

# Russia's space defence from its beginning to the present time



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## INTRODUCTION

The centenary series of events commemorating the breakout of the First World War started last year. The proof of the failure of its closing peace treaties is the hardly two decades of time in peace. Fortunately for us, almost seven decades have already passed in peace.

However, the Yugoslav war in 1991 has warned us first of the fragility of the peace.<sup>1</sup>

At that time international cooperation was able to prevent the conflict from spreading. Ukraine has been loud of gunfire for two years now and what is more, Russia annexed the Crimean Peninsula more than a year ago.<sup>2</sup>

Hopefully in the new European conflict a dispute will soon be settled respecting and taking into account the interest of both parties. Otherwise the tense world political situation, which stimulated the arms race and its extension into space, may repeat itself.

In our time the consequences of the changes triggered by new military technology are unpredictable. As more and more countries conquer outer space and as probably it is more and more used for everyday communication, navigation and the gathering of information, wars would probably extend into space as well — even in the form of single pieces of metal which, by falling from the height of hundreds of miles, could simply hit ground targets by their kinetic energy. The extension of wars into space would be such a change as extending it into the air was during the First World War. New organizations, new operational conditions, new initial strike motivators and new ways of warfare will appear overnight.<sup>3</sup>

But what world political situation and space technological development lead to this point? When, with what purpose, how the new cosmic, space defence forces

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1 [Http://konfliktuskutato.hu/index.php?option=com\\_content&view=article&id=12:polgar-haboru-jugoszlaviaban&catid=2:tarsadalmi-konfliktusok](http://konfliktuskutato.hu/index.php?option=com_content&view=article&id=12:polgar-haboru-jugoszlaviaban&catid=2:tarsadalmi-konfliktusok) [28.04.2015].

2 [Http://mno.hu/hirtvkulfold/putyin-elismerte-parancsot-adott-a-krim-annektalasara-1276415](http://mno.hu/hirtvkulfold/putyin-elismerte-parancsot-adott-a-krim-annektalasara-1276415) [20.04.2015].

3 BAYLIS, John — WIRTZ, James — COHEN, Eliot — GRAY, S. Colin, *A stratégia a modern korban: Bevezetés a stratégiai tanulmányokba*, Budapest 2005, p. 316.

were born and developed in the Soviet Union and how was it perfected in its legal successor, the Russian Federation (RF)? How did this part of the armed forces of the Russian Federation become one of the world's most developed military technologies in its category, which soon integrated an entire military service, the Air Forces?

## THE “COSMIC” EFFECTS STARTING WITH THE COLD WAR

Following the Second World War, there were wide activities aiming at the development of various types of ballistic rockets in the industrially developed countries, in the Soviet Union and the United States first of all. The military application of these rockets clearly showed their importance: destroying the enemy in a huge distance from the launch.<sup>4</sup>

So, space warfare started during WWII, when German scientists, led by Werner von Braun, created the V-2 (Vergeltungswaffe-2, revenge weapon-2) ballistic rocket. Altogether 3480 pieces were manufactured and they were deployed against targets in England, the Netherlands, Belgium and France. After the war the Allied Forces seized about 800 of them, which then they divided among themselves and took home. Both the USA and the SU used these rockets for the development of their own ones, with the captured rocket scientists participating.<sup>5</sup>

During the cold war, the unstoppable, increasing impetus of the ideological battle, penetrating into world politics, manifested mostly in the armament, and in it, in the space race.

The United States and the Soviet Union were occupied by the classic armament race during the cold war.<sup>6</sup>

When the Soviet Union launched the first satellite, the Sputnik, during the Eisenhower administration, the Americans started to worry about both the peaceful race and their strategic shortfall. During his second presidency (1953–1961), Eisenhower initially reduced the military and space research expenses. But the pioneering technical success of the Soviets, the launch of the Sputnik caused panic in the USA especially because the satellite passed several times above the country in its orbit. As it became obvious that the Soviet Union was capable of bombing any part of the planet, the USA was forced to take steps and Eisenhower announced the space race, as part of which the NASA was founded in 1958.<sup>7</sup>

The Soviet Union and the USA — according to the cold war doctrines — were preparing for a world war fought with nuclear weapons. They set up military rocket forces and space commands. The importance of competition in this field was beyond the technological, technical and armament struggle of the super powers,

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4 ANUREJEV, I. I., *A rakéta kozmikus védelem eszközei*, Budapest 1975, p. 12.

5 SZABÓ, József (ed.), *Hadtudományi lexikon II. (M–Zs)*, Budapest 1995, p. 1378.

6 HUNTINGTON, Samuel P., *A civilizációk összecsapása és a világrend átalakulása*, Budapest 2005, p. 312.

7 BRZEZINSKI, Zbigniew, *Stratégiai vízió: Amerika és a globális hatalom válsága*, Budapest 2013, pp. 17–18.

because it referred back to the irreconcilable fight of the radically different ideological bases.<sup>8</sup>

By the mid-1960s the Soviet results in the initial period of the space race, not to mention the construction of the nuclear arsenal of the Soviet Union, seemingly predicted an inevitable Soviet victory in the wider ideological, idealist/materialist competition.<sup>9</sup>

Only the 1975 Helsinki conference brought some alleviation in the fierce cold war struggle.

