

Abstracts

The Nuuk Declaration: New Phase of the Arctic States Cooperation

*S. Lavrov,
Minister of Foreign Affairs of
Russia*

In the world the greater attention is now given to the Arctic regions. The regional processes connected with climate change and new technologies that allow initiating the projects of navigation alternative ways and gradually beginning the economically sound development of rich Arctic resources, demand the all-round and careful analysis from the point of view of the complex maintenance of RF national interests first of all.

Development of International Arctic Cooperation: the Arctic Council Role

A. Chilingarov

The Arctic Council nature and its role as the international regional structure appealed for the assistance in the environment safety cooperation and the providing of the circumpolar areas sustainable development is given in the article. Over the years of its existence the Arctic Council has accepted the documents of the paramount importance concerning the strengthening of cooperation between the countries of the Arctic region as well as the interaction in the Arctic environment protection, the Arctic monitoring and assessment, the prevention, readiness and emergency response, preservation of the Arctic flora and fauna and the sustainable development.

Cold War Ecological Legacy Elimination in the Arctic Region of Russia: the International Cooperation

*A.Sarkisov, S. Antipov, R. Kalinin,
M. Kobrinsky, P. Shvedov*

The environmental implication of the nuclear fleet long-term operation in the Northwest region of Russia is considered in the article. The international decisions and the foreign institutions role in solving the accumulated environmental problems are also analyzed. There are the preconditions, methodology of the Strategic Master Plan development and its role in the organization of works concerning the international cooperation problems implementation by the elimination of nuclear, radiation and chemical threats. The results of works for last decade are also considered.

Damaged Soil of the North and Remediation Problems

L. Kapelkina

The great requirement in mineral and energy resources as well as the scarcity of their reserves at the areas with the fertile climate determines the necessity of mineral deposits exploitation and processing in rugged conditions of the North.

The fragile and vulnerable subarctic ecosystems have appeared under the influence of the powerful mining technique and obsolete technologies from the environmental safety point of view. The development of the mineral and energy resources of the North runs considerably before the research of the environmental problems related to the mining activity.

The fact of many population centers construction in this region is connected with the exploration activities, the mining enterprises building and operation as well as the oil and gas field facilities construction. The construction of Kirovsk (former Khibinogorsk), Apatity, Olenegorsk, Monchegorsk, Kovdora, Norilsk, cities, Nizhnesortymysk, Koashva, Nickel, Bovanenkovo settlements and some others is related to resource development.

Seismic Exploration, Offshore Oil and Gas Fields Development of the Arctic Western Region

N. Laverov, V. Bogoyavlensky

The article is a logic continuation of the previous authors' research of the Eastern Arctic region offshore (Russia, Norway), the Caspian Sea and the northern part of the Gulf of Mexico (USA). The geological-geophysical studies and oil and gas bearing of the Western Arctic region are analyzed in this article (the USA, Canada, and Denmark). There is the information of oil and gas production levels at the onshore and offshore of the Northern Slope of Alaska. The comparison of oil and gas reserves and production levels in offshore oil and gas pools of the circumarctic region is performed.

Hydrography and Arctic ocean investigations

N. Neronov, E. Medvyodkin

The article shows that the Arctic represents a hydrosphere field in the most part. The hydrography is at the first place in its study. The modern definition of Hydrography concept is given. Some data of the region development history and results of the hydrographic works as a part of the investigations at the North Pole-36 drifting station are given. The attention is paid to the environmental aspects of the Arctic Ocean development.

The Arctic Basin Demilitarization Challenges Solution by Hydrographic Research Results

*G. Naryshkin, S. Alexeev,
A. Kostenich, B. Fridman*

The article deals with the domestic hydrographic research results concerning the definition of the continental shelf external border of Russia in the Arctic region according to the requirements of the United Nations Convention of marine law (1982). The basic direction of researches is the morphological and morphometric analysis of the bathymetric data for the substantiation of the Arctic basin continental borderland position as well as the definition of base parameter of the continental shelf external border – foot of the continental slope.

The Integrated Study in the Aeronautic and Amphibious Technology Providing the Development of RF Hard-to-Reach Areas

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The role of small aircrafts in the maintenance of the transport access, the provision of the RF Arctic zone population life and work is considered in the article.

