

AD 670631

ICEBREAKER DESIGN AND CONSTRUCTION

FINAL REPORT

on

Library Search for Literature in the Field of
Icebreaker Design and Construction.

by

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to

Office of Engineering
Naval Engineering Division
U.S. Coast Guard Headquarters
Washington, D.C.

Contract No. Tcg-16,024-A

April 1968

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Introduction

The purpose of this Library Search was to collect, review and make documentation of Eastern European (including German) and Russian literature on the subject of icebreaker design and construction. Special reference was given to structural design, propulsion and to materials and processes used in construction, as well as to physical properties of ice, to icebreaking theory and methods and to problems related to the interaction between the icebreakers and ice. Other pertinent areas, including fracture, fatigue and corrosion resistance were also included.

The work was performed from September, 1966, until April, 1968. The sources of information collected were limited to unclassified serials and books available in American libraries. Generally, publications which appeared between the years 1956 and 1966 were included in the search.

This report describes the main features of the work, its extent, sources and results. It also includes technical information on the documentation and on copyright clearance.

Extent of Work

The main attention was concentrated on a group of selected periodicals, which was modified in course of the work. Many of the journals were available only in the Library of Congress, which thus

became the primary source of material. Among others, the John Hay Library of Brown University was particularly useful, while several other libraries, located in Washington, D.C., New York City, and Boston, have also provided a part of the serials searched.

The periodicals which were searched are listed in Appendix I. With a few exceptions, all issues of the listed journals, as they appeared between 1956 and 1966, were located. In some cases, even a part of the year 1967 was included.

Because of the special nature of the subject, only Russian and German literature was found useful. In fact, most references were taken from Russian journals. Where available, English translations were used instead of the original version.

Results and Documentation

The total number of articles and books which were included in the search amounts to 518. Those were divided into ten subject categories suggested by the U. S. Coast Guard. In each category, references were numbered in sequence. The resulting identification numbers consisted of five digits, as shown in Appendix II. The list gives also the Field and Group numbers according to the Cosati Subject Category List (DoD-Modified) of October, 1965.

The documentation of each article and book included in the search was done in the following manner:

- a) Three photostatic copies were made; two for the U. S.

Coast Guard and one to be included in a separate set submitted to the Defense Documentation Center, Cameron Station, Alexandria, Virginia. In some cases, a fourth copy was made for the contractor. Only title pages and lists of contents were copied in case of books and very long articles.

- b) Two separate forms were attached to each copy described in a). The first included bibliographical references and an annotated comment to each article, while the second listed pertinent key words. The key words were proposed by the contractor with regard to the nature of the work. They are listed in Appendix III.

The purpose of the annotated comments and key words was to enable an easy evaluation of the contents, level and nature of individual articles. Where pertinent, translation was either recommended or suggested as optional. When a translation was known to exist, its reference was given.

- c) Two sets of cards for Libsys Computer Program. Those cards included the identification numbers, bibliographical references, comments and key words for each article, as described in b).
- d) One printout of the Libsys Computer Program input. A copy of this printout was included with each shipment of Libsys card input. Another copy is attached in Appendix V.

- e) One set of copies of all articles, with their summaries and key words, was submitted to the Defense Documentation Center, Cameron Station, Alexandria, Virginia, 22314, to incorporate the results obtained in this work into DDC holding.

Copyright clearance was obtained for all material which was originally covered, i.e., for all German articles and for the English translations of Russian journals. Appendix IV on copyright includes copies of letters which were mailed to copyright owners and a copy of the Clause 9-203(d) Rights in Technical Data-Specific Acquisition (May 1964). This Clause was enclosed with each request for copyright clearance. Permissions were obtained from all copyright owners and the respective letters are also enclosed in Appendix IV.

Acknowledgement

The author wishes to acknowledge the financial support for this work by the U. S. Coast Guard under contract Tcg 16,024-A.