The European Safety Conference was a substitute for Brezhnev for the German peace treaty that he was never able to force to happen with his Berlin ultimatum — and for the general acknowledgement of the status quo after the war.<sup>10</sup>

The alleviation period culminated in 1975 and by the end of the decade the gradual increase of the distance between the powers caused “a new little cold war” (others mention a second cold war).<sup>11</sup> By the end of the 70s, the Western countries were increasingly concerned by the new Soviet wave of war preparation.<sup>12</sup>

The way the West saw it, what happened was that the Soviet leadership actively used the alleviation period to strengthen its armed forces and reach a military balance with the United States and generally all the powers it stood against.<sup>13</sup>

The world had to wait for the real alleviation until Gorbachev came to power. Gorbachev radically changed the foreign politics conception of the Soviet Union, refusing the confrontation with the West, putting an end to the ideologization of the international relations. He practically refused the “red expansion” of the Bolsheviks, which was degenerated to “proletarian internationalism” under Brezhnev as well.<sup>14</sup>

But the communist system was not able to take reforms any more. According to Timothy Garton Ash, a British historian-publicist, its fall “took ten years in Poland, ten months in Hungary, ten weeks in Eastern-Germany and ten days in Czechoslovakia.”<sup>15</sup>

It must be noted here that though the social system and geopolitical situation of Hungary and the entire Middle-European area have been radically transformed with the changes of the political systems but because of our geographical location, the Hungarian-Russian relations are still of determining importance.

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8 DEÁK, József, Az orosz lég- és űrvédelmi csapatok, Felderítő Szemle, Available in: <http://knbsz.gov.hu/hu/letoltes/fsz/2015-1.pdf> [01.06.2015].

9 BRZEZINSKI, Z., op. cit., p. 71.

10 KISSINGER, Henry, *Diplomácia*, Budapest 1996, pp. 757–758.

11 FISCHER, Ferenc, *A kétpólusú világ 1945–1989*, Budapest 2014, p. 299.

12 SZABÓ, M. Miklós, *A Zrínyi Miklós Katonai Akadémia Története 1970–1979*, Budapest 2008, p. 7.

13 KISSINGER, H., op. cit., p. 802.

14 ANISZIMOV, E. V., *Isztorija Rosszii ot Rjurika do Putyina, Ljugyi szobütviya datü*, [Oroszország története Ruriktól Putyinig, Emberek, események, dátumok.] Szentpétervár 2010, p. 519.

15 HORVÁTH, Jenő — PARAGI, Beáta — CSICSMANN, László, *Nemzetközi Kapcsolatok története 1941–1991*, Budapest 2013, p. 281.

In connection with the situation of the Hungarian-Russian relations it must be emphasized that Russia, because of the position it takes in the international politics, the effect it has on the realization of our country's foreign political objectives and its strong strategic importance in the relational system of the area, will stay an important partner for us. Hungary's NATO membership in itself does not endanger the Russian security interests; it appears rather in the loss of their influence in the area.<sup>16</sup>

Parallel to the collapse of the Soviet Union, the disintegration of its economy and society, the military strength of the once super power started to decline quickly. At the beginning of the 90s, together with the leadership of the Russian military forces, the early warning system became weaker as well. The lack of maintenance and the loss of alert points which once belonged to the Soviet Union made great holes in its system. During specific parts of the day some American intercontinental ballistic rocket bases and submarine-base ballistic rockets could not be observed with satellites and radars serving early warning purposes.<sup>17</sup>

When Putin rose to power in May, 2000, centralisation and authoritarianism were strengthened in the domestic politics of Russia as well as the interesting events in their foreign politics, the desire to regain the position of a great power and the application of old, unsuccessful economic and political pressure.<sup>18</sup>

By the mid-2000s the Russian Federation (RF) recovered from the economic, domestic and foreign political crisis following the fall of the Soviet Union. In parallel with this, since the middle of the first decade of the 21<sup>st</sup> century, the Russian leadership has more and more powerfully represented the Russian national interests. The Russian safety political documents define the RF as the main depository of the safety of regional organizations, the Commonwealth of Independent States and the Collective Security Treaty Organization. Russia, becoming stronger in the first decade of the 21<sup>st</sup> century decided-decides it is time to appear as a power factor in the world politics.<sup>19</sup>

Today, according to the point of view well expressing the world political attitude of Russia: "If the globalization of power takes the form of the old hegemonism and the 'unipolar ambitions', then it will inevitably provoke the reaction against a new nationalism and confrontative block-thinking. It must be stated straight that the unipolar world model is incompatible with the existence of great sovereign states — they, based on their definition, do not fit in its structure as they do not wish to be in the role of obedient satellites. So the followers of the unipolar world system have to do everything to 'destroy' or infinitely weaken the great states which mean the actual or potential opponents of the unipolar system."<sup>20</sup>

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16 TÖMÖSVÁRY, Zsigmond, *A hagymakupolák árnyékában (Egy katonadiplomata visszaemlékezései)*, in: Felderítő Szemle, Available in: <http://knbsz.gov.hu/hu/letoltes/fsz/2013-2.pdf>, p. 101.

