

## The Russian Arctic: innovative possibilities at the turn of the past and the future

A Scherbinin<sup>1,3</sup>, E Danilova<sup>1,4</sup>, A Sentsov<sup>2,5</sup>, L Bolsunovskaya<sup>2,6</sup> and Yu Bolsunovskaya<sup>2,7</sup>

<sup>1</sup> National Research Tomsk State University, 36 Lenin Ave., Tomsk, 634050, Russia

<sup>2</sup> National Research Tomsk Polytechnic University, 30 Lenin Ave., Tomsk, 634050, Russia

E-mail: <sup>3</sup> shai@mail.ru, <sup>4</sup> elena.a.danilova@yandex.ru, <sup>5</sup> 134-43@mail.ru,

<sup>6</sup> bolsunovskl@tpu.ru, <sup>7</sup> ju\_al@inbox.ru

**Abstract.** Under the growth of the geopolitical tension a political, economic and symbolic meanings of the Russian presence in the Arctic region take on special significance. The theme of an innovation development of the Arctic and its symbolic sense for the citizens of our country are actual for the modern political discourse. The considerable scientific and technical reserve accumulated during the Soviet period and representation of the Arctic as a major symbolic resource for Russian people that helps to determine the sense of patriotism and the pride for the country can promote the growth of the authority of Russia in the region. The development of the Arctic is being conducted in two ways: expansion of the extraction of hydrocarbons and strengthening of a military and political presence. The Russian consolidation in the Arctic can potentially increase the state status in the international community. However, in order to pretend to the strong positions in the region it is absolutely necessary to answer to the arctic technological challenge by the innovative technologies and decisions.

### 1. Introduction

The Arctic territories that are rich in natural resources have recently become an important place of international development and geopolitical interests. In the foreseeable future “all across the Arctic, changes in climate will create new vulnerabilities for infrastructure and present new design challenges” [3]. The importance of the question encourages studies in different fields. For example, “as a part of the national Norwegian monitoring program, long-term surveys of contaminants have been carried out” [13. P. 281], another research “emphasizes a need to investigate non-stationary climate response of Alaskan coastal forests to warming in other tree species” [10. P. 211].

Also, the point is that these climate changes in the Arctic region can cause consequences around the world. That is why “given the risks posed by climate change in the Arctic, the global response to the problem is important” [4].

Currently the juridical status of the Arctic territories is settled by the system of international agreements. There are five sectors in the Arctic according to the number of state presented in the region: Russia, the United States, Canada, Denmark (Greenland), and Norway. In addition to these countries India, China, Japan and some others begin to focus their geopolitical interests on this region.



So, the development in the Arctic is heavily troubled by political and legal risks. In addition, “the intense cold for much of the year, long periods of near-total darkness, the potential ice-pack damage to offshore facilities, the marshy tundra dictating seasonal activity in many areas and the limited biological activity all will take a huge toll on equipment and personnel” [2. P. 5].

Natural resources of the Arctic region, especially in oil and gas, are of an exceptional quantity. Besides, recent reports show that “disagreement over the legal status of the Northwest Passage and potentially over the status of Russian Arctic waters could lead to claims that double standards are being applied” [3]. For the Russian Federation the Arctic continental shelf is a region of high geostrategic and long-term economic interests of the state. This fact makes of this territory an independent object of national policy [22]. Russian President Vladimir Putin says that “our interests are concentrated in the Arctic. And of course we should pay more attention to issues of development of the Arctic and the strengthening of our position” [12].

In this regard the problem of innovative development of the Arctic, its symbolic meaning is extremely important for the contemporary Russian political discourse.

## 2. The Soviet Arctic

Current political and economic possibilities of Russia in the fight for the Arctic are largely based on a strong scientific and technological potential of the Soviet period. According to Russian researchers, “a very strong industrial layer was created in the Arctic zone of Russia during the previous century, and the scale of economic activity significantly surpassed the activities of other circumpolar countries” [11. P. 6].

