

Судостроение

Издаётся с 1898 г.

НАУЧНО-ТЕХНИЧЕСКИЙ И ПРОИЗВОДСТВЕННЫЙ ЖУРНАЛ

ISSN 0039-4580

ПРОЕКТИРОВАНИЕ СУДОВ

**ВОЕННОЕ
КОРАБЛЕСТРОЕНИЕ**

**№ 4
2019**
июль-август

**СУДОВОЕ
ОБОРУДОВАНИЕ**

**ТЕХНОЛОГИЯ
СУДОСТРОЕНИЯ**

ИСТОРИЯ



АО «ЦТСС» — 80 лет!

SUDOSTROENIE 4 2019

/SHIPBUILDING/

(845) July–August

Published since September 1898 r.

Aleksandrov M. V., Rymanov V. F. Stages of a great way. Technological center of shipbuilding industry celebrates its 80-years anniversary!

The author narrates about organization, establishment and development of Shipbuilding and Shiprepair Technology Center and most interesting projects currently developed by company's specialists.

Keywords: shipbuilding technology, shipbuilding, shiprepair, modernization, reconstruction.

AT SHIPBUILDING YARDS

CIVIL SHIPBUILDING

Aleksandrov M. V., Lisitsky V. V. Issues and prospects of fishing fleet development in the Russian Federation.

This article reviews issues and prospects of fishing vessels development and introduces design of fishing vessels developed by DB «Vostok».

Keywords: fishing industry, trawler, freezing trawler, refrigerating trawler, fishing vessel.

Semenov D. O., Mokhov I. A., Luskin B. A. Design features of marine robotized systems based on autonomous submersible vehicles.

Expansion of application field of unmanned submersible vehicles is caused by various reasons: deep-sea operation capability, servicing costs reduction, etc. Development trend of unmanned submersible vehicles is vectored from construction of single autonomous or remotely piloted vehicles to construction of marine robotized systems merging single-type or multi-type vehicles, control systems, communication and delivery facilities and other hardware.

In order to solve complex tasks, one should control such vehicles using «group control» method, i.e. controlling several systems as one unified object.

Keywords: unmanned submersible vehicles, robotized system, monitoring and control system, information support, communication facilities, group control.

NAVAL SHIPBUILDING

Baskakov I. Ya. Marine self-driven floating cranes, P.02690.

This article tracks construction history of marine self-driven floating cranes (project 02690) by JSC SC «Almaz» series and indicates their technical specifications.

Keywords: marine self-driven floating crane, auxiliary fleet, JSC Shipbuilding Company «Almaz», technical specifications.

Krasilnikov A.V., Gerasimov N.I. Technological support and exploitation of small-sized torpedo launchers

This article describes design and technological features of small-sized torpedo launchers and issues regarding complex provision of their development, production and installation on existing or projected submersible vehicles.

Keywords: small-sized underwater weapons, launchers, technological support, design, trials, production, installation.

SHIP POWER PLANTS

***Gerasimov N.I., Kanaev D.N., Grachyov I.V., Krasilnikov A.V.* Installation of nuclear ship power: plants main stages of development**

This article reviews development stages of assembly and installation procedures of nuclear power plants (NPPs) on offshore facilities. The authors describe main developments achieved at first stages of nuclear shipbuilding and analyze trends and tasks for further progress in area of installation of shipboard NPPs.

Keywords: modular method, assembly unit, nuclear power plant, power modular installation, nuclear-powered submarine, zonal block, splash lubrication, pulsation, pulse flushing, flushing stand, electronic theodolite, tachometer, laser tracking device, laser radar.

SHIPBUILDING ORGANIZATION AND TECHNOLOGY

***Gabdrafikov Yu. M., Levshakov V. M., Vasilyev A. A.* General issues and tasks for deployment of digital production facilities at Russian shipyards.**

The authors hereby analyze advanced development of JSC SSTC in area of Russian shipbuilding modernization based on such concepts as «Digital Shipyard» and «Industry 4.0» as well as main technological development trends of shipyards.

Keywords: digital shipyard, automation, laser technologies, composite shipbuilding.

SHIPBOARD EQUIPMENT

***Romanovsky V. V., Nikiforov B. V., Makarov A. M.* Analysis of valve inductor drive of 1 mW capacity for electric ship propulsion system.**

Modern shipbuilding industry tends to install electric propulsion system on all vessels. This system comprises rudder propellers (RPs), including those of Azipod type. Valve inductor drive is excellently compatible with RPs of relatively low capacity due to its unique reliability and overload resistance. Undisputable reliability of the drive lies in its multiphase design. Failure of one or several phases shall not impact overall engine operation. This article reviews modern calculation and modelling technologies for electric devices divided by three types: circuit, field and mixed. The authors hereby demonstrate universal calculation structure and functional diagram of computer-based modelling of valve inductor drive operation. Domestic enterprises have accumulated huge experience in production of RPs and thrusters, thus ensuring competitiveness of domestic RPs in all market segments.

Keywords: electric ship propulsion system, Azipod, valve inductor engine, permanent magnet drive, rudder propeller.

***Fomin A. P.* National standardization in shipboard machinery sector.**

This article reviews modern collection of normative documents regarding standardization of shipboard machinery by category-wise and type-wise principle and justifies most feasible sequence for development of national standards for the same. It is noted, that national standards (new/updated for various industry sectors) should be developed for inter-sectoral application, and their requirements must be followed by all project participants regardless of their departmental affiliation or form of ownership. Links to the above standards must be included in standardization documents.

Keywords: shipboard machinery, standardization, national standard, international standard, normative documents fund.

INFORMATION SECTION

***Kireev V. N.* Main achievements of DC «Soyuzproyektverf» within the period from 2015 to 2019 in area of design, modernization and retooling of shipbuilding companies *Kulichkova E. A.* «Armas» design bureau: stages of development. *Klyachko L. M.* 15 years anniversary of scientific-expert council or Marine board affiliated with the Government of the Russian Federation. Foreign information. Results of IMDS-2019. New books**

HISTORY OF SHIPBUILDING AND FLEET

***Afonin N. N.* Torpedo boats «Gelendzhik», «Gagry» and «Poti». Studying the French experience.**

Having neither technical nor financial capabilities to deploy production facilities for new-to-build torpedo boats, Russia was forced to place orders for its first ships of such class in other countries, including France. Active participation of Russian marine engineers and officers soon allowed to commence series production of such ships at Russian shipyards.

Keywords: history of shipbuilding, history of fleet, torpedo boat.

***Platonov A. V.* First post-war destroyers of USSR Navy.**

The author narrates about construction of P.30-bis, P.56, and P.41 destroyers in USSR and their modifications.

Keywords: history of shipbuilding, destroyer, design.

***Vasilyev D. M.* Painting of smoke funnels of mine yawls on Danube river in 1878.**

This article tells about visual identification of ships and vessels of the Russian Navy in the period of reformation of Nizhny-Danube division (1878), e. g. repainting smoke funnels of yawls, steam vessels and barges.

Keywords: Russian-Turkish war of 1877–1878, Nizhny-Danube division, painting, smoke funnels, steam yawls, steam vessels, barges.