17 BAYLIS, J. — WIRTZ, J. — COHEN, E. — GRAY, S. C., op. cit., p. 345.

18 ANISZIMOV, E. V., op. cit., pp. 539–543.

19 DEÁK, Anita, Regionális Biztonsági komplexum — a Független Államok Közössége, in: Felderítő Szemle, Available in: <http://www.kfh.hu/hu/letoltes/fsz/2011-3-4-2012-1.pdf>, p. 25.

20 LJUBOV, Siselina — GAZDAG, Ferenc (eds.), *Oroszország és Európa: Orosz geopolitikai szöveggyűjtemény*, Budapest 2004, p. 413.

## DEVELOPMENT IN SPACE TECHNOLOGY WITH COSMIC SPEED

In the second half of the 1950s, because of the unequal industrial development of the Soviet Union, the technical underdevelopment became more and more evident in most of the sectors. In some fields however, like the rocket building and space technology, the Russian constructors were ahead of most of their American and European colleagues. This made possible the launch of the first satellite of the world in 1957 and the first manned spaceship in 1961 as well as the preparation of the landing on the moon.<sup>21</sup>

The USA took a huge step in the field of space technology and military initiatives when, as the highest achievement of the new industrial-scientific-information technological revolution, on 12 April, 1981 — exactly 20 years after the space travel of Gagarin — they launched the first reusable spacecraft, the Columbia. This, unlike space ships and rockets, could return to a ground base and in space it was able to do manoeuvres, approach a satellite to repair or even damage it. This latter was what the Russians were concerned about as the American space crafts could get close to their satellites and could have “blindfolded” the Soviet “sky eyes” watching the United States. The launch of the American space crafts was a sort of a forerunner of the announcement of president Reagan on 23 March, 1983 about the Strategic Defence Initiative (SDI), which attracted international attention and which was commonly referred to as the Star Wars plans.<sup>22</sup>

The program, announced in 1983, aimed at the construction of a defence system against military ballistic rockets. The program was originally planned for 5 years. The new rocket defence system would have consisted of military equipment deployed in space, which the 1972 American-Soviet agreement about the limitation of military defence weapon systems prohibited. The long-term development program counted with reconnaissance satellites, long-range radar systems, controlled laser beam weapons deployed in space and on the ground, space mirrors to direct and concentrate laser beams, satellite destroyer aircraft missiles and various electronic control, telecommunication and other devices. In 1986 a request was made for the development of the European version of the rocket defence system. In 1993 however, the USA entirely reoriented the original plans, excluding its cosmic elements.<sup>23</sup>

So the Star Wars plans were not realized but as we could see, the fight against satellites means a serious challenge for the participants of the space race even today. The satellites, delivered into orbit, were used for more and more purposes — reconnaissance, prediction, communication, meteorological forecast, navigation, oceanographic observations, measurements etc. Thus their importance for ground warfare suddenly increased. The leading powers started the development of anti-satellite systems as a very special field of the armament race between them, because this purpose demanded enormous costs, not to mention the construction of the most modern exploratory experimental technical bases. Both the USA and the SU started the development of their anti-satellite systems at the beginning of the 70s. In the mid-

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21 ANISZIMOV, E. V., op. cit., p. 495.

22 FISCHER, F., op. cit., p. 317.

23 Ibidem, pp. 443–444.

80s the American experiments were aimed at the development of aircraft-launched ASAT (anti-satellite) weapons while the similar Soviet attempts aimed at weapons to be deployed in outer space with the help of carrier rockets. While the 1967 space treaties prohibited the deployment of nuclear weapons into outer space but they did not prohibit the temporary use of space for traditional weapons and they only partly governed the issues raised by the development of anti-satellite systems.<sup>24</sup>

The UN formed a Space Committee with 28 members in 1959 in order to study the technical and legal issues regarding the use of outer space. The most important of the three treaties is “The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies”. It was signed on 27 January, 1967 in Moscow, London and Washington and came into effect on 10 October. In January, 2008 the Treaty had 98 members (including Hungary) and 27 countries signed it.<sup>25</sup>

The Treaty states that outer space is open for the entire humanity and it — together with the planets — cannot be monopolized. Similarly to the open sea, outer space can freely be used by any state. The Treaty prohibits the deployment of nuclear and other weapons of mass destruction into orbit, on planets or their storage in outer space. It also prohibits the construction of military bases, the performance of military exercises and weapon experiments. So, outer space can only be used for peaceful purposes. The Treaty also defines the principles in connection with the assistance of astronauts in trouble, the responsibilities for damages resulting in space activities and other details of activities performed in outer space.<sup>26</sup>

## FROM THE ARCTIC CIRCLE TO THE CRIMEAN AND BEYOND...

The mainly political circumstances, detailed above, led to the fact that today the Russian air and space defence forces guarantee among other things Russia’s world political interests and its safety in the cosmic sphere. Colonel Dmitri Zhenin, representative of the Press and Information Department of the Defence Ministry of the Russian Federation’s Aerospace Defence Forces (VVKO) said the following in connection with the anniversary of the reorganization of the forces of 1 December:

“On 1 December, 2011 the first shift of the Command Centre of the VVKO started its duty and control over the forces of the missile attack early warning, the anti-missile, the air defence, cosmic space monitoring and the cosmic equipment launching and control systems as well as the military control over our centralized forces. The forces of VVKO were set up on the basis of the earlier Cosmic Forces. Higher units of the air-cosmic operational command are also enlisted. Today the VVKO forces cover the entire territory of Russia, from Kaliningrad to Kamchatka, and can be found in many

24 SZABÓ, József (ed.), *Hadtudományi lexikon I*, (A-L), Budapest 1995, p. 939.

25 <http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html> [15.06.2015].

