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**СУДОВОЕ
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**ТЕХНОЛОГИЯ
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ИСТОРИЯ



SUDOSTROENIE 2 2016

/SHIPBUILDING/

(824) March–April

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Development strategy for Russian inland water transport AT SHIPBUILDING YARDS

110th anniversary of Russian submarine fleet 10

NAVAL SHIPBUILDING

***Spiridopulo V.I.* Northern Design Bureau – Ahead of Time**

The article is devoted to the history of Northern Design Bureau and briefs about specific features of designed ships throughout the years.

Keywords: Northern DB, destroyer, cruiser, frigate, patrol boat, design.

***Guryanov K.V., Guryanov S.K., Sagaidakov F.R.* New generation of aircraft carriers in British Navy**

The article tells about construction of a new generation aircraft carrier, the biggest battleship ever built in Great Britain, her design feature, united electric power system and its advantages, shipborne aircrafts and construction technology.

Keywords: aircraft carriers, performance characteristics, armament, united electric power system.

CIVIL SHIPBUILDING

***Sazonov K. E.* Actual problems of transport ships propulsion qualities**

Keywords: aircraft carriers, performance characteristics, armament, united electric power system.

***Gagarina I. V.* Educational books shall be re-issued**

SHIP POWER PLANTS

***Guzhvenko I.N., Chanchikov V.A., Svekolkov S.A., Burmistrova O.V.* Methods for increasing reliability of marine diesel engines**

The authors study possibility of increasing reliability and reduction of wear of marine diesels sleeve assemblies by adding wear-preventive agents to lubrication oil. Tribological tests were carried out for molybdenum di-selenide based additive, which exceeds the basic oil in reducing sleeve assemblies wear, as well as for some other additives.

Keywords: sleeve assemblies, lubricating oil, wear-preventive additives.

MARINE EQUIPMENT

***Pshenitsyn A.A., Nekrasov V.A., Samokhin V.S., Spiridonov A.Yu.* Using complex modeling methods for resolving hydrodynamic tasks**

The authors study application of computer modeling methods for estimation of hydraulic parameters of complex throttle devices. Flow symmetry was considered and estimation net is adapted for better accuracy. Theoretical adjustment characteristic of actual low-nose throttle device was estimated. Analysis of this characteristic and comparison with experimental results shows out that computer modeling is effective for solving of this task.

Keywords: computer modeling, estimation, throttling device, acoustic noise, vibration, eddy zone, hydrodynamic characteristics.

***Khabarov A.A.* Designing of independent friction bearings for main shipborne machinery**

Issues were studied related to design of highly efficient marine independent bearings for main ship machinery instead of slider bearings with circular lubrication. Methods are described for making lubricating layers with specific properties and organization of inner circulation of lubricant in lubricating layer of high-speed independent bearings, as well as design of high-speed independent bearings.

Keywords: high-speed bearings, independent bearing, liquid friction, inner circulation of lubricant, independent lubrication.

***Katanovich A.A.* Testing equipment for simulation of electromagnetic situation and estimation of electromagnetic compatibility of onboard communication facilities**

The article describes test equipment offered for checking electromagnetic compatibility of onboard radio communication aids. The equipment is intended for simulation of onboard electromagnetic simulation, estimation of allowed noise level at the input of radio devices under test, finding minimal frequency differences between transmitting and receiving devices and recording the same in the database for further use to ensure electromagnetic compatibility of onboard radio devices.

Keywords: simulation stand, equipment, aids, noise protection, electromagnetic compatibility.

***Fomin A.P.* Necessity of unification for quick-release couplings in fire-fighting system**

Conditions are examined for provision of water from the shore or other vessel for fire-fighting onboard surface naval ships. Given is justification of necessity in unification of onboard quick-release couplings with on-shore ones and those mounted on merchant ships.

Keywords: unification, internationally practiced on-shore coupling, adapting coupling, fire equipment.

SHIPBUILDING ORGANIZATION AND TECHNOLOGY

***Grabelnikov V.Yu., Yevgenov V.N., Dobrovenko S.V.* Examination of special section "Fire safety requirements" for construction and repair of ships**

At present, special section "Fire safety requirements..." for construction and repair of ships is being examined by JSC Omega. A certain studies were conducted for pre-production preparation, guiding documents were issued and experience gained in examining of special section "Fire safety requirements..." for construction and repair of ships.

Keywords: examination, fire safety, guiding documents, expert report.

***Kipreev E.V., Gavrilyuk L.P.* Certification of made course alignment afloat with use of gyro instrument**

The article describes approval of gyro instruments of navigation complex upon completion of installation afloat.

Keywords: gyro instruments, navigation complex, relative azimuth, approval.

SHIPREPAIR AND UTILIZATION

Lelyukhin V.E., Kolesnikova O.V. Influence of defect survey report quality to effectiveness of work management in shiprepair

Current status of shiprepair pre-production preparation at domestic shipyards is reviewed. It is demonstrated that effectiveness of work depends on quality preparation of defect survey data. It is proposed to work out a structure of article, machine or unit at the preparatory stage, and carry out defect survey in strict compliance with the accepted structure.

Keywords: Pre=production preparation, defect survey, quality of data/information, design and production engineering.

Khromov V.N. Recovery of marine diesels parts by thermoplastic deformation

The author proposes to use thermoplastic deformation for recovery of surfaces of marine diesel parts: outer surface of piston pins and inner surface of sleeves.

Keywords: recovery of parts, thermoplastic deformation of metal, marine diesel engine.

SHIPBUILDING MATERIALS

Gorokhov M.S., Ronnov E.P., Pavlov I.Yu. Studies of fiber concrete wear capacity

Justification of using fibro-concrete as a hull material for bunkering vessels, those are subject for considerable abrasive effect during their service life. The justification is made on the basis of comparative analysis of tests applied to conventional and fibro-concrete under laboratory conditions, allowing modeling actual temperature and moisture influence to material during its service life. With obtained after tests results, specific features of fibro-concrete composite, subject for heat\moisture and abrasive exposure.

Keywords: reinforced concrete hull, bunkering vessel, fibro-concrete, water saturation, abrasive effect.

Alpherov V.I., Ryzhkin A.E., Zadumov A.V. Estimation of heat transfer operties of hybrid polymer composite materials

With use of finite elements method, analysis is made for heat-transfer parameters of three-layer composite structures. Such analysis was necessary to calculate heat protection parameters for LNG vessels, whether intended for its storage, transportation and functional use, as well as for estimation of ships stealth ratio.

Keywords: hybrid polymer materials, heat transfer parameters, finite elements method.

INFORMATION SECTION

Amosov A. G. Shipbuilder Brandaus A. I. Nikitin K. A. Veterans remain in ranks. Afonin N. N. Icebreaker Krasin. Exhibition for 100th anniversary of ship laying. Deryugin S. V., Pavlova A. S. Boat exhibition in Helsinki. Ocean research vessel «Evgenii gorigledzhan». 75 years anniversary of Katanovich A. A. Series of surveying motor boats. Reconstruction of ship launching facility. Congratulations!

HISTORY OF SHIPBUILDING AND FLEET

Klimovskiy S.D. The Winens' steamboats and the Russian Navy

In the middle of 19th century, brothers Winens from Baltimore, USA, designed and manufactured a steamboat in the form of cigar, with rotor engine, located in the midship. One of such pilot ships was built in Russia. This story is described in the article with use archive documents, of previously not published.

Keywords: history of shipbuilding, rotor engine, steamboat, experimental vessel.

Kolosov E. E. Diving suit by Leonardo da Vinci