The leadership of the USSR in the development of the North Pole is not in doubt: legendary Russian expeditions of icebreakers in the 1930's-1940's under the direction of O. Schmidt, V. Vize and others, heroic epic rescue of Chelyuskin's associates, launch of the first polar scientific drifting station “North Pole-1” (“NP-1”) under the direction of I. Papanin, heroic transpolar nonstop flights across the North Pole of V. Chkalov, landing of four Soviet aircraft on the pole, other technical records and projects.

All this created the idea of a space, where not only a feat took place, but also a qualitative synthesis of national science, engineering, and technology was presented.

We can already observe the understanding of this trinity in the memories of heroes-pilots who had taken part in the rescue of Chelyuskin's associates that were published immediately, in hot pursuit of the Arctic epic story. A complete symbolic picture gives the impression of a heavy but successful battle in which, on the one hand, “the Arctic threw all the means at its disposal: rumbling ice, polar blizzards, and terrible frost”. On the other hand, “through the ice descended up to Kamchatka in winter the Soviet ships went one after another. Our glorious icebreaker were circling around the world. Soviet airships, snowmobiles, all-terrain vehicles were involved in this great struggle. Polar radio stations almost passed to a war footing...” [8. P. 32-33]. Visually it can be represented as a map of a great battle [8. P. 15].

It was very important that the Arctic had become for the Soviet society the very sacred place where appeared the first people to receive the newly established highest title of Hero of the Soviet Union. Moreover, the victory over the Arctic became a demonstration of the transition to a new era. It was believed that this was an era not only of new culture, cities, new enterprises, new technology, but also an era of millions of new people brought up by the party [8. P. 3-4].

It should be noted that the dramatic events of the rescue of Chelyuskin's associates or the drifting of Arctic station “NP-1” were actually transmitted non-stop. And the American researcher Karen Petrone compares their effect with those of a soap opera [16. P. 50]. However, such findings of Western researches could be interpreted as an instrument of information war in the geopolitical struggle for the Arctic.

The Arctic became a place where not only “the political and physical map of the country was fundamentally redrawn” [8. P. 3], but the phenomenon of its subjective measurement was fixed. So,

this map was conceived by millions of citizens in terms of the Arctic, and, therefore, we could talk about the birth of the Soviet nation.

This process was not possible without the creation of the Soviet narrative. And the construction of a new socio-political reality focused not only on the heroes, but also on the new technical means of communication: telegraph, radio, film and mass distribution of print media [16. P. 49-50].

Soviet children were also involved into the sphere of this mass media. According to Karen Petrone, emulation and simple imitation mattered. Firstly, in fact, the construction of a new reality could not ignore the younger generation. So, for example, “in a nursery at the Kharkov plant women activists organized an Arctic room for a few days” [20. P. 200]. Of course, such games were regulated. So, in 1939 a scenario of mass game “In the footsteps of Papanin’s associates” was published [9]. A little later the game-journey turned into one “of the most sophisticated methods of political use of geographical knowledge” [15].

Secondly, and more importantly, for many years the Arctic narrative became a theme and a place of application for children’s fantasies, which raised more than one generation of Soviet citizens. Game, book, movie, magazine closely interweaved in a bunch of verbal and visual information. For example, let’s consider the magazine “Murzilka” №7 of 1937, which opens with the photographs of polar explorers Schmidt, Papanin, Vodopianov, Krenkel and ends with the story of the daughter of the legendary polar explorer and radio operator Krenkel Irina about how her dad was going to the North Pole. Also, there was an announcement of the book for children “The history of our flight” written by idol of Soviet children Valery Chkalov.

Growing up, children read fiction and adventures, looked spectacular movies, thanks to which the problem of Arctic exploration became one of the central ones in the formation of a new society. It should be noted that, in school programs, and not only in geography, the Arctic theme firmly took its place as one of the supporting ones for the education of children and youth. The heroic context was constructed in compositions, songs, movies, and works of visual art. All this inseparably bounded the Arctic and the Motherland in the mind of Soviet people. Please note that even later the theme of the Arctic did not lose to the theme of space exploration.