26 BOGNÁR, Károly (ed.), *Világpolitikai kislexikon*, Budapest 1978, p. 461.

of the members of the Commonwealth of Independent States. Every day more than 3000 soldiers and civil professionals take up duty at the VVKO.”<sup>27</sup>

As part of the technical development of the VVKO troops, the construction of new generation radar stations was started, including the territory of the RF beyond the Arctic Circle. On the Crimean Peninsula, in Sevastopol and Yevpatoria, two of the VVKO’s satellite control objects had been installed by 1 December, 2014.<sup>28</sup>

The growing importance of these forces is well illustrated by the fact that the structure of the Russian armed forces is made up of three military services: the land forces, the air force and the navy; and three independent corps: the military-purpose rocket forces, the cosmic (today called air and space defence — the author) forces and the airborne troops and other troops not belonging to a service.<sup>29\*</sup>

The VVKO, from the point of view of guaranteeing the safety of Russia, means an entirely new military service in the application principles of the aerial-cosmic sphere — as it turns out from the website of the Defence Ministry of the Russian Federation.<sup>30</sup>

In the latest military doctrine of the Russian Federation, accepted on 26 December, 2014, Russia considers the strengthening and development of the continuous monitoring possibilities of the objects orbiting the planet Earth as an important task in the prevention and withholding of military conflicts. It regards the due warning of the RF Armed Forces High Command of any air-cosmic attack and the warning of the bodies of the state and military leadership of the detected threat as one of the most important tasks even in times of peace.

Other tasks of the same importance are the air-cosmic protection of the featured objects of the RF, the continuous alert to beat off such attacks and the deployment and operation of space equipment which enable the activities of the Armed Forces.<sup>31</sup>

## FROM THE BIRTH OF THE MILITARY AND SPACE DEFENCE ROCKET FORCES TO OUR DAYS

The immediate legal predecessor of the space defence forces, the Cosmic Troops of the Armed Forces of the Russian Federation, was established by a presidential order on 24 March, 2001 but let us begin at the beginning:

— in 1955 the first military troops with deep space tasks were formed and a decision was

27 [Http://www.vesti.ru/doc.html?id=1161763&cid=7](http://www.vesti.ru/doc.html?id=1161763&cid=7) [04.12.2013].

28 [Http://function.mil.ru/news\\_page/country/more.htm?id=11990511@egNews](http://function.mil.ru/news_page/country/more.htm?id=11990511@egNews) [08.12.2014].

29 DEÁK, János, *Oroszország katonai stratégiája a második világháború befejezésétől napjainkig*, Budapest 2010, p. 169. \* Note: there has been a decision to unite the Air Forces and the Air and Space Defence Forces in 2015 so the name of the new third military service changes to Air and Space Defence Forces. See reference 55. [the author]

30 [Http://www.mil.ru](http://www.mil.ru) [28.04.2015].

31 [Http://www.news.kremlin.ru/media/events/files/41d527556bec8deb3530.pdf](http://www.news.kremlin.ru/media/events/files/41d527556bec8deb3530.pdf) [21.01.2015].

made of the construction of a scientific-experimental shooting range<sup>32</sup> to launch the world's first satellite.<sup>33</sup> The shooting range was built by 2 July. This was the first step towards the launch station of what we know as the Baikonur cosmodrome.

- while preparing for the launch of the world's first satellite, the Command Complex of Cosmic Devices, Launches and Control was established. In the same year, in the town of Mirny, the construction of the shooting range to launch R-7 intercontinental rockets started — today it is known as the Plesetsk launch station.<sup>34</sup>
- according to the TASS communication of 27 August, a successful experiment was carried out by launching an intercontinental ballistic rocket and testing a nuclear weapon.<sup>35</sup>
- on 4 October the world's first artificial satellite, called “PS-1” (“Elementary satellite”) was launched.<sup>36</sup> This cosmic device was a sphere of less than 60 centimetres in diameter, weighing 80 kilograms and it travelled more than 60 million kilometres orbiting the Earth.<sup>37</sup>
- on 15 July the object code-named “Angara” was established (its name today is Governmental experimental space rocket launch station — Plesetsk) and the first higher unit of intercontinental ballistic rockets was set up.

At the end of the 50s and at the beginning of the 60s the following were included in the organizational structure of the cosmic units: experimental control, the independent engineer-researcher units and the measurement complex of the Baikonur shooting range, the Command Complex Centre and 12 independent scientific measurement sites.<sup>38</sup>

- in 1960, to realize the long-term military cosmic program, a directorate was established within the Strategic Rocket Troops and Kerimov Kerim Alievits was appointed its commander, who was member of the Soviet group of specialist formed to study German rocket technology after the Second World War. He had significant role in the organization of the orders of the first series of rockets. Before his appointment he was the chairman of the governmental committee of the space experiments in connection with launching astronauts and manageable cosmic equipment.<sup>39</sup>
- on 4 March, 1961 for the first time in history, the warhead of the V-1000 anti-rocket, developed by the group of P. D. Grushin, succeeded in destroying the warhead of a domestic R-12 ballistic rocket, launched from Kapustin Yar, Kasahstan, in the air.<sup>40</sup>

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32 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

33 [Http://armyus.ru/index.php?option=com\\_content&task=view&id=45&Itemid=1473](http://armyus.ru/index.php?option=com_content&task=view&id=45&Itemid=1473) [15.12.2013].

