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## ПРОЕКТИРОВАНИЕ СУДОВ

## ВОЕННОЕ КОРАБЛЕСТРОЕНИЕ

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# /SHIPBUILDING/

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**AT SHIPBUILDING YARDS**

***Aleksandrov M. V.*** **History of cooperation between JSC SSTC and JSC SC «Zvezdochka»**

**SHIP DESIGN**

***A. G. Egorov*****. Choosing gap size between propeller shaft and ship hull.**
This article analyzes actual regulations of International Association of Classification Societies (IACS) regarding adjustment of gap size between propeller shaft and ship hull. The author reviews reference and professional sources and indicates manufacturer's recommendations. Conclusions regarding adjustment of gap size between propeller shaft and ship hull are made on basis of deep and comprehensive analysis.

*Keywords*: design, gap, propulsion system, support, vibration, safety.

***A. S. Bogdanov.*** **Development of deep-sea vehicles.**
This article describes results of system analysis of deep-sea vehicles development. The author tracks development of deep-sea vehicles for ocean exploration, reviews technical requirements towards their specifications and offers certain innovative design solutions.

*Keywords*: submersible vehicles, deep-sea vehicles, technical means for sea exploration.

**SHIPBUILDING ORGANIZATION AND TECHNOLOGY**

***V. V. Krylov, S. S. Novikov, G.A. Tumashik.*** **Extending life of titanium hulls of submersible vehicles: issues and prospects.**

This article summarizes experience on life extension of titanium hulls and structures of submersible vehicles.

*Keywords*: hull, hull structures, titanium alloy, submersible vehicle, life extension

***N. I. Gerasimov, I. V. Grachev, A. M. Lisitsky.*** **Technology of LAU transfer using flexible rolling elements.**
Advanced modules of power plants and shipboard equipment may have maximum 2000 ton weight and 12 m length.
Therefore, it is almost impossible to maintain stand assembly quality of such items during transportation. To solve that, one should enhance stress-strain properties of rolling elements in roller path in 1.5–2 times while maintaining general lifting capacity.
Survey of stress-strain properties of multilayer rollers allowed to define dimensions of rollers suitable for transfer of LAUs, while maintaining stand assembly quality.

*Keywords*: assembly unit, transportation, roller bearings, stress-strain properties

## SHIPBOARD EQUIPMENT

### *E. A. Bubnov, A. V. Tretyakov.* Enhancing compartment monitoring efficiency by duty officers.

This article describes measures required to enhance compartment monitoring efficiency by duty officers in order to prevent or manage emergency situation.

*Keywords*: submarine, safety, monitoring, compartments, duty officer, emergency situation.

### *A. A. Katanovich, A. V. Karpov.* Increasing radio-communication stability in northern latitudes.

The author analyzes advantages and disadvantages of meteor burst communication channel. The author suggests functional diagram ensuring increase of monitoring efficiency of meteor burst communication channel by estimating the envelope distribution of pi-amplitude of desired signal receipt probability.

*Keywords*: meteor burst communication channel, shipboard radio communication, communication equipment, radio wave range

## ECONOMICS AND FINANCE

### *I. V. Smirnov.* When intellectual property becomes an intangible assets.

Accounting of intellectual property, list of cases when accounting is required and measures to avoid mistakes during accounting procedure.

*Keywords*: market economy, intellectual property, intangible asset, accounting, assets.

### *F. R. Sagaidakov, E. K. Nikitina, V. M. Shifrina.* Financing features of United States Department of Defense.

This article is devoted to cost estimation of weapons and military equipment of US Navy at initial development stages to prognosticate their further production and exploitation expenses within the entire service life.

*Keywords*: weapons and military equipment, cost, prognostication, financing, lifetime.

### *M.F. Onatsevich, V.Ya. Platov.* Current state of labor norming in Russian shipbuilding industry

Within 20 years after 1990, there was almost no focusing on labor norming issues. Works related to management of labor norming, definition and calculation of labor intensity in shipbuilding industry were resumed upon establishment of RTC «Rumb» oriented to define price formation and labor intensity of shipbuilding and shiprepair works. This article reviews main tasks to be solved upon creation of normative base as exemplified by «Severnaya verf».

*Keywords*: labor norming, interplant cooperation, labor intensity, methodical documents, statistics, recording, standard process order.

## SHIP REPAIR AND DISPOSAL

### *P.L. Lyamin, V.V. Petukhov.* Issues related to disposal of nuclear-powered ships and vessels

This article reviews issues related to disposal of nuclear-powered ships, vessels and associated servicing crafts. At presence, reactor compartments taken out of the service are placed in long-term storages. However, certain storage facilities cannot provide exact data regarding volume of nuclear wastes, their activity and composition. Non-availability of such specs does not allow to estimate the compliance of storage conditions with the federal laws.

To monitor and to control nuclear wastes stored onboard disposed ships and vessels one should develop special methodology to estimate radiation activity and develop normative regulations for such objects.

*Keywords*: radioactive wastes, disposal, package, nuclear servicing ships, nuclear-powered ships, reactor compartments, radio-nuclide composition, long-term storage facilities.

## INFORMATION SECTION

***Pozdnyakov V. I. , Gutkin Yu. M., Korenko V. A., Nesterov V. E.*** **Activities of «Soyuzproyektverf» (JSC SSTC) during the Great Patriotic War (55).** ***Ilyukhin V. N.*** **Advanced shipboard rescue means (58).** ***B. A . Barbanel*** **Outcome of All-Russian contest «Engineer of 2018» conducted by Union of R&D public associations (59).** ***Polovinkin V. N.*** **The outstanding shipbuilder O. M. Paliy (61). foreign information (63). Unique «Severny Polus» (21). «Sudostroenie» magazine has been added to HAC and RSCI (31). JSC SSTC participated in 5th International Arctic Forum – «Arctic Region – the Territory of Dialogue» (31)**

## HISTORY OF SHIPBUILDING AND FLEET

### ***A. M. Glebov.*** Zebecks as part of Baltic fleet.

Based on war experience obtained in Archipelago expedition in 1769—1774 it was offered to replace packet-boats in Russian Navy with new type of vessel, i.e. zebecks. Freshly built zebecks and semi-zebecks participated in war against Sweden in 1789—1790.

*Keywords*: history of shipbuilding, history of fleet, Admiralty-board, Russian-Sweden war, row fleet, zebeck, schooner.

### ***O. V. Minyaeva*. History of construction of ice-breakers «Taimyr» and «Vaigach».**

The author narrates about construction of ice-breakers «Taimyr» and «Vaigach» in 1907–1909 and preparation of Hydrographic expedition to the Arctic ocean in 1910—1915.

*Keywords*: history of shipbuilding, ice-breaker, ice-cutter, Northern Sea Route

### ***V. E. Lukin.*** Experimental gun is firing!.

The author tracks history of design, construction and participation of B37, 406-mm gun mount in the Great Patriotic War.

*Keywords*: history of shipbuilding, battleship, experimental gun, defense of the Leningrad