### **3. Post-Soviet perception of the Arctic**

The work of polar stations that provided a significant scientific and technological advance in the Arctic studies in the Soviet time, in the 1990’s was ceased for a decade. An immortal expression of Bulgakov’s professor Preobrazhensky that the ruin began in the heads unfortunately came true in public policy. In this case, we can not even talk about economic and technical surrender, but about a symbolic deconstruction of the Motherland. While the other Arctic powers were actively carrying out research and industrial development of the Arctic territory, Russia actually abandoned this process.

Since the early 2000’s political and expert quarters began active discussions about the need to restore Russian influence in the Arctic. As Prime Minister and Acting President of the Russian Federation in March 2000 in Murmansk Vladimir Putin held All-Russia meeting on the development of the Russian Arctic sector, Eastern Siberia and the Russian Far East [14] that denoted the fundamental interest of new Russia in the Arctic issues. In 2008, Russian President Dmitry Medvedev approved the document “Fundamentals of the state policy of the Russian Federation in the Arctic up to 2020 and further perspective” [6]. Since 2014 the socio-economic development of the Arctic has been performed as part of the state program of the Russian Federation that emphasizes the priority of the public interest in regard to this region [17].

This splash of political and scientific interest is also expressed in regular holding of meetings on Arctic exploration, in speeches of country’s top leadership about the need to strengthen the Russian presence in the Arctic region, in a wide coverage of this topic in mass media, in annual holding of Days of the Arctic since 2010, and other applied science conferences.

Arctic exploration has been performed by Russia in two main areas: expansion of the hydrocarbon production in the region and strengthening of its military and political presence. In the Russian Federation President’s Message to the Russian Federation Federal Assembly in December 2014 the

Arctic direction is positioned as a priority for the Russian economic policy. The need for an integrated project of contemporary competitive development of the North Sea Route as an effective transit route and a stimulator of business activity on the Russian Pacific coast is emphasized [24]. The Arctic oil and gas resources present an important potential additional source of hydrocarbons for Russia. According to experts, the total reserves of fuel power resources of the Arctic part of the Russian Federation exceed 1.6 trillion tons, and the continental shelf contains about a quarter of all offshore hydrocarbon reserves in the world [23].

The resource-based structure of the Russian economy and the unstable situation on the global geo-economic market determine Russia's strategic interest in the development of Arctic fields.

#### **4. Interpretation of the results**

As a result of the political and military actions of the countries, "Arctic development is often politically contentious, with sometimes opposing interests and perspectives between local, national, and international levels. Political support for development will continue to represent an uncertainty for businesses seeking to invest in Arctic projects" [3]. This fact does not facilitate an effective modeling and a safe planning of the future of the region [21] that is absolutely indispensable.

Also, "beyond the Exclusive Economic Zone (EEZ), countries must demonstrate that the seabed is a "natural prolongation" of the continental shelf in order to claim seabed rights. These practices have led to several overlapping claims between countries. For example, Russia has made a claim that its shelf extends all the way to the North Pole along the Lomonosov Ridge, a claim that the Canadians (as well as others) vigorously reject" [2. P. 5].

In the Arctic zone the components of the Russian and American missile warning systems are located. Also there are American air-defense interceptors in Alaska, and Russian analogs located on the coast of the Arctic Ocean. There is a Russian nuclear testing area on Novaya Zemlya (an archipelago in the North of Russia in the Arctic Ocean). Some of the Arctic countries repeatedly conduct military exercises in the region. In 2013 Russia conducted military exercises using the cruiser "Peter the Great" and nuclear submarines "Orel" and "Voronezh"; launches of cruise missiles were also conducted. In turn, in 2013 the U.S. carried out the "Arctic Challenge" training exercises in the Gulf of Bothnia and in the Barents Sea with the participation of the air forces of Sweden, Finland, and the United Kingdom [22].

Hereafter we have to note that severe climate conditions require innovative approaches and technologies in the development of hydrocarbon fields. In March 2014 Deputy Prime Minister Dmitry Rogozin informed about the launch of the newest strategic project for developing of underwater (subglacial) technologies of autonomous (robotic) exploration of mineral deposits of the Arctic seas [18].