34 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

35 SZABÓ, M. Miklós, *A Zrínyi Miklós Katonai Akadémia Története 1955–1960*, Budapest 2007, p. 7.

36 [Http://armyus.ru/index.php?option=com\\_content&task=view&id=45&Itemid=1473](http://armyus.ru/index.php?option=com_content&task=view&id=45&Itemid=1473) [15.12.2013].

37 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

38 [Http://armyus.ru/index.php?option=com\\_content&task=view&id=45&Itemid=1473](http://armyus.ru/index.php?option=com_content&task=view&id=45&Itemid=1473) [15.12.2013].

39 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

40 *Ibidem*.

- on 12 April the world's first manned spaceship called "Vostok" was launched, with astronaut Yuri Gagarin on board.<sup>41</sup>
- on 6 August Gherman Titov followed Gagarin in outer space, who spent more than a day there, proving that astronauts can keep their combat readiness even in the state of weightlessness. Astronautics then was motivated by its military application; the astronauts were military officers carrying out combat tasks. Titov's space flight was of extreme military importance because it proved that the nuclear devices, deployed in outer space, can be used from manned space crafts. So for the Soviets it became possible to attack the United States from outer space as well using military nuclear weapons.<sup>42</sup>
- on 1 November 1963 the Mars-1 rocket was launched towards the planet Mars.<sup>43</sup>
- in 1964 the Central Directorate of Cosmic Devices of the Defence Ministry of the Soviet Union was established.<sup>44</sup>
- on 12-13 October three astronauts flew around Earth on board of Voskhod-1: colonel Vladimir Komarov, engineer Konstantin Feoktistov and medical doctor Boris Yegorov.<sup>45</sup>
- 18-19 March: the space flight of colonel Pavel Belyayev colonel Alexey Leonov on board of Voskhod-2, while Leonov carried out the first "space walk" of humanity.<sup>46</sup>
- 18 June: the satellite Sonda-3 was launched to map the invisible side of the Moon.<sup>47</sup>
- on 12 November the Venus-3 was launched, which hit the Venus on 01 March 1966.<sup>48</sup>
- on 17 March 1966 cosmic-purpose rockets — the "Vostok-2" and "Cosmos-112" — were first launched from the Governmental Experimental Spacecraft Launch Station (today called Plesetsk).<sup>49</sup>
- in 1967, according to the 31 January and 30 March directives of the Chief Directorate of the Armed Forces of the Soviet Union, the Directorate of the Rocket Defensive and Cosmic Defensive Command was established.<sup>50</sup>
- in 1968 airplane construction experiments began with a satellite interceptor complex.<sup>51</sup>

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41 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

42 REMES, Péter — GRÓSZ, Andor — SZABÓ, József, *A magyar repülő- és űrrovostan története*, Budapest 2013, p. 146.

43 SZABÓ, M. Miklós, *A Zrínyi Miklós Katonai Akadémia Története 1961-1969*, Budapest 2008, p. 6.

44 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

45 SZABÓ, M. Miklós, *A Zrínyi Miklós Katonai Akadémia Története 1961-1969*, Budapest 2008, p. 6.

46 *Ibidem*.

47 *Ibidem*.

48 *Ibidem*.

49 [Http://armyus.ru/index.php?option=com\\_content&task=view&id=45&Itemid=1473](http://armyus.ru/index.php?option=com_content&task=view&id=45&Itemid=1473) [15.12.2013].

50 *Ibidem*.

51 *Ibidem*.

- on 1 November — for the first time in history — they succeeded in intercepting and destroying the cosmic target object called “I-2M” with the two-turn interception method.<sup>52</sup>
- 14–18 January, 1969: during the space flight of the space crafts Soyuz-4 (manned by Vladimir Alesandrovits Shatalov) and Soyuz-5 (manned by Boris Valentinovits Volonov, C.V. Hrunov and Aleksei Stanislovits Yelisev), the two space crafts were docked and the crew was transferred for the first time.<sup>53</sup>
- 11–17 October: three space crafts performed a group space flight for the first time: the Soyuz-6 (Georgi Shonin, Valeri Kubasov), the Soyuz-7 (Anatoli Filiptsenko, Vladislav Volkov and Viktor Gorbatko) and the Soyuz-8 (V.A. Shatalov and A.S. Yelisev).<sup>54</sup>
- in 1970, in order that all branches of the Soviet Armed Forces be better helped by cosmic devices, the Directorate of Cosmic Devices of the Defence Ministry was established by reorganization under the name of GUKOS.<sup>55</sup>
- 19 June: on board of the Soyuz-9 Adrian Nikolaiev and Vitali Sevastianov performs the longest space flight.<sup>56</sup>
- on 12 September the Luna-16 was launched from which, following a successful landing on the moon, launched space rockets back to the Earth carrying lunar rocks on 28 September.<sup>57</sup>
- in 1982 the GUKOS and its subordinate organizations, because of the suddenly increased number of tasks, was taken out from under the Military Rocket Troops and were placed directly under the Ministry of Defence.<sup>58</sup>
- by 1 October the Directorate of Rocket and Cosmic Defence had been reorganized into the Rocket-Cosmic Defence Troops.<sup>59</sup>

