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ИСТОРИЯ



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/SHIPBUILDING/

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CIVIL SHIPBUILDING

G.V. Yegorov, D.V. Chernikov. Multi-purpose firefighting tug, Pr. 17.

This article analyzes the existing fleet of rescue tugs and proves the necessity for construction of new multi-purpose rescue tugs with extended functionality. Main dimensions and specifications of Pr.17 tug have been indicated. Pr. 17 tug can operate in sea regions belonging to R1 navigation area. The authors reveal history of successful activities of the tug which prove efficiency of its design concept.

Keywords: tug, fire-fighting vessel, multifunctional performance, tugging, specifications

NAVAL SHIPBUILDING

I. Ya. Baskakov. Coastal-type stringing trawler, Pr. 1253

The author narrates about design and construction of coastal-type stringing trawlers, Pr. 1253.

Keywords: history of shipbuilding, ship design, mine sweeper, coastal-type trawler, stringing trawler

V.A. Sutormin. Coast guard ship «Purga». Construction and quality control.

This article narrates about construction and acceptance of coast guard 1st class ship «Purga», Pr. 52, which was in the lines of coast guard forces of USSR within 33 years (1957–1990).

Keywords: naval shipbuilding, coast guard ship, acceptance trials, acceptance act.

SHIP POWER PLANTS

A.Yu. Mezhevitinov. Diagnostics of technical state of shipboard engines by their operational parameters.

Application of various mathematical methods for processing of parameters being measured allows to detect potential engine faults at early stage and to forecast and determine its current technical state. Creation of multidimensional parametric space associated with operability of the mechanism and further monitoring of mechanism exploitation must be based of expert system which considers all physical and chemical parameters. This will ensure long and fault-free operation of the engine.

Keywords: operational parameters, shipboard engines, technical state, diagnostics.

SHIPBUILDING ORGANIZATION AND TECHNOLOGY

A.V. Krasilnikov, A.V. Konovalov, T.V. Vasyliiev. A method to define the actual position of equipment mounting surface in relation to external mounting surfaces during installation in space-limited environment.

This article offers method to define actual position of equipment mounting surface in relation to external mounting surfaces during installation in space-limited environment such as vessel compartment.

Keywords: dimensions, assembly, installation technology, mounting surfaces, local control network.

M.N. Zelenin, R.P. Zhivotovsky, V.V. Badogin. V.P. Kulikov. Development of production and installation procedure for foundations of special-purpose equipment of large surface ships

This article reviews fabrication and installation of foundations onboard the ship. Main stages of welding and assembly works have been highlighted. Expected welding deformations have been estimated for each stage using finite elements method. Calculation results were used as basis for development of production procedures aimed to decrease and to compensation foundation deformations after welding comprising the fabrication stage. This article aims to develop procedure of welding and assembly works to ensure retention of foundations shape and mutual position within preset tolerance limits.

Keywords: assembly, welding, installation, foundations, special systems, welding deformations.

E.E. Lyakhovsky. Flexible planning system for shipboard wiring works.

The author hereby generalizes practical experience of JSC «JPA Arktika» in application of flexible management for wiring works planning. Requirements to control system of ship project have been highlighted. This article describes approach to execution of works based on three-month planning gap and offers business-like procedure of planning by engineering and economic teams of electrical engineering company. This article also describes sequential decomposition procedure of inventory items comprising the production planning. The author offers to use the implementation experience of flexible control and planning methods at shipbuilding yards.

Keywords: wiring facilities, wiring works, flexible control methods, planning.

V.S. Kotov. Additive technologies in world shipbuilding industry: application experience

This article analyzes experience of additive technologies application in world shipbuilding industry. The author defines application features of 3D-printing procedure in production of: propulsive system components, hull structures, casting moulds, dummies and special tools. Separate category for application of additive technologies in shipbuilding and shiprepair industry has been substantively described. The author also reviews experience of practical application of new technologies in scope of repair and production which is equal and sometimes above conventional production methods of various parts in shipbuilding and engine building industry.

Keywords: shipbuilding, shiprepair, additive technologies, 3D-printing

SHIPBOARD EQUIPMENT

E.G. Berestovitsky, Yu.A. Gladilin, A.M. Yaschenko. Noises and vibrations of case and console electronic equipment onboard the ship.

Reduction of noise and vibration emitted by shipboard equipment is one of major design and production issues. At presence, functional performance of control systems keeps increasing together with heat emission of the equipment, thus requiring more efficient and therefore noisy forced cooling. One of solutions is development of technical designs simultaneously ensuring efficient protection against mechanical impacts, low noise and optimal thermal balance inside the device.

Keywords: shipboard case equipment, console electronic equipment, noise, vibration, forced cooling, thermal balance.

A.S. Petrov. New solutions of «Razvitie» consortium for shipbuilding industry.

This article describes new capabilities of the only domestic math kernel library applicable for building up the complex-shaped surfaces. The author narrates about utilization of special tools and modeling commands rendered in frames of pilot projects at shipbuilding enterprises. Plans for development of software made by «Razvitie» consortium have been highlighted.

Keywords: ASCON, shipbuilding, 3D-modeling, multi-physical calculations, «Razvitie» consortium.

SHIPREPAIR AND DISPOSAL

G.V. Fofanov, S.V. Popov, S.A. Ivanov, V.V. Potriakhaev. Determination of scope of works during shiprepair, making up the list of repair works and labor norming in frame of shipbuilding industry digitization.

The author narrates about development of investment project for establishment of automated process design of shiprepair facilities using digital ship model which includes software-controlled design documents and process procedures of the shipyard.

Keywords: process design, digital ship model, shiprepair.

ECONOMY AND FINANCE

V.N. Kravchishin. Production environment. Seeking for issues and solutions, visible events and covert mechanisms.

This article analyzes modern state and rate setting in shipbuilding industry.

Keywords: rate setting, shipbuilding industry, labor consumption standards, production management

SHIPYARD RETOOLING

S.V. Antonenko. Dock cribbing supports: design regulations and calculations

The author hereby offers recommendations on advancement of branch regulatory document for design and calculations based on his own field studies and theoretical searches.

Keywords: branch regulatory documents, dock cribbing, keel-track cribbing, side cages, strength calculations

INFORMATION SECTION

«CRI SEET» – above 50 years of advanced production of shipboard electric equipmen. N. A. Lazarevsky – 75 years in shipbuilding industry! V. N. Ilyukhin Development of emergency-rescue vessels of the Russian Navy. Foreign information. Conference «Production technologies in shipbuilding – questions of informatization» (PTS VI–2021). Congratulations

HISTRY OF SHIPBUILDING AND FLEET

N. N. Afonin. Knock-down torpedo boats «Mechanical engineer Anastasov» and «Lieutenant Maleyev».

This article narrates about construction of knock-down torpedo boats «Mechanical engineer Anastasov» and «Lieutenant Maleyev» in Saint Petersburg during Russo-Japanese war in 1904–1905. These were the last two vessels of «Sokol» series of torpedo boats which was the largest in the Russian fleet (23 ships).

Keywords: history of shipbuilding, naval shipbuilding, «Sokol» class torpedo boats, acceptance trials, acceptance act.

M. I. Pridannikov. Built in Finland: guard boats of the Russian Navy.

This article describes guard boats ordered and built in Finland for the Russian Navy during the First World War in 1914—1918.

Keywords: history of shipbuilding, naval shipbuilding, guard boats, acceptance trials.