APPENDIX I

LIST OF SERIALS SEARCHED

A) Russian Scientific and Technical Journals

1. Atomnaya Energija (Russian Journal of Atomic Energy)
2. Avtomaticheskaja Svarka (Russian Journal of Automatic Welding)
3. Doklady Akademii Nauk SSSR (Transactions of the Academy of Sciences of USSR)
4. Fizika Metallov i Metallovedenie (Physics of Metals and Material Science)
5. Gidrotekhnicheskoe Stroitel'stvo (Hydrotechnical Engineering)
6. Izvestija Akademii Nauk SSSR - Mekhanika (Proceedings of the Academy of Sciences of USSR-Mechanics)
7. Izvestija Akademii Nauk SSSR - Energetika i Transport (Energetics and Transport)
8. Izvestija Akademii Nauk SSSR - Seriya Metally (Metals)
9. Izvestija Vysshikh Uchebnykh Zavedenij (Proceedings of State Universities), Mashinostroenie (Machine Building)
10. Izvestija Sibirskogo Otdelenija AN SSSR, Seriya Tekhnicheskikh Nauk (Proceedings of the Siberian Section of the Academy of Sciences USSR, Technical Sciences Series)
11. Inzhenernyj Zhurnal (Engineering Journal)
12. Mashinovedenie (Mechanical Engineering)
13. Metallovedenie i Termicheskaja Obrabotka Metallov (Material Science and Heat Treatment)
14. Morskoi Flot (Navy)
15. Morskoi Sbornik (Sea Volume)
16. Problemy Arktiki i Antarktiki (Problems of the Arctic and Antarctic)

17. Rechnoj Transport (River Transport)
18. Sudostroenie (Shipbuilding)
19. Svarochnoe Proizvodstvo (Welding Production)
20. Trudy CNII Morskogo Flota (Leningrad). (Transactions of the Central Scientific Research Institute of the Navy).
21. Trudy CNII Rechnogo Flota (Leningrad). (Transactions of the Central Scientific Research Institute of the River Fleet).
22. Trudy CNII Sudostroitel'noj Proymchlenosti (Leningrad). (Transactions of the Central Scientific Research Institute of Shipbuilding Industry).
23. Trudy Instituta Inzhenerov Vodnogo Transporta (Leningrad). (Transactions of the Institute of Engineers of Water Transportation).
24. Trudy Instituta Vodnogo Transporta (Transactions of the Institute of Water Transportation).
25. Trudy Korablestroitel'nogo Instituta (Leningrad). (Transactions of the Shipbuilding Institute).
26. Uchennye Zapiski Vyshego Arkticheskogo Morskogo Uchilishcha (Leningrad). (Scientific Memoirs of the Arctic and Naval College).
27. Vodnyj Transport - Referativnyj Zhurnal (Water Transport - Journal of Abstracts).
28. Zavodskaja Laboratorija -(Russian Journal Industrial Laboratory).

B) German Technical Journals

29. Jahrbuch der Schifffahrt.
30. Jahrbuch der Schiffbautechnischen Gesellschaft.
31. Schiff und Hafen
32. Schiffbautechnik

Appendix II

LIST OF REFERENCES AS DIVIDED --- INTO SUBJECT CATEGORIES

- 08 Earth Sciences and Oceanography
(Cosati 08 10 - Physical Oceanography)

References 08001 - 08007
- 24 Materials
(Cosati 11 06 - Metallurgy and Metallography
13 08 - Industrial Processes
13 10 - Marine Engineering
20 11 - Solid Mechanics)

References 24001 - 24148
- 30 Mathematical Sciences
(Cosati 17 - Navigation, Communications Detection and
Countermeasures
20 11 - Solid Mechanics)

References 30001 - 30003
- 37 Navigation, Communications Detection and Countermeasures
(Cosati 17 - Navigation, Communications Detections and
Countermeasures)

