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MILITARIZATION OF OUTER SPACE AS A GLOBAL POLITICAL PROBLEM

Abstract:	*The problem of the militarization of outer space is older than* astronautics *itself. Near-Earth space began to be considered as a potential battlefield about 10 years before the first satellites entered orbit.* *From the very beginning of the space race, the USSR and the United States began to develop weapons for launching into outer space. Subsequently, with varying success, countries concluded treaties that restricted the deployment of various types of weapons in outer space.* *However, the withdrawal of only nuclear and other weapons of mass destruction is still prohibited, which allows the use of any other types of weapons. In connection with recent events, namely: the break of the INF Treaty, the creation of the US space force, the creation of a Space Command in the French Air Force, the declaration of space as the fourth sphere of NATO operations, the active space policy of India and China and the growth of tension around the world.* *It can be noted that there are clear prerequisites for the beginning of a military-space arms race.*
Keywords:	**Militarization; space; UN; NATO; space forces; military space policy; satellites**
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Maintenance of outer space use for peaceful purposes and the search for ways and means to ensure its sustainable and safe development is one of the most

pressing issues of international cooperation today. New challenges in ensuring the safety of activities in outer space arise because of the constant growth in the number of participants in space activity, the development of new technologies and the appearance of promising areas for their use.

The analysis of the existing outer space legal regulations[1] allows us to identify a number of activities in outer space that are not regulated by law, which include: the creation, testing and deployment of anti-satellite weapons; the development, testing and deployment of space-based anti-missile defense systems; conducting military experiments; the creation and deployment of optical and electronic suppression systems; creation and deployment of new physical principles weapons[2].

These data show us the presence of lacunas in international space law. What is more, there are no unanimous definitions for such terms as "space weapons" and "outer space", which allows countries to interpret them differently taking into account their national interests. Committee on Peaceful Uses of Outer Space is the main intergovernmental body that ensures the peaceful exploration of outer space. The Committee analyses the existing international cooperation in the peaceful use of outer space, develops programs on the further expansion of international space cooperation and manages UN technical cooperation in this area[3]. However, the Committee does not dispose of any compulsory force to influence the policies of countries.

Given the fact that there are lacunas in the international space law concerning the regulation of military space activities, we assume that outer space is the most promising area for the restart of an arms race. Termination of international treaties (Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles signed by Russia and the USA; Antiballistic missile treaty; Treaty on Conventional Forces in Europe) the growth of the number of conflict zones and the aggravation of relations between different countries act as prerequisites for a new arms race.

The article studies the latest tendencies in the field of military space policy of the leading space powers (Russia, China, India, Japan) and NATO (assuming the major role of the USA) to better understand the degree of tension that exists between the countries in the field of space exploration. As a result, a number of alarming events and trends have been pinpointed.

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[1] UN, *Home page,* https://www.un.org/ru/, (10.12.2019)

[2] Anatoly Antonov, *Mezhdunarodno-pravovoye regulirovaniye voyenno-kosmicheskoy deyatel'nosti*, "Vestnik MGIMO-Universiteta", Moskva, 2015, p. 192

[3] Vyacheslav Safronov, *Pravovoye regulirovaniye ispol'zovaniya kosmicheskogo prostranstva v mirnykh tselyakh*, "Aktual'nyye problemy aviatsii i kosmonavtiki", Krasnoyarsk, 2012, p. 333

NATO

On December 4, 2019, NATO Secretary General Jens Stoltenberg said at a press conference that NATO declared space a fifth operational domain of the alliance[1]. On December 20, 2019, Donald Trump officially announced the creation of the United States Space Force as independent military service. The House of Representatives of the US Congress approved the bill "Fiscal Year 2019 Budget request", which provides funding for space-based intercepting ballistic missiles. According to the document, the weapons will have been launched into space by the year 2030[2].

Following Donald Trump, French President Emanuel Macron announced the creation of a new military command in the French Air Force in order to protect the country's interests in space and "expand its space capabilities"[3]. In his address to the army on the eve of July 14, the President of the Republic declared: "the new doctrine should ensure our defense from space and by means of space. We will better and more actively protect our satellites"[4]. The goals of the military space program include the launch of reconnaissance satellites CSO (Composante Spatiale Optique) and communications satellites Syracuse, the launch of electromagnetic reconnaissance satellites CERES (CapacitÉ de Renseignement Électromagnétique Spatiale), and the modernization of the GRAVES (Grand Réseau Adapté à la Veille Spatiale) space surveillance radar. A total of at least nine military satellites will have been launched by 2030[5].