At the same time, the exacerbation of the global geopolitical situation resulting from the Ukrainian crisis could not but affect the political and economic situation in the Arctic. For example, the management of OJSC "Oil Company "Rosneft" has already announced the postponement of well-boring at least for one to two years [19]. Also, the country's political leadership declared the engaging of Indian partners from "Oil and Natural Gas Corporation "Videsh" into the development of the Arctic shelf together with Russian oil companies [25]. Such statements are also largely due to the political situation and to the attempt to change the vector of economic cooperation to the eastern one (including China).

In relation with the sharp deterioration of the geopolitical climate the country's leadership intentionally focuses the attention of the population, international community, and other geopolitical players on the subject of Russian military, political and economic presence in the Arctic. In April 2014 the Russian Federation President Vladimir Putin held a historically significant extended meeting of the Security Council of the Russian Federation where it was announced an upcoming creation of a special state body for the implementation of the state policy in the Arctic on the strategic aspects of national security [23].

We can consider as a significant event the construction and transfer for the Navy of the Russian Federation in December 2014 of nuclear strategic submarine of the fourth generation “Vladimir Monomakh” from the board of which in September 2014 a successful start of ballistic missile “Bulava” was launched as part of state test operations [5].

Russian military presence in the Arctic is linked to the political, economic, and scientific interests. According to experts, “a permanent military presence in the Arctic will permit to strengthen significantly various research and expeditions in the region developed by representatives of Russian academic and economic sectors on the high-latitude track of the Northern Sea Route” [1]. In order to achieve this goal in 2014 the Ministry of Defense of the Russian Federation made significant practical steps to improve air defense system, to return here the units of the Armed Forces of the Russian Federation, to reconstruct the transpolar military airfields, to restore the military base on the New Siberian Islands, to conducting military exercises in the region. An important step is the creation of the Joint Strategic Command "North" on the basis of the Northern Fleet [7].

## 5. Conclusion

At this moment the ecological, legal, political, and geopolitical risks for the Arctic region remain impressive. All these risks and political pressure, unstable global balance of power in the region slow down the development of these remarkable territories.

At the same time parallel reciprocal moves should be expected from the Arctic states of NATO that turns the Arctic into a zone of potential geopolitical conflict. In the current geopolitical realities a balanced state policy is extremely important in order to neutralize as much as possible a hotbed of tension in the north. Difficult economic situation in the country requires the mature decisions in foreign policy. Russia’s presence in the Arctic is necessary and possible. The success is possible to the full extent provided that the Arctic will be recognized as an important symbolic resource for the Russians. The expansion of Russian economic, military, and political influence in the Arctic region has the potential to strengthen the position of the state in the international community. However, it is also very important what price the country should pay for this and what is the necessary responsibility on the part of key actors that make decisions.

In any case, the important condition for political and economic influence in the region is the adequate response to the Arctic technological challenge with innovative solutions and projects. Also, today it is evident that Russian political top management must create an effective system of country positioning in national and international political discourse in connection with the image of the Russian Arctic.

## References

- [1] An expert: a military presence of Russia in the Arctic will straighten the air-defense system (2013). RIA “Novosti”. 17 October. URL: [http://ria.ru/defense\\_safety/20131017/970666692.html](http://ria.ru/defense_safety/20131017/970666692.html) (access date 13.02.2015)
- [2] *Arctic oil and gas* 2013 Ernst and Young Limite
- [3] Arctic Opening: Opportunity and Risk in the High North (2012). *Chatham House – Lloyd's Risk Insight Report*. 01 April 2012. URL: <http://www.chathamhouse.org/publications/papers/view/182839> (access date: 15.02.2015)
- [4] Ford J D 2009 Dangerous climate change and the importance of adaptation for the Arctic's Inuit population *Environ. Res. Lett.* **4** 024006
- [5] From the board of atomic submarine “Vladimir Monomakh” the launch of «Bulava» was successfully executed 2014 JSC “Sevmash” [site]. 2014. 11 September. URL: <http://www.sevmash.ru/rus/news/1769--l-r-lr-.html> (access date 14.02.2015)
- [6] Fundamentals of the state policy of the Russian Federation in the Arctic up to 2020 and further perspective: Direction of the Russian Federation President of 18 September 2008. (2008).