References 27001 - 37011
- 45 Mechanical Engineering
(Cosati 20 11 - Solid Mechanics)

Reference 45001

- 55 Naval Architecture (Design)
(Cosati 13 10 - Marine Engineering)

References 55001 - 55131

- 65 Ship Construction
(Cosati 13 10 - Marine Engineering)

References 65001 - 65043

- 75 Ship Propulsion Systems
(Cosati 13 10 - Marine Engineering)

References 75001 - 75078

- 80 Ice Characteristics
(Cosati 08 12 - Snow, Ice and Permafrost
17 - Navigation Communications Detection and
Countermeasures)

References 80001 - 80069

- 81 Paint and Coatings
(Cosati 11 03 - Coatings, Colorants and Finishes
13 08 - Cathodic Protection)

References 81001 - 81027

Appendix III

LIST OF KEY WORDS

Adhesives	Ice characteristics
Arctic research	Ice conditions
Cathodic protection (2)*	Ice conditions forecast
Cavitation	Ice-going ships (2)
Coatings	Icebreaker name (2)
Computers programming (2)	Icebreakers, History
Computers use	Icebreakers, Harbor (2)
Corrosion	Icebreakers, Motion (2)
Corrosion protection (2)	Icebreakers, Pitching equipment (2)
Corrosion resistance (2)	Icebreakers, Polar (2)
Deicing systems (2)	Icebreakers, Sea (2)
Experimental methods (2)	Icebreaking cargo ships (2)
Failure	Icebreaking methods (2)
Fracture testing (2)	Icebreaking theory (2)
Fatigue testing (2)	Icebreaking tugs (2)
Harbour tugs (2)	Law
Hull construction (2)	Materials, Brittleness (2)
Hull design (2)	Materials, Gluing (2)
Hull sheath (2)	Mathematical methods (2)
	Materials selection (2)

*(2) indicates that both forms of a composed key word were simultaneously used, e.g., cathodic protection and protection, cathodic.

Material specifications (2)	Propulsion, Diesel-electric (2)
Materials, Shipbuilding (2)	- Propulsion, Nuclear (2)
Materials testing	Propulsion, Steam (2)
Measurement equipment (2)	Register, Country (2)
Measurement methods (2)	Residual stresses
Mechanical properties	Resistance (Fluid Dynamics)
Metals gluing (2)	Resistance, Ice (2)
Metals joining (2)	
Metals welding (2)	Note: Use proper term for "Ships" from Thesaurus
Name Class	
Numerical methods (2)	Ship name (2)
Paints	Ships, Assembly (2)
Photoelasticity	Ships, Boats (2)
Photoplasticity	Ships, Communication systems (2)
Plastics	Ships, Classification (2)
Plastics, Welding (2)	Ships, Construction (2)
Power plants, Automation (2)	Ships, Collision (2)
Power plants, Cooling systems (2)	Ships, Country (e.g. Ice-breakers, Russian. Russian Icebreakers) (2)
Power plants, Nuclear (2)	Ships, Damage (2)
Power plants, Performance tests (2)	Ships, Design (2)
Power plants, Selection (2)	Ships, Engines (2)
Propellers	Ships, Fenders (2)
Propellers, Blades (2)	Ships, Fire protection (2)
Propellers, Damage (2)	Ships, History (2)
Propellers, Shafts (2)	

Ships, Loading (2)	Snow characteristics
Ships, Models (2)	Statistical analysis
Ships, Modernization (2)	Steels, Carbon (2)
Ships, Motion	Steel, Economy (2)
Ships, Navigation (2)	Steels, Heat treated (2)
Ships, Navigation systems (2)	Steels, High strength (2)
Ships, Operation (2)	Steels, Low alloy (2)
Ships, Performance tests (2)	Steels, Alloy
Ships, Power equipment (2)	Steels, Low strength (2)
Ships, Power plants (2)	Steels, Medium strength (2)
Ships, Propellers (2)	Steels, Shipbuilding (2)
Ships, Propulsion systems (2)	Structures
Ships, Radiation control (2)	Systems, Command
Ships, Repair (2)	Systems, Communication
Ships, Rudders (2)	Systems, Control
Ships, Safety equipment (2)	Testing methods (2)
Ships, Specifications (2)	Weldability testing (2)
Ships, Stability	Welding automatic
Ships, Structural components (2)	Welding equipment
Ships, Systems (2)	Welding manual
Ships, Testing (2)	Welding techniques
Shipyards, Name (2)	
Size effects	

