

ИНТЕРНАЦИОНАЛЬНОЕ СУДОСТРОЕНИЕ

Издается с 1898 г.

НАУЧНО-ТЕХНИЧЕСКИЙ И ПРОИЗВОДСТВЕННЫЙ ЖУРНАЛ

ISSN 0039-4580

ПРОЕКТИРОВАНИЕ СУДОВ

№ 4
2018
июль-август

**ВОЕННОЕ
КОРАБЛЕСТРОЕНИЕ**

**СУДОВОЕ
ОБОРУДОВАНИЕ**

**ТЕХНОЛОГИЯ
СУДОСТРОЕНИЯ**

ИСТОРИЯ



SUDOSTROENIE 4 2018

/SHIPBUILDING/

(839) July–August

Published since September 1898 r.

AT SHIPBUILDING YARDS

NAVAL SHIPBUILDING

Egorov G. V., Egorov A. G. Main solutions for the new generation of «superfull hull line» cargo ships of mixed (river-sea) and internal navigation.

The article demonstrates that the specific feature of this new generation of tankers and cargo ships is not only their increased fullness ratio, but also a series of other principally significant properties which were obtained by the Marine Design Bureau during scientific research in the years 2001–2017 and which were implemented in new concepts: substantiation of main dimensions, selection of shape for the fore end and aft end, number and type of propulsion devices, optimization of hull structure, etc.

Keywords: ships of mixed (river–sea) navigation, design, main features.

Gavrilyuk L. P., Lyamin P. L., Bitnyi-Shlyakhto M. V., Krasil'nikov A. V. Development prospects for high-precision measurement market in Russian civil shipbuilding.

Analysis of the high-precision measurement market in civil shipbuilding is performed, tendencies for its development are examined, and prognosis for its changes up to 2030 is made. PEST and SWOT analysis methods have been used for predicting the development of the market.

Keywords: high-precision measurements, civil shipbuilding, prognosis, PEST-analysis, SWOT-analysis.

NAVAL SHIPBUILDING

Dorofeyev V. I., Klyakhin V. N., Korobkin P. A., Ubrantsev Yu. A. Use of foreign experience in evaluating the practicability of reducing ship thermal field.

When evaluating the practicability of reducing thermal field of a surface ship, it is suggested to use the experience of designers of US Navy ships, who refused to implement complex and expensive technical solutions for modern cruisers.

Keywords: ship thermal field, sources for thermal field origination, technical solutions, battleships.

OPERATION OF FLEET

Bayov A. S. Impact of ship draught on the structure of ship power plants.

With the help of additive methodology for substantiating the composition of ship power plants, the article demonstrates that ship draught has a determining impact on the structure of ship main power complex.

Keywords: single-shaft and two-shaft power plants, additive methodology, propulsive efficiency of screw propellers.

Gavrilenko A. M., Frolov V. A., Glazko Yu. G. Data bases of general ship wrecks for evaluating and analyzing the risks on manned underwater vehicles.

Basic information is provided for two data bases which were created for the first time. The first data base is for general wrecks on Russian nuclear submarines during 50-year period of their operation, and the second data base is for statistical meanings of risk of these wrecks for the submarines proper and for their crew.

Keywords: data base, general ship wrecks, submarines, wreck risks.

SHIPBOARD EQUIPMENT

Butylin V. M., Evstifeyev M. I., Mashoshin A. I. New-generation cabinet with conductive-liquid cooling for instruments of marine radio-electronic complexes (version for small-scale production).

Substantiation is made for the structure of instrument cabinet with conductive-liquid cooling, which was developed in JSC «Concern TsNII Elektropribor». This cabinet has improved parameters for heat removal (up to 30–40 W for one modular place) and higher manufacturability in comparison with analogous instrument cabinets, and it is suited for being made by predominantly using general-purpose machine-tool equipment.

Keywords: conductive-liquid cooling, radioelectronic complexes, instrument cabinet, peck feed drilling technology.

Petrov N. V., Rozov N. V. Tests and flushing of hydraulic systems with the use of portable stands.