On March 9, the French newspaper Les Echos reported on a military training exercise in space, called AsterX. The military exercise is supposed to test the ability of the units to respond to potential dangers, the detection of threatening objects or reconnaissance satellites in outer space. The US Space Force and the German Space Agency are also taking part in AsterX[6].

The United Kingdom also announced the creation of the space command. The British military explained its action by the need for unified management of the country's space programs and resources[7].

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[1] NATO, *Homepage*, https://www.nato.int/, (13.12.2019)

[2] BBC News, *Space Force: Trump officially launches new US military service*, September 21, 2019, https://www.bbc.com/news/world-us-canada-50876429, (22.12.2019)

[3] BBC News, *France to create new space defence command in September*, July 13, 2019, https://www.bbc.com/news/world-europe-48976271, (24.12.2019)

[4]L'usine Nouvelle, *Face aux nouvelles menaces spatiales, la France passe à l'offensive,* October 24, 2019, https://www.usinenouvelle.com/article/face-aux-nouvelles-menaces-spatiales-la-france-passe-a-l-offensive.N896294, (24.12.2020)

[5] *Ibidem*

[6] Les Echos, *La France lance AsterX, son premier exercice militaire spatial,* March 9, 2021, https://www.lesechos.fr/industrie-services/air-defense/paris-annonce-un-premier-exercice-militaire-spatial-1296757, (17.03.2021)

[7] N+1, *Britantsy zanyalis' sozdaniyem Kosmicheskogo komandovaniya*, January 16, 2020, https://yandex.ru/turbo?text=https%3A%2F%2Fnplus1.ru%2Fnews%2F2020%2F01%2F16%2FspaceCommand, (17.01.2019)

From the above information, we can conclude that the United States and other NATO countries are activating there, as they argue, defensive policy in outer space (conducting military exercises in space is the most vivid example). It is likely that it can provoke some retaliatory measures from other countries and unleash an arms race of defensive and, later, offensive weapons.

Russia

Russia, unlike many other countries, has had Aerospace Defence Forces since 2011 (Aerospace Forces of the Russian Federation since 2015). Their mission involves repulsion of the acts of aggression in space and protection against enemy space attacks, the defeat of the enemy using both conventional and nuclear weapons; neutralization of the ballistic missiles' warheads; monitoring space objects and identifying threats to Russia; orbital spacecraft launches, the use of some space vehicles to provide the Forces with the necessary information[1].

In 2018, experts from the J-2 intelligence agency presented a report to the Pentagon on Russia's anti-satellite weapons. As Director of National Intelligence Dan Coats noted in the report, Russia's space weapons include "a diverse set of capabilities to target satellites in all orbital modes"[2], including an onboard laser for use against American satellites. According to these data, Russia has recently invested about five billion dollars annually in the creation and development of anti-satellite weapons. The project includes developing A-235 missile defence system (the Nudol missile defence system), lasers and electronic warfare systems capable of disrupting satellite electronics, as well as cyber weapons. J-2 specialists claim that the S-300, the S-400 and the S-500 anti-missile systems are capable of destroying targets in near-Earth orbit[3].

The Russian Federation consistently promotes the idea of the necessity to develop a comprehensive UN convention on International Space Law. As Russia believes[4], this would eliminate the existing contradictions and fill in the gaps in the the current International legal regulation of space activities. It would also allow the International community to consider all aspects of outer space exploration and the use of space technologies, taking into account the interests of all space actors[5].

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[1] *Ukaz Prezidenta RF ot 7 dekabrya 2015 g. № 597 "O vnesenii izmeneniy v Ukaz Prezidenta Rossiyskoy Federatsii ot 4 fevralya 2002 g. № 141 "O znamenakh vidov Vooruzhennykh Sil Rossiyskoy Federatsii"*, December 7, 2015, http://www.kremlin.ru/acts/bank/40270, (26.01.2020)

[2] The Sun, *A TOP-SECRET spy satellite operated by Russia is feared to have "disintegrated" in space*, January 14, 2020, https://www.thesun.co.uk/tech/10735117/secret-russian-spy-satellite-explode-space/, (29.01.2020)

[3] The Sun, *A TOP-SECRET spy satellite operated by Russia is feared to have "disintegrated" in space*, January 14, 2020, https://www.thesun.co.uk /tech/10735117/secret-russian-spy-satellite-explode-space/, (29.01.2020)

[4] Roscosmos, *Home page*, http://www.roscosmos.ru/, (11.02.2020)

[5] *Ibidem*

Back in October 2004 Russia unilaterally made a political commitment not to deploy weapons in outer space. Since 2008 China and Russia have been working together on a Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects (PPWT)[1].