During the cold war, the setting up of a Warsaw Treaty coalition space group consisting of two astronauts per nation was mentioned.<sup>60</sup> “This is what the report of Lajos Czinege, (Hungarian) minister of defence referred to, in which he mentioned astronauts in plural and the exercises to be carried out between fights, which means continuous readiness for battle.”<sup>61</sup>

- in 1992, as a result of a presidential order dated 27 June, the Military-Cosmic Forces (VKS) was established at the Ministry of Defence. Its permanent staff consisted

52 Ibidem.

53 SZABÓ, M. Miklós, *A Zrínyi Miklós Katonai Akadémia Története 1961–1969*, Budapest 2008, p. 7.

54 Ibidem.

55 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

56 SZABÓ, M. Miklós, *A Zrínyi Miklós Katonai Akadémia Története 1970–1979*, Budapest 2010, p. 8.

57 Ibidem.

58 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

59 Ibidem.

60 TARASZENKO, Makszim, *Vojennüje aspektü szovjetszkoj koszmonavtyiki, Agensztvo Rosszijoszkoj Pecsatyi*, Moszkva 1992, pp. 5–7.

61 REMES, P. — GRÓSZ, A. — SZABÓ, J., op. cit., p. 175.

of among others the units of the Baikonur and the Plesetsk launch station. Field marshal Vladimir Ivanov was appointed its first commander and its command was dislocated to Moscow.<sup>62</sup>

- with 1 March 1996 the Governmental Experimental Spacecraft Launch station called “Svobodni” was established within the VKS.<sup>63</sup>
- 4 March 1997: the first rocket carrying a cosmic device was launched from the “Svobodni” launch station.<sup>64</sup>
- according to the presidential order of 16 July, “in accordance with the defence and safety needs and the economical possibilities of the county” the Military-Cosmic Forces were merged into the staff Military Rocket Troops and the Air Defence Cosmic Rocket Defence units.<sup>65</sup>

But the integration aimed at the increase of efficiency did not work as expected. Besides, trying to mechanically integrate the land military nuclear impact troops and the corps which had to provide the country and the highest command of the military forces of cosmic-military information, caused several serious problems.<sup>66</sup>

- on 24 March 2001 following a presidential order, the Space Defence Troops of the Armed Forces of the RF was established, which was turned into Air and Space Defence Corps from 1 December 2011.

## SPACE PLANS OF CAMPAIGN

According to the lexicon of military science, space warfare is an activity carried out with weapons deployed in outer space and orbiting devices, controlled by a staff or working automatically, which activity is able to influence military operations performed in space or on earth. By space weapons it means intercontinental ballistic rockets, anti-ballistic rocket weapons, carrier rockets that can put space weapons in orbit, military satellites, weapons to destroy or blocking weapons, manned space crafts or space stations, ground-deployed high capacity radars and other devices enabling space reconnaissance, their control and communication network as well as the launching equipment constructed in cosmodromes.<sup>67</sup>

Another global form of application of the armed forces — both in a nuclear or traditional war — was understood as the execution of military operations to beat off the air-cosmic attack of the enemy. The principles of these operations were started

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62 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

63 Ibidem.

64 [Http://armyrus.ru/index.php?option=com\\_content&task=view&id=45&Itemid=1473](http://armyrus.ru/index.php?option=com_content&task=view&id=45&Itemid=1473) [15.12.2013].

65 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

66 [Http://armyrus.ru/index.php?option=com\\_content&task=view&id=45&Itemid=1473](http://armyrus.ru/index.php?option=com_content&task=view&id=45&Itemid=1473) [15.12.2013].

67 SZABÓ, J., op. cit., p. 1378.

to be elaborated on in the 60s based on the theory of the air defence of the air forces. In those days however, this could be interpreted mainly as operations against flying forces. In the 70s and even the 80s the armed forces faced a theoretically new task. The possibility of the application of nuclear weapons and various cosmic (satellite-based) systems required a much higher level of safety not only from the aerodynamic but also the ballistic assault devices as well.

The task was to create a uniform air-cosmic defence system which includes defence against air forces, rockets and cosmic (satellite based) devices as well as missile attack early warning alert and cosmic monitoring systems.

In the second half of the 90s the transformation process, which affected mostly the missile attack early alert system, started in Russia as well.

They started to build new stations to fill the holes and strengthened the cosmic (satellite based) grouping of the military early warning system.<sup>68</sup>

In the period between 2000 and 2010 the development of the cosmic forces, the reconnaissance systems and the communication and information technological equipment was considered one of the most important tasks.<sup>69</sup>

The Russian air and cosmic troops launched more than 230 carrier rockets between 2001 and 2011 which put about 300 space objects of various purposes in orbit. These were telecommunication, cartographical, scientific satellites, remote controlled space probes and other space objects. Thanks to the monitoring of the cosmic area, they issued more than 900 warnings of space objects getting dangerously close to the international space station.<sup>70</sup>

In 2014 the VVKO corps put 27 satellites in orbit and controlled the launch of about 230 domestic and foreign space objects. They put more than 150 space objects under continuous monitoring and predicted and kept track of the ballistic destruction of more than 70 objects. During the monitoring of the Russian orbital inventory, 26 warnings were issued of them being dangerously approached by various space objects; on 6 occasions the International Space Station was endangered.<sup>71</sup>

In 2013 three intercontinental ballistic rockets and 32 space objects were launched. The VVKO forces on duty contacted and issued remote commands to various space objects about 375 thousand times. The missile attack early warning system detected about 40 launches of domestic and foreign ballistic and carrier rockets. At the VVKO, every day more than 3.000 military and civil professionals are on duty in a continuous work order.<sup>72</sup>

These are the latest pieces of news from January, 2015, of the status of the space defence troops and their application in a simulated environment.