Specific features are examined for the structure of the portable stands, which are meant for tests and flushing of hydraulic systems and have capacity of 12, 24, and 48 m³/hour, and of the portable stand for tests and adjustment of hydraulic equipment. Technical features and main operating modes of the stands are described.

Keywords: hydraulic systems, hydraulic equipment, flushing, tests, adjustment.

Byzov A. V., Dunaev A. A., Yakovlev A. V. Design, construction and reconstruction of buildings and facilities of shipbuilding enterprises located in seismically dangerous areas.

The article deals with calculation of seismic impacts at the site of production facilities of the Sevastopol branch of JSPC «Ship-repair Center Zvezdochka» which belongs to JSC «United Shipbuilding Corporation.»

Keywords: Crimea, Sevastopol, seismic impacts, facilities.

SHIPBUILDING ORGANIZATION AND TECHNOLOGY

Suzdalev I. V., Aleksandrov V. L. The issue of evaluating the efficiency of technological welding processes.

The article examines a series of welding methods which are presently widely used in shipbuilding, and it presents their comparative analysis with reference to the theoretically ideal welding method (TIWM) under which minimal activation energy is consumed. In comparison with the TIWM, the electron-beam method (EBM) can be considered the most promising technological process. The authors of the article state that implementation of the EBM gives a real opportunity for making a transition to machine-building accuracy in manufacturing standard ship hull structures, and at the same time it provides a considerably higher productivity of the process.

Keywords: electron-beam welding, activation energy.

Gerasimov N. I., Grachev I. V., Lisitsky A. M. Centering alignment of a heavy-weight assembly unit during its horizontal loading into ship compartment on two roller tracks which are positioned in the zone of the centerline plane.

The authors of the article have established that the use of roller tracks for loading large-size assembly units into ship compartments entirely excludes a complicated and labour-intensive operation of centering alignment of assembly units with regard to principal installation and reference planes.

Keywords: centering alignment, roller track, loading of assembly units on ship.

SHIPBUILDING MATERIALS

Grachev I. V., Iva A. A., Stavrov S. A., Fedorova O. E. A new polymer material «EPM» has been approved for installation of shipboard mechanisms and equipment.

A new polymer material «EPM», which has been developed by JSC SSTC and is intended for installation of shipboard mechanisms, has been approved by the Russian Maritime Register of Shipping.

Keywords: polymer materials, shipboard equipment, installation, repair.

INFORMATION SECTION

University Cup 2018. «Aleksandr Sannikov» – a high-technology icebreaker. Naval Museum at Lloret de Mar. Book review for: Aleshin O. V., Barbanel' B. A., Koneev A. N., Fedulov S. V. Activity of USSR Navy Design Bureau in Berlin (1945–1947). Conference «Information technologies in shipbuilding» was held at Severnaya Verf shipyard. Design Bureau «Vostok» of JSC SSTC – modern standards for designing fishing and research ships and vessels. Summary of the regular meeting of the Association of Shipbuilders of St. Petersburg and the Leningrad Region. Conference «New approaches in building fishing ships»

HISTORY OF SHIPBUILDING AND FLEET

Pridannikov M. I. Motor boats of Baltic Fleet Communication Service.

The article deals with issues related to design and construction of patrol boats which were used by the Communication Service of the Baltic Fleet of Russia during World War I, in 1914–1918. Drawings, photos and technical specifications of the boats are provided.

Keywords: naval shipbuilding, design, construction of boats, patrol boat, motor boat.

Tsekhanovskaya O. K. K. A. Veshchilov and A. V. Ganzen – last painters of the Ministry of the Navy.

The article discusses works of two painters of the Ministry of the Navy: K.A. Veshchilov (1877–1945) and A.V. Ganzen (1876–1937). Some of their works are preserved in the collection of the Central Naval Museum.

Keywords: seascape painter, painters of the Ministry of the Navy, collection of paintings of the Central Naval Museum.

Ovsyannikova E. V. Women and sea.

The article gives report about the exhibition «Women and Sea» which was held in the Central Naval Museum from 7 March until 29 July 2018.

Keywords: exhibition, women and sea.