- Security Council of the Russian Federation* [site]. URL: <http://www.scrf.gov.ru/documents/98.html> (access date 03.03.2015)
- [7] Gavrilov Yu 2014 “North” of the Arctic. *Rossiyskaya gazeta* 1 December. № 6546 (274), 7
- [8] *How we were rescuing Chelyuskin's associates* 1934 ed O U Schmitt, I L Baevskiy, L Z Mekhlis (Moscow: Pravda)
- [9] *In the footsteps of Papanin's associates* (mass play) 1939 (Moscow: No publishing)
- [10] Jarvis S K, Wiles G C, Appleton S N, D'Arrigo R D and Lawson D E 2013 A Warming-Induced Biome Shift Detected in Tree Growth of Mountain Hemlock [*Tsuga mertensiana* (Bong.) Carrière] along the Gulf of Alaska *Arctic, Antarctic, and Alpine Research*. **45** 211–218
- [11] Melamed I I, Avdeev M I, Pavlenko V I and Kutsenko S U 2015 Russian Arctic zone in social and economic development of the country *Vlast*. **1** 5–11
- [12] Nato on high alert as Putin eyes up Arctic for empire 2015 *Daily Express*. Northern and Shell Media Publications. URL: <http://www.express.co.uk/news/world/508019/Nato-high-alert-Putin-eyes-Arctic-empire> (access date: 05.02.15)
- [13] Ørbæk J B, Tombre I and Kallenborn R 2004 Arctic-Alpine Ecosystems and People in a Changing Environment *Arctic, Antarctic, and Alpine Research* **36** 281–283
- [14] Order of the Russian Federation Government of 20 January 2000 №96-r 2000 *Law portal “Poisk zakona”* [site]. URL: <http://poisk-zakona.ru/169390.html> (access date 03.03.2015)
- [15] Orlova G 2009 «Distance journey»: managing of geographic imagination in Stalin's age. *NLO* [site]. № 100. URL: <http://magazines.russ.ru/nlo%20/2009/100/or21.html> (access date 10.03.2015)
- [16] Petrone K 2000 *Life has become more joyous, comrades: celebrations in the time of Stalin* (Bloomington & Indianapolis: Indiana University Press)
- [17] Resolution of the Russian Federation Government of 21 April 2014 №366 “About the statement of Russian Federation state program “Social and economic development of the Arctic zone of the Russian Federation up to 2020” 2014 *Government of the Russian Federation* [site]. URL: <http://government.ru/media/files/AtEYgOHutVc.pdf> (access date 15.02.2015)
- [18] Rogozin D 2014 Let's look in abyss. *Rossiyskaya gazeta*. 14 March. **6331(59)** 17
- [19] “Rosneft” will postpone well-boring at some parts of the Arctic because of the sanctions 2014 *RBK* [site]. 22 December. URL: <http://www.rbc.ru/rbcfreenews/549862519a794748113309f2> (access date 23.02.2015)
- [20] Scherbinin A I 2012 *Totalitarian indoctrination as a consciousness control: tutorial* (Tomsk: Tomsk State University Publishing)
- [21] Sentsov A, Aleksandrov O, Bolsunovskaya Yu, Kuimova M 2015 Modeling of the Future in the Programs of Political Parties. *Proceedings of The International Conference on Research Paradigms Transformation in Social Sciences 2014* vol **166** doi:10.1016/j.sbspro.2014.12.568
- [22] Sentsov A, Bolsunovskaya Yu and Bolsunovskaya L 2014 Effective Planning of the Future of the Arctic *IOP Conf. Ser.: Earth Environ. Sci.* **21** 012014
- [23] Session of the Security Council about realization of the state policy in the Arctic 2014 *President of the Russian Federation* [site]. 22 April. URL: <http://state.kremlin.ru/face/20845> (access date 03.03.2015)
- [24] The Russian Federation President's Message to the Russian Federation Federal Assembly. 2014 *President of Russian Federation* [site]. URL: <http://www.kremlin.ru/transcripts/47173> (access date 13.03.2014)
- [25] Topalov A 2014 The Arctic waits for rupees. *Gazeta.ru* [site]. 12 December. URL: <http://www.gazeta.ru/business/2014/12/11/6337929.shtml> (access date 13.02.2015).