In December 2019, the President of the Russian Federation made a statement that Russia is against the militarization of outer space. He equally noted that the current situation requires retaliatory measures from Russia[2].

On February 24, 2021, Russian Foreign Minister Sergey Lavrov made a speech at the Conference on Disarmament's High-Level Segment in which he expressed concern about the intensification of the arms race in outer space. He also noted: "There is still a chance to develop generally acceptable legally binding measures that can prevent a military confrontation in outer space. The Russian-Chinese draft Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects, presented here at the Conference on Disarmament, is a good basis for this"[3].

From the above information, we can conclude that Russia adheres to a peaceful position aimed at curbing the arms race in outer space.

This is confirmed by the active position of the Russian Federation in the UN. The Russian delegation constantly makes proposals and resolutions on the creation of a clear regulatory framework for outer space. With the same consistency, the United States, Israel and Ukraine make actions to prevent this from happening. Thus, the policies of other space powers force Russia to develop space technologies, including those with military purposes. On the other hand, the Russian Federation formed its Aerospace Defence Forces as early as 2011[4]. To some extent, this policy can be accused of double standards. However, this is due to the need to respond to the actions of other countries and could be changed in other conditions.

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[1] Ministerstvo Innostranykh del Rossiiskoy Federatsiy, *Home page*, https://www.mid.ru/, (02.03.2021)

[2] *Soveshchaniye s rukovodstvom Minoborony i predpriyatiy OPK*, Sochi, December 4, 2019, http://www.kremlin.ru/events/president/news/62228, (28.01.2020)

[3] *Vystupleniye Ministra inostrannykh del Rossiyskoy Federatsii S.V.Lavrova v ramkakh segmenta vysokogo urovnya Konferentsii po razoruzheniyu*, Moskva, February 24, 2021, https://www.mid.ru/vistupleniya_ministra/-/asset_publisher/MCZ7HQuMdqBY /content/id/4594359, (24.03.2021)

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China

In 2007, China became the third country to demonstrate the ability to destroy objects in near-Earth orbit[1]. It is believed that a medium-range land-based ballistic missile was involved in the tests. The weather reconnaissance satellite, which had been launched in 1999, was then successfully destroyed. The tests were condemned by the international community, and China responded by claiming that it opposes the militarization of outer space and any form of the arms race[2].

In 2016, China launched a spacecraft designed to move space debris such as old satellites. According to NASA, there are more than 20 thousand pieces of debris the size of a grapefruit and larger in Earth's orbit. The number of smaller fragments is counted in the millions. There are concerns that they can be used to disable enemy satellites in case of war[3]. According to a number of Russian and Western analysts[4], in addition to testing anti-satellite offensive weapons, China is conducting promising research in the field of laser technologies for disabling optical sensors of spacecraft, as well as research in reconnaissance laser technologies, the aim of which, for example, is to determine the orbits of satellites of other states[5].

China's strategy for space dominance was presented in the annual report of the US Congress and China's Economic and Security Review[6]. The commission's report warns that China wants to dominate the zone between the Earth and the Moon. China plans to establish a permanent base on the moon as part of a dual military and commercial program.

"Beijing clearly believes that a country leading in space can also dominate economically and militarily on Earth"[7], the report says.

Similarly, in 2018 the Joint Staff of the Chinese military stated that the goal is to achieve "space superiority" - control of space without ground-based or

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[1] VZGLYAD, *Kitay sbil sputnik*, January 19, 2007, https://vz.ru/politics/2007/1/19/65008.html, (20.01.2020)

[2] *Ibidem*

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[6] The Washington Times, *Pentagon races to end China's 'dream' of military domination in space*, November 24, 2019, https://www.washingtontimes.com/news/2019/nov/24/china-raises-space-military-challenge-us/, (18.01.2020)

[7] Press From, *Vulnerable satellites: the emerging arms race in space*, November 13, 2019, https://pressfrom.info/uk/news/tech-science/-370194-vulnerable-satellites-the-emerging-arms-race-in-space.html, (21.12.2019)

space-based threats interference[1]. The Chinese leaders have set ambitious goals, aiming to become a "universal space power" by 2030[2].

