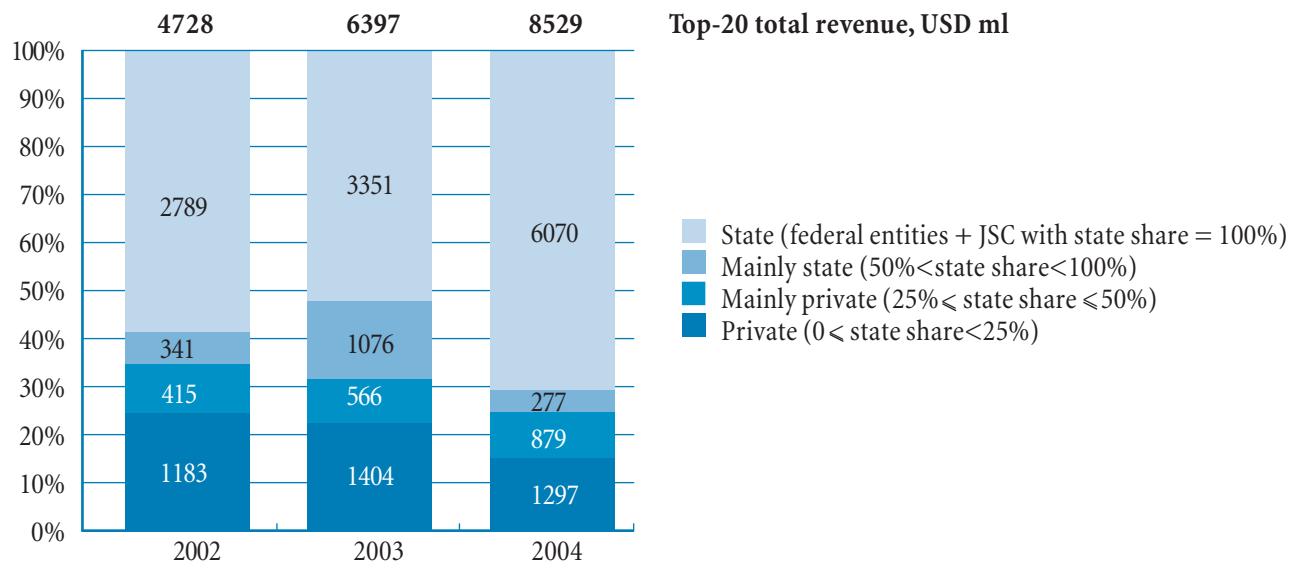
Ownership Structure in Russian Defense Industry

Graph 1. Dynamics of Ownership Structure in Russian Defense Industry



Sources: Russian information agency "TS VPK"; CAST estimates

Graph 2. Dynamics of Russian Defense Top-20 Total Revenue Broken Down in Ownership Structure



Sources: Russian information agency "TS VPK"; CAST data and estimates

Identified Contracts for Delivery of Russian Arms Signed in the First Half of 2005

Exporter	Importer	Date of signing	Event transcription	Value of contract	Notes
Russia	China	April 2005	Contract for delivery of RD-93 turbofan engines for new Chinese-Pakistan FC-1 fighters	USD 267 ml	Contractor – Klimov Plant (part of MiG Corporation). Contract prohibits China from re-exporting aircraft to other countries, including Pakistan
Russia, France		11 Apr 2005	Contract between Russian Space Agency (Roscosmos) and Ariespace for financing of Soyuz-Kourou Project	EUR 121 ml	According to the contract, Ariespace will credit Russian companies, which are to develop Soyuz-ST space launch vehicle, launching site and technical facilities in Kourou. First launch of Soyuz-ST is expected in 2008
Russia	Iran	30 Jan 2005	Contract for design and launch of Iranian communications satellite – Zohreh	USD 132 ml	Contractor – Scientific Production Association named after Reshetnyov
Russia	Venezuela	10 Mar 2005	Contract for delivery of nine Mi-17 and one Mi-26T helicopters	USD 120 ml	First six helicopters will be delivered in half a year, the rest – in following three months
Russia	Venezuela	10 Jun 2005	Contract for delivery of five Mi-35M attack helicopters	USD 81 ml	Contractor – Rostov-on-Don helicopter building plant “Rostvertol”. Deliveries are expected in 2005-2006. All in all Venezuela is going to purchase from Russia 44 helicopters in five years
Russia	India	8 Feb 2005	Contract for modernization of Kilo class submarine (Project 877EKM) of Indian Navy	USD 80 ml	Contractor – State machine building enterprise “Zvezdochka”. The company has already modernized three Indian submarines of the same project in 1999, in 2002 and in 2005
Russia	Eritrea	14 Apr 2005	Contract for delivery of 80 Kornet-E ATGM systems (AT-14)	n/a	Contractor – Tula Design Bureau
Russia	Venezuela	17 May 2005	Contract for delivery of 100 000 AK-103 assault rifles	USD 54 ml	The order should be completed before March 2006
Russia	Mexico	February 2005	Contract for delivery of 22 “Ural” trucks	n/a	Deliveries are expected in 2005
Russia	Spain	June 2005	Contract for development of self-protection system for commercial aircraft	USD 25 ml	Contract was signed between All-Russian Institute for Scientific Research in experimental physics and unnamed Spain company
Russia	Peru	21 Jun 2005	Contract for repair and overhaul of 13 Mi-17 helicopters	USD 13 ml	
Russia	Mexico	April 2005	Contract for provision of technical support for Mi-17 helicopters of Mexican Navy	n/a	The contract was announced at presentation of Russian helicopter service center in Mexico
Russia	India, China	30 Jun – 1 Jul 2005	Russian shipyard “Admiralteyskie verfi” signed contracts with India and China for spare parts deliveries for Kilo class submarines (Project 877EKM)	Several hundreds thousand USD	

Source: Russian press

Identified Transfers of Russian Arms Signed in the First Half of 2005

Exporter	Importer	Date of signing	Event transcription	Value of contract	Notes
Russia, Belarus, Ukraine	World market	June 2005	Russia, Belarus and Ukraine reported to UN Register about arms deliveries in 2004		You can find this information at http://disarmament.un.org:8080/un_register.nsf
Russia	China	5 May 2005	Russian shipyard "Admiralteyskie verfi" signed with China a completion form for a second Kilo class submarine (Project 636)	USD 1.6-1.8 bl	The submarine was built within the 2002-year contract for delivery of eight Kilo class submarines to China. "Admiralteyskie verfi" is tasked to build five submarines, "Sevmashpredpriyatie" – two submarines and "Krasnoe Sormovo" – one submarine. Period of delivery is 2004-2005
Russia	Czech Republic	May 2005	Rostov-on-Don helicopter building plant "Rostvertol" transferred to the Czech Army three new Mi-35 attack helicopters	USD 184 ml, a write off of Russian State Debt	Transfer is implemented within the contract for delivery of 16 Mi-171Sh and 10 Mi-35 helicopters. Deliveries are expected in 2005-2006
Russia	Iran	4 Apr 2005	Kazan Helicopter Plant transferred three Mi-17 helicopters to Iranian Red Crescent Organization		Helicopters were delivered within the intergovernmental agreement signed in July 2004
Russia	Latvia	22 Mar 2005	Ulan-Ude Aviation Plant transferred fourth Mi-8MTV-1 helicopter		First three Mi-8 helicopters were transferred in 1999, 2001 and in 2004
Unknown	Georgia	14 Mar 2005	Georgia received one Mi-35 attack helicopter		MoD of Georgia refused to name the exporter

Source: Russian press

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