The key words included in this list were selected, in part, from the Bureau of Ships Thesaurus of Descriptive Terms and Code Book, 2nd edition, March 1965.

Appendix IV

COPYRIGHT

This Appendix contains documents pertinent to copyright clearance of all material which was originally covered by copyright and was included in this work.

The permission to make photostatic copies of material covered by copyright was requested by a letter, the copy of which is shown on the next page, and which was sent to the following organizations:

- 1) The Instrument Society of America
313 Sixth Avenue
Pittsburgh 22, Pennsylvania
"Russian Journal Industrial Laboratory"
- 2) The British Welding Research Association
Abington Hall
Cambridge, England
"Russian Journal Automatic Welding"
- 3) Die Schiffbautechnische Gesellschaft e. V.
Neuer Wall 86
Hambrug 36, Germany
"Schiff und Hafen"
"Jahrbuch der Schiffbautechnischen Gesellschaft"
- 4) VEB Verlag Technik
Organienburger Strasse 13/14
Berlin C2
German Democratic Republic
"Schiffbautechnik"
- 5) VEB Verlag fur Verkehrswesen
Französische Strasse 13/14
Berlin W8
German Democratic Republic
"Jahrbuch der Schifffahrt"

80 Rochambeau Avenue
Providence, Rhode Island 02906
August 3, 1967

The Instrument Society of America
313 Sixth Avenue
Pittsburgh 22, Pennsylvania

Dear Sirs:

I would like to ask you for permission to make photostatic copies from your translation of the Russian Journal Industrial Laboratory. The request is being made in connection with a literature survey which I am making for the U. S. Coast Guard on some aspects of icebreaker construction and design.

The exact extent of the permission requested hereby is described in the enclosed clause of my contract with the U. S. Government (9-203(d) Rights in Technical Data-Specific Acquisition, May 1964). The permission should cover all volumes of the said journal published after January 1, 1956. In each case, proper reference to the title and issue of the journal will be made.

I am presently associated with the Division of Engineering at Brown University, Providence, Rhode Island 02912. My new address, as of September 1, 1967, will be:

Professor J. Dvorak
Department of Civil Engineering
Duke University
Durham, North Carolina 27706

I am looking forward to your answer.

Yours very sincerely,

J. Dvorak

JD/mlw
Enclosure

CLAUSE

9-203(d) RIGHTS IN TECHNICAL DATA-SPECIFIC ACQUISITION (MAY 1964)

(a) Definition. Technical Data as used in this clause means technical writings, sound recordings, pictorial reproductions, drawings, or other graphic representations and works of a technical nature, whether or not copyrighted, which are specified to be delivered pursuant to this contract. The term does not include financial reports, cost analyses, and other information incidental to contract administration.

(b) Government Rights. The Government may duplicate, use and disclose in any manner and for any purpose whatsoever, and have others so do, all or any part of the technical data delivered by the Contractor to the Government under this contract.

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(1) The Contractor agrees to and does hereby grant to the Government, and to its officers, agents, and employees acting within the scope of their official duties, a royalty-free, nonexclusive and irrevocable license throughout the world for Government purposes to publish, translate, reproduce, deliver, perform, dispose of, and to authorize others so to do, all technical data now or hereafter covered by copyright.