At the same time, China is pursuing a peaceful diplomatic policy, co-sponsoring and supporting Russian resolutions such as "Prevention of an arms race in outer space", and many others[3].

Although historically the PRC was only the fifth space power, by the XXIst century China had caught up, and in some moments overtaken, the leading space powers. This shows the great potential of the Chinese space program. This is largely due to the country's political system, which makes the funding and planning less vulnerable to political swings in comparison with, for example, the United States. In addition, China's space program gains advantages over the United States — in particular, by focusing on the Moon as a base for future space research[4].

Based on the success and ambitious plans of China, we can conclude that China has huge prospects for space exploration, which is very worrying for the United States, which wants to dominate in this area. Nevertheless, as China's actions at the UN to counter the militarization of outer space show, it can be concluded that China has no intention of aggravating the situation. At the same time, China does not want to be vulnerable to other countries, which explains the active development of its national space program.

India

While the entire world is witnessing China's impressive space successes, such as the landing of Chang'e-4 on the far side of the moon and the creation of the United Nations Space Forces, India is successfully developing its own space program.

In 2017 India broke the world record previously held by Russia for the number of satellites launched by a single rocket. India sent 104 satellites into space at once compared to Russia's 37 in 2014[5]. According to experts, this launch can be be called historic not so much because of the number of satellites, but because India has outlined its plans to become a key player in space research.

Vinita Hare, an employee of the BBC's Indian Service in Delhi, in their interview with the BBC, spoke about India's plans in space: "It has several goals.

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[1] The Washington Times, *Pentagon races to end China's 'dream' of military domination in space*, November 24, 2019, https://www.washingtontimes.com/news/2019/nov/24/china-raises-space-military-challenge-us/, (18.01.2020)

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[5] *Ibidem*

First of all, India wants to rely only on itself and be completely independent of other countries. Secondly, India wants to show the world that its space program is much cheaper than similar programs in other countries such as in the United States, in Russia, in Europe. The space program and its great achievements are also a matter of national pride. Moreover, the space program also has a defence aspect, which, however, is not often mentioned. Thanks to it, India keeps in view not only what is happening in space, but also what is happening in the sky of its "restless" neighbours, both from the west and from the east"[1].

On March 27, 2019, India conducted its first anti-satellite test (ASAT). Codenamed "Shakti Mission," the anti-missile ballistic missile interceptor travelled 300 kilometres and within three minutes hit and destroyed an active satellite of India in near-Earth orbit. The interceptor missile was developed by the Indian Defense Research and Development Organization (DRDO)[2].

The ASAT test demonstrated India's ability to hit enemy targets in space, which DRDO is believed to have had since 2012 but demonstrated only in 2019. Fears that China could endanger India's critical infrastructure have prompted it to demonstrate its own offensive capabilities as a deterrent to any Chinese coercion. This was the first time we saw DRDO involved in a space mission, and the first time the Indian Space Research Organization (ISRO) participated in a weapons test. In addition, following the results of the tests, Prime Minister Narendra Modi instructed National Security Adviser Ajit Doval to develop a draft space doctrine[3].

All this, along with recent actions taken by China, Russia and the United States to create specialized space forces, may give an impetus to the Indian political elite to create India's own specialized military space organization and intensively develop military-technical developments in outer space.

Japan

Considering the policy of the leading space powers, it is impossible not to mention Japan. Japan's space program, launched with the assistance of the United States in the 1950s, was non-military in nature and was aimed at strengthening the country's scientific, technical and economic potential. For a long time, Japan has pursued a peaceful policy in space. The state's space policy with its exclusively peaceful means was regulated by the Japanese Parliament Act of May 9, 1969[4].

The situation started to change significantly only when a North Korean missile flew over Japan on August 31, 1998[5]. Tokyo announced its intention to

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[1] BBC Russkaya sluzhba, *Indiya zapustila v kosmos srazu 104 sputnika*, February 15, 2017, https://www.bbc.com/russian/news-38977943, (18.01.2020)

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[5] *Ibidem*

develop a network of domestically produced satellites that will be used by the Defense Directorate and the Self-Defense Forces to protect Japan from new threats. The implementation of these plans necessitated some important changes in the legislative framework. As a result, on May 28, 2008, the Parliament approved the draft law, and on August 27, the "Basic Law on Space" entered into force[1]. This is the first official document that mentions the term "security" in relation to space exploration. Accordingly, the defence agency was granted the right to participate in the development, procurement and management of space systems. Its functions were supposed to expand, including the ones that imply the military sphere.

On January 25, 2013, the "Basic Space Policy Plan" was updated, justifying the priority of ensuring national security[2]. Space technology has become one of the most important means of monitoring the sea and the air of Japan and its surrounding territories. The Ministry of Defence was instructed to improve the means of satellite surveillance and intelligence, in particular.

Thus, Japan is gradually removing restrictions from it and justifies it as a matter of national security issues. May 18, 2020, Defense Minister Taro Kono announced the creation of the Space Task Force within the Japanese Armed Forces[3]. The main duties of the space operations squadron will be to track satellites of other countries, primarily Russia and China, and to monitor Japanese space military developments, which will be coordinated with the United States. Other duties include tracking space debris and preventing it from colliding with Japanese spacecraft, establishing communications with satellites, and eliminating radio interference[4].

Shinzo Abe also sought to officially legalise the existence of the armed forces. This policy is likely to be continued by incumbent Japanese Prime Minister Yoshihide Sugu, an adherent of Abe's policy.

Analyzing the above, we tend to think that considering the current situation in outer space, Japan will strive to remove the restrictions imposed on it after the Second World War. This year Japan plans to create a space operations squadron, as well as officially legalize the existence of the armed forces on its territory. This indicates Japan's concern about other countries' space policies and its willingness to take appropriate measures.

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Conclusions

The analysis of the recent world events in the domain of space demonstrates to us that the leading space powers are actively developing their technologies, including the military ones.

Speaking about the current state of affairs, it should be noted that the situation has changed significantly with the emergence of new space powers. Today, China, India and Japan are successfully developing their space programs both peace and military.

The recent events demonstrate that the situation in outer space has become rather tense. NATO has officially announced space as a domain of the alliance's operations. France, the United States, and the United Kingdom have announced the creation of military space forces and separate units. India and China have successfully tested anti-satellite weapons. Japan is seeking to move away from the peaceful policy enshrined in the country's constitution partly in order to have freedom of action in outer space. The initiatives of Russia and China aimed at space demilitarization were accepted but encountered resistance mainly from the United States. The unwillingness of a key player to assume legal obligations that restrict its military activities in space makes it impossible to seal legally binding agreements. The initiatives of the European Union to create a "Space Code" are not aimed at solving existing problems and are of a recommendatory nature, which makes them useless. Thus, we can conclude that there are clear prerequisites for the beginning of an open arms race in outer space.

The means to resolve this issue should be based on the principle of the non-use of force in outer space.

Firstly, it is necessary to develop and approve a universally recognized code of conduct in outer space and procedures for resolving conflict situations. The adoption of a code of conduct in outer space by the leading States can help to induce a more responsible behavior of the space powers and create a favorable atmosphere for the subsequent preparation of more binding and formalized agreements. The idea of a Code of Conduct in Outer Space in its various versions is now quite widely supported throughout the world.

Secondly, it is of paramount importance to create an authorized international organization to monitor the actions of countries in outer space and resolve conflict situations, so that unforeseen situations in outer space do not get out of control and remain subject to resolution. This organization should also monitor the objects launched into space to make sure that there are no weapons on board, as well as that these objects themselves are not weapons. Similar ideas have already existed, but have not been properly developed. Thus, the USSR proposed the creation of an International Inspector Corps (ISI), France once proposed to establish the International Agency for Monitoring Artificial Earth Satellites (ISMA), and Canada was the author of the initiative "Peaceful Satellite" (PAXSAT).

Thirdly, it is necessary to increase the level of mutual trust between Space powers and ensure the openness of space activities. By disclosing information

about space activities, countries could avoid being accused and suspected of wanting to use space for military purposes. The active involvement of other countries in cooperation will not only contribute to the development of trusting relations but also give impetus to the process of space exploration, since, given the large financial costs and the need for serious scientific research, any country faces serious difficulties that can be successfully overcome by joint efforts.

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