During the military exercise of defending Moscow and the central industrial area from an aerial or cosmic attack to check the combat readiness of the VVKO, the

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68 DEÁK, János, op. cit., p. 147.

69 Ibidem, p. 149.

70 [Http://www.ria.ru/spravka/20141004/1026751341.html](http://www.ria.ru/spravka/20141004/1026751341.html) [08.12.2014].

71 [Http://www.structure.mil.ru/structure/forces/cosmic/news/more.htm?id=12005344@egNews](http://www.structure.mil.ru/structure/forces/cosmic/news/more.htm?id=12005344@egNews) [08.12.2014].

72 [Http://www.ria.ru/spravka/20141004/1026751341.html#ixzz3LCJMMIMc](http://www.ria.ru/spravka/20141004/1026751341.html#ixzz3LCJMMIMc) [08.12.2014].

units on duty identified in time more than ten, low level targets, imitating a mass air strike.<sup>73</sup>

In 2014 the VVKO carried out more than 800 exercises of discovering assumed ballistic rocket targets to test the “Don-2N” radio locator station. Among the more than 20 detected space rocket launch localities there were domestic ones and Russian submarines cruising on the Barents sea, the White sea and the Okhotsk sea.<sup>74</sup>

## THE AIR AND SPACE DEFENCE CORPS TODAY

Today, according to the website of the Defence Ministry of the RF, the air and space defence corps carries out a wide range of activities.

The most important of them are the following:

- providing authentic information of the launch of ballistic rockets for the high command as well as warning it in case of a rocket attack;
- destroying the warheads of the ballistic rockets launched against important governmental objects by the presumed enemy;
- within its scope protecting the highest level governmental and military Command Points, the military forces, the most important industrial and economic centres and other objects from the attacks of the air-cosmic devices of the enemy;
- monitoring the objects of outer space, identifying and beating off the threats against Russia;
- putting cosmic devices in orbit, flight control of military and dual-purpose (military and civil) satellite systems and using some of them to provide the armed forces of the Russian Federation with the necessary information for their operation;
- assuring the preparedness of the specified staff of the military and dual-purpose satellite systems, their launch and control.<sup>75</sup>

The air and space defence troops consists of two commands and a launch site for military and dual-purpose satellites (the experimental governmental site of Plesetsk), including the Independent Experimental Station with the “KURA” shooting range. Plus the Space Command, including the Experimental Centre of Cosmic Device Control named after G. S. Titov, the Missile Attack Early Warning Centre and the Space Reconnaissance Centre.<sup>76</sup>

Also, part of the air and space defence troops are the governmental experimental cosmodromes (Baikonur, Plesetsk and Svobodni), the directorate controlling the

<sup>73</sup> [Http://structure.mil.ru/structure/forces/cosmic/news/more.htm?id=12006457@egNews](http://structure.mil.ru/structure/forces/cosmic/news/more.htm?id=12006457@egNews) [28.01.2015].

<sup>74</sup> [Http://www.structure.mil.ru/structure/forces/cosmic/news/more.htm?id=12006065@egNews](http://www.structure.mil.ru/structure/forces/cosmic/news/more.htm?id=12006065@egNews) [22.01.2015].

<sup>75</sup> [Http://www.structure.mil.ru/structure/forces/cosmic.htm](http://www.structure.mil.ru/structure/forces/cosmic.htm) [29.04.2015].

<sup>76</sup> Ibidem.

application of the devices of the rocket and space defence, the military training institutions and the covering units.<sup>77</sup>

The organization of rocket and space defence include the elements of missile attack early warning, rocket destroying and space monitoring. Its tools are: centrally controlled radio located, radio technical, electro-optical and optical devices that operate in real time, based on a unified informational field. The orbiting, domestically manufactured cosmic group of devices is controlled by the Experimental (ground control — the author) Centre, named after Titov. The objects belonging to the air and space defence troops can be found in the entire territory of Russia, from Kaliningrad to Kamchatka, and also abroad in Belarus, Azerbaijan, Kazakhstan and Tajikistan.<sup>78</sup>

As Vladimir Putin stressed in connection with the development of VVKO up to 2020: "... the most up-to-date 'Voronezh-M' and 'Voronezh-DM' class radio locator stations are already continuously arriving to the units. We have brought the 'Pantsir-S1' air defence system in operation, we have begun to fill up the units with the 'S-400' complex, there are on-going experiments with the 'Vitez' (medium range — the author) type air defence system and the 'Contener' and 'Nebo-M' radio locator stations. There are also experiments with the 'S-500' air defence rocket system which is able to operate even in close cosmos".<sup>79</sup>

## SUMMARY

In Russia too, the military application of outer space provides unique opportunities to observe the enemy and it may significantly increase the effectiveness of the armed forces in peace time and in war alike. It can be seen from the — far from being complete — presentation of the history of the space defence troops what importance it carries for the political leadership and the security of the country.