The analysis of the current state, tendencies of development and forecast of the Russian market of the air transportation, aviation works and use of small aircrafts at the RF area including the Arctic zone till 2030 was made by Central Aerohydrodynamics Institute (TsAGY), State Scientific-Research Institute of Civil Aviation, SJC Central Hydrofoil Design Bureau, Moscow State Technical University named after Bauman, the Russian Academy of State Service by the President of the Russian Federation, JSC Yakovlev Aircraft and other enterprises. The geo-economic features of the Arctic zone assume the maintenance of the air transport and its state support in prospect. The significant features of the aircraft application in the Arctic influencing the small aircraft efficiency at the RF area including the Arctic zone are considered.

Three models of the aircrafts operation with the various airfield performances are established. The priority of transport operation implementation possibility before the improvement of the cruiser mode flight indicators is established. The prospects of aircrafts with air cushion landing system application are considered. The assessment of prospects of high-speed helicopters and convertible aircrafts development in Russia and abroad are also given.

The conclusion of the necessity of domestic small aircrafts development to provide the RF activity in the Arctic regions is made as well as the most important mega projects of the RF in the Arctic are specified.

Challenges of Environmental Management Restructuring at Kola Metallurgical Facilities

T. Alieva

The article deals with the special features of the environmental principles management introduction at the enterprises of Kola metallurgical facilities. The classification of the existing environmental management structure, basic characteristics of the environmental management introduction procedure at the enterprises is also set up in the article. The process disadvantages are assessed and the ways of its elimination are proposed.

Gas Aviation: Options of Solving the Transport Issue of the Northern and Arctic Regions

A. Dutov, V. Mavrisky, V. Zaytsev

The regional air traffic was recently considerably reduced especially in the Far North of Russia and nearby areas. The high flight tariff caused by runaway aviation fuel prices, its transportation and storage (seasonal delivery) is one of the reasons. This factor as well as the insufficient solvency of the population is the reason of the inaccessibility of the air traffic for the most people of the hard-to-reach and under-populated areas of Russia. As a result 12-15 million persons (60-67 %) are almost cut off from the country life. It can be a threat to the national interests of Russia. Therefore the transport mobility of the population in these regions is low and is being supported by the subsidies that exceed some billion rubles and its size is being annually increased.

But there are large reserves of the associated oil and nature gas in the regions under review. The products of its processing may be used as aviation fuel. They are purer for the environmental than the aviation kerosene and some of them are even cheaper. The aircrafts working on gas fuel could solve a transport problem of the hard-to-reach northern, Far East and Arctic regions of the Russian Federation.

FGUP Central Aerohydrodynamics Institute (TsAGY), FGUP State Scientific-Research Institute of Civil Aviation, FGUP Central Institute of Aviation Motors (TsIAM), OAO NIPIGASPERERABOTKA, OOO Interaviagas, the helicopter and aircraft design bureaus and other institutions are engaged in this researches from the end of the last century.

As a result the first-world flight of the experimental Mi-8TG helicopter (one of two motors worked on propane-butane fuel) was performed in our country in 1987. During the trial of Tu-154LL flying laboratory in 1988 one of three motors worked on liquid hydrogen and liquefied natural gas (methane).

**Autochthons of the Arctic
and Population of North:
History, Traditions,
Vital Problems**

O. Murashko

The current state of the traditional way of life and nature management of the autochthons of the North in the Russian Arctic regions is considered in the article. A cultural variety and specificity of the traditional strategy of the autochthons adaptation in the Russian Arctic regions is described. The transformation of the autochthons traditional way of life under the influence of changes of the state national policy in the north for last 300 years is observed. The reasons of a crisis state of demographic, cultural characteristics and traditional nature management of the autochthons of the Arctic regions now are analyzed. The assessment of problems obstructing the sustainable development of the autochthons is given, some ways of their solution are offered.

**The Arctic is in the Center
of Marine Board of RF
Government Attention
(According to papers of
meeting in Naryan-Mar on
July 6, 2011)**

M. Moskovenko

The Marine Board of the RF Government has considered the challenges of the Arctic regions development intensification at the meeting held in Naryan-Mar (Nenets autonomous region) on July 6, 2011.

**Joint Session of Editorial
Council and Board of
«Arctic: Ecology and
Economy» Scientific,
Information and Analytical
Journal**

The joint session of the Editorial Council and Board of «Arctic: Ecology and Economy» Scientific, Information and Analytical Journal was held on March 11, 2011 under the direction of N. P. Laverov, the Academician, the Chairman of the Editorial Council, in the Presidium of the Russian Academy of Sciences. The matters of the goal mission, the key tasks and the order of the journal edition and the organization of wide public audience formation have been considered at this session.