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(e) Limitation on Charges for Data. The Contractor recognizes that the Government, or a foreign government with funds derived through the Military Assistance Program or otherwise through the United States Government, may contract for property or services with respect to which the vendor may be liable to the Contractor for charges for the use of technical data on account of such a contract. The Contractor further recognizes that it is the policy of the Government not to pay in connection with its contracts, or to allow to be paid in connection with contracts made with funds derived through the Military Assistance Program or otherwise through the United States Government, charges for data which the Government has a right to use and disclose to others, which is in the public domain, which the Government has been given without restrictions upon its use and disclosure to others. This policy does not apply to reasonable reproduction, handling, mailing, and similar administrative costs incident to the furnishing of such data. In recognition of this policy, the Contractor agrees to participate in and make appropriate arrangements for the exclusion of such charges from such contracts, or for the refund of amounts received by the Contractor with respect to any such charges not so excluded.

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November 1, 1967

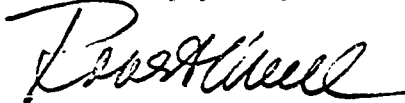
Professor J. Dvorak
Department of Civil Engineering
Duke University
Durham, North Carolina 27706

Dear Professor Dvorak:

Please forgive the long delay in responding to your letter of August 3rd to The Instrument Society of America concerning your request to make photostatic copies from our translation of the Russian Journal Industrial Laboratory. In recent months the copyright of this journal has been transferred from The Instrument Society to us.

We would be delighted to give you permission to reproduce certain items from our journal, however, before we do so it is necessary for us to have a list of those pages you wish to copy. We look forward to hearing from you.

Sincerely yours,



Robert N. Ubell
Editor
PLENUM PRESS

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Duke University
SCHOOL OF ENGINEERING
DURHAM, NORTH CAROLINA 27706

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NOV 21 1967

November 17, 1967

Mr. Robert N. Ubell
Editor, PLENUM PRESS
Plenum Publishing Corporation
227 West 17th Street
New York, New York 10011

Dear Mr. Ubell:

Thank you very much for your letter of November 1 concerning the permission to make copies from the Russian Journal Industrial Laboratory.

As you have requested, I enclose herewith a list of pages which I would like to copy, Volumes and numbers refer to both the original and translation and pages only to the latter.

I look forward to receiving the permission.

Yours sincerely,

J. Dvorak

JD/lp

Enclosure

Permission Granted
December 29, 1967.

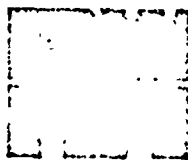
PLENUM PUBLISHING CORPORATION

Alan R. Liss
ALAN R. LISS
VICE PRESIDENT.

Industrial Laboratory
(Zavodskaja Laboratorija)

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BRITISH WELDING RESEARCH ASSOCIATION

ABINGTON HALL CAMBRIDGE Telephone LINTON 591 Telegrams WELOASERCH CAMBRIDGE Telex 81183

14th August, 1967

ARE/JS/756

Prof. J. Dvorak,
Department of Civil Engineering,
Duke University,
Durham,
North Carolina 27706,
USA.

Dear Sir,

Thank you for your letter of 3 August requesting permission to make photostatic copies from our translation of the Russian journal 'Automatic Welding'.

As you may know this work is carried out under a special grant from the British Government, and the translation is therefore Crown copyright.

However, we are prepared to grant permission for you to take copies from the issues you mention (from 1 January, 1956) subject to the usual acknowledgement, i.e.:

"This copy is made from the Russian journal 'Automatic Welding' translated by the British Welding Research Association for the Department of Education and Science."

Yours faithfully,

A. R. France
Public Relations Officer

Director R. WECK PhD. CENG. MACE. MIMechE.

Deputy Director Scientific P. T. HOULDCROFT B.Sc. FIM.

Deputy Director Administration A. O'NEILL B.Sc. (ECON.) F.C.I.S.

Deputy Director Education R. P. NEWMAN CENG. A.M.I.MechE.