While, like this study shows, the world political effects of the cosmic programs, to which there are also examples.

These developments that demonstrate the scientific-technical or military superiority, sometimes become so important for the state leaders that their effects largely define the directions of their development.<sup>80</sup>

In our time the effect of the extremely fast development of science and technology on humanity is twofold. It helps humanity to tame nuclear power to create the information technology equipment that make their mental physical work less difficult, to create new branches of industry and to proceed in the research of outer space. At the same time however, it gives modern weapons and technology of horrible power into their hands.<sup>81</sup>

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<sup>77</sup> [Http://www.ria.ru/spravka/20081004/151863301.html#ixzz2ndbJCuRI](http://www.ria.ru/spravka/20081004/151863301.html#ixzz2ndbJCuRI) [05.12.2013].

<sup>78</sup> Ibidem.

<sup>79</sup> [Http://www.rus.ru/2013\\_06\\_19\\_/Putin-Rossija-namerena-narashhivat-operativno-takticheskie-vozmozhnosti-vozdushno-kosmicheskoy-oboroni-8484/](http://www.rus.ru/2013_06_19_/Putin-Rossija-namerena-narashhivat-operativno-takticheskie-vozmozhnosti-vozdushno-kosmicheskoy-oboroni-8484/) [03.02.2014].

<sup>80</sup> TARASZENKO, M., op. cit., p. 9.

<sup>81</sup> ANUREJEV, I. I., op. cit., p. 5.

Meanwhile, if we take another look at the examples of WW1, WW2 and the following wars, including the latest challenge imposed on our modern world by terrorism<sup>82</sup> and the struggle against it: did, beside the technology of killing, the man that created it change in his character or morality? If only we could talk about the same speed of development in connection with the peaceful coexistence and the “technology” of human sympathy! It seems that the wise, far-seeing political consideration and methods of the leaders of superpowers and smaller states are so narrow minded that they were a hundred years ago...

#### ABSTRACT

Moscow commemorated the Victory Day with the greatest parade<sup>83</sup> since the disintegration of the Soviet Union. Russia, a nuclear power, still counts as a military superpower. The military forces, which were founded to carry out space tasks — but their very first task was to construct a scientific-experimental shooting range — has become the guarantee of this retarding force during the six years of their existence.<sup>84</sup> Their name today is Aerospace Defence Forces (*Voyska Vozdushno-Kosmicheskoy Oborony*, VVKO) and their effectiveness according to president Putin is “fundamentally the guarantee of the firmness of our retarding force and at the same time the defence of the territory of our country from aerial and cosmic attacks”.<sup>85</sup>

#### KEYWORDS

Russia, cosmic devices, satellites, Military-Cosmic Forces, Aerospace Defence Forces

#### ABSTRAKT

Moskva si pripomněla Den vítězství největší vojenskou přehlídkou<sup>86</sup> od rozpadu Sovětského svazu. S Ruskem, jadernou mocností, se musí stále počítat jako s vojenskou supervelmocí. Vojenské jednotky, jež vznikly za účely spojenými s vesmírem — ale jejich prvním úkolem bylo zkonstruovat vědecko-experimentální střelnici —, se během své šestileté existence staly zárukou vzdušné brzdící síly.<sup>87</sup> Jejich dnešní název je Vzdušné obranné síly (*Voyska Vozdushno-Kosmicheskoy Oborony*, VVKO) a podle prezidenta Putina je jejich účinnost „základní garancí pevnosti naší vzdušné brzdící síly a ve stejnou dobu obrany území naší země ze vzduchu a vesmíru“.

#### KLÍČOVÁ SLOVA

Rusko, vesmírné přístroje, satelity, vojenské vesmírné síly, vzdušné obranné jednotky

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82 [Http://2010-2014.kormany.hu/download/f/49/70000/1035\\_2012\\_korm\\_hatarozat.pdf](http://2010-2014.kormany.hu/download/f/49/70000/1035_2012_korm_hatarozat.pdf) [20.06.2015].

83 [Http://hvg.hu/vilag/20150509\\_A\\_legnagyobb\\_diszszemle](http://hvg.hu/vilag/20150509_A_legnagyobb_diszszemle) [05.10.2015].

84 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].

85 [Http://www.politikus.ru/army/4929-putin-rossiya-namerena-naraschivat-operativno-takticheskie-vozmozhnosti-vozdushno-kosmicheskoy-oborony.html](http://www.politikus.ru/army/4929-putin-rossiya-namerena-naraschivat-operativno-takticheskie-vozmozhnosti-vozdushno-kosmicheskoy-oborony.html) [28.04.2015].

86 [Http://hvg.hu/vilag/20150509\\_A\\_legnagyobb\\_diszszemle](http://hvg.hu/vilag/20150509_A_legnagyobb_diszszemle) [05.10.2015].

87 [Http://ria.ru/spravka/20101004/280859730.html](http://ria.ru/spravka/20101004/280859730.html) [05.12.2013].