Schiffbautechnische Gesellschaft e. V.
Hamburg 36, Neuer Wall 84,

Hamburg, August 11, 1967
v.S./L

Professor J. Dvorak, Esq.
c/o Division Of Engineering
Brown University

80 Rochambeau Avenue
Providence
Rhode Island 02906

U. S. A.

Dear Sir:

We thank you for your letter, dated August 3, 1967 and give you permission to make photostatic copies from our journals "Schiff und Hafen" and "Jahrbuch der Schiffbautechnischen Gesellschaft", published after January 1, 1956, regarding icebreaker construction and design.

We kindly ask you to make proper reference to the title and issue of the journal or yearbook in each case.

Yours very sincerely

SCHIFFBAUTECHNISCHE GESELLSCHAFT e. V.

H. F. Seebach

(v. Seebach)

Director and Secretary

Schiffbautechnik



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FÜR ALLE GEBIETE DES SCHIFF- UND SCHIFFSMASCHINENBAUES

DDR-102

BERLIN 100 ORANIENBURGER STR. 12/14

Herrn
Prof. J. Dvorak
Department of Civil Engineering
Duke University

Durham, North Carolina 27706
USA

Wir bitten,
auf Antwort schreiben das
Diktatzeichen anzugeben

Ihre Zeichen

Ihre Nachricht vom

3.8.1967

Unsere Nachricht vom

Unser Zeichen

224/ ZSb/Lie/Sbk

Tag

13.9.1967

Betreff

Sehr geehrter Herr Professor !

Bezug nehmend auf Ihr Schreiben vom 3.8.1967 erteilen wir
Ihnen die Genehmigung, Fotokopien aus unserer Zeitschrift
"Schiffbautechnik" für den von Ihnen genannten Zweck anfer-
tigen zu lassen.

Diese Genehmigung gilt für sämtliche Jahrgänge ab 1956.

Wir möchten Sie noch einmal darauf aufmerksam machen, daß
in jedem Fall korrekte Quellenangaben zu machen sind.

Hochachtungsvoll

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Wolfram
Stellv. Hauptredakteur

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Beantwortung
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Department of Civil Engineering
Duke University

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TELEFON: 22 02 31

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Durham, North Carolina 27706

U S A

Fotokopien aus "Jahrbuch der Schifffahrt"

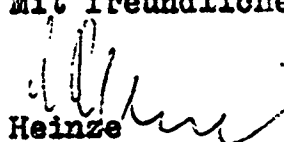
Sehr geehrter Herr Professor Dvorak!

Wir erlauben Ihnen hiermit, die von Ihnen gewünschten Fotokopien von Typendarstellungen beziehungsweise Bildveröffentlichungen aus beliebigen Jahrgängen unseres "Jahrbuch der Schifffahrt" vorzunehmen.

Wie Sie schon in Ihrem Schreiben vom 3. August 1967 angeben, bitten wir in diesem Zusammenhang um Angabe der Quelle, wenn eine Veröffentlichung vorgesehen werden soll.

Wir wären Ihnen dankbar, wenn Sie uns im Falle der Veröffentlichung ein Belegexemplar schicken könnten.

Mit freundlichen Grüßen


Heinze
stellv. Chefflektor

80001
BRONFMAN, A. I.

80001
80001

010
101

USE OF COMPRESSED AIR FOR CLEANING OF SHIP ROUTES FROM ICE.=

RECHNOJ TRANSPORT, 16, DEC 1957, PP. 40-41

THIS IS A SHORT DESCRIPTION OF THE TITLE SUBJECT. IT IS BASED ON PRACTICAL EXPERIENCE GAINED IN SWEDEN AND ELSEWHERE. THE COMPRESSED AIR

DEVICE IS A PERFORATED TUBE LAYING ON THE BOTTOM AND CONNECTED TO AN AIR COMPRESSOR. WHEN AIR IS LED INTO THE TUBE, IT ESCAPES AND THE BUBBLES CARRY WITH THEM PARTICLES OF WARM WATER WHICH DISSOLVES THE ICE. HOWEVER, THIS DEVICE MAY BE SUCCESSFULLY USED ONLY IN CASES THAT WATER DOES NOT MOVE MUCH SO THAT THERE ARE WARMER LAYERS AT THE BOTTOM. THE BEST USE IS POSSIBLE ON SOME LAKES IN SWEDEN. THERE, ICE UP TO 25 IN. WAS DISSOLVED AFTER ABOUT TWO WEEKS OF WORK OF THE EQUIPMENT. A CHANNEL 17-19 YARDS WIDE WAS FORMED. IT IS PROPOSED THAT FOR A 62 MILE LONG CHANNEL, 20 YARDS WIDE, 10 000 CUBIC YARDS PER HOUR OF AIR. TUBE DIAMETER 1.5 IN., PERFORMATIONS EVERY 15 YARDS. POSSIBLE USE IN THE SOVIET UNION IS DISCUSSED. TRANSLATION OPTIONAL.

ICEBREAKING METHODS
METHODS, ICEBREAKING
80002

CHIKOVSKIJ, S.

A BOOK ON ICE PHYSICS AND ENGINEERING.=

MORSKOJ FLOT, 24, OCT 1964, 1 P.

THIS IS A REVIEW OF A BOOK BY I. S. PESCHANSKIJ, LEDOVENIE I SLEDOTECHNIKA WHICH WAS PUBLISHED IN 1963 STATE PUBLISHING HOUSE, MORSKOJ TRANSPORT, ONLY IN 1000 COPIES. NEVERTHELESS, THE BOOK IS OF HIGH QUALITY AND COVERS RESULTS OF EXTENSIVE SOVIET RESEARCH ON PHYSICAL PROPERTIES AND ENGINEERING ASPECTS OF ICE. THE BOOK AMOUNTS TO 34K PAGES AND AT LEAST SOME PARTS WERE TRANSLATED BY DIRECTORATE OF PHYSICAL RESEARCH, DEFENCE RESEARCH BOARD CANADA (D PHYS. R (G) REPORT NO. MISC G-18, OCTOBER 1964). (APPEARS AS A SEPARATE REFERENCE). THIS REVIEW DISCUSSES THE WHOLE CONTENTS OF THE BOOK AT SOME LENGTH. TRANSLATION RECOMMENDED.

ICE CHARACTERISTICS
ICEBREAKING, THEORY
THEORY, ICEBREAKING
ICEBREAKING METHODS
METHODS, ICEBREAKING
80003

PESCHANSKIJ, I. S.

ICE-CUTTING SHIPS AND HIGH-PRESSURE WATER JETS FOR CUTTING ICE.=

DIRECTORATE OF PHYSICAL RESEARCH, CANADA, REPT. D PHYS R(G), NO. MISC. G-18, OTTAWA, OCT 1964, 5 PP.

THIS IS A SHORT TRANSLATED EXTRACT FROM A BOOK BY THE TITLE AUTHOR ICE PHYSICS AND ENGINEERING, LENINGRAD 1963. FOR A MORE GENERAL REVIEW OF THIS BOOK, SEE REF. 80002.
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ELIN, I.A.

KOLENKINA, T.A.

EPOXY COATINGS FOR CORROSION PROTECTION OF SHIP STRUCTURAL PARTS.

SUDOSTROENIE, 27, MAY 1961, PP. 41-45

VARIOUS EPOXY COATINGS, THEIR MECHANICAL PROPERTIES, ADHESION CHARACTERISTICS AND OTHER TECHNOLOGICAL DETAILS ARE DESCRIBED. SOME TEST METHODS OF THESE PROPERTIES ARE MENTIONED. SPECIAL ATTENTION IS GIVEN TO TECHNOLOGY OF APPLICATION AND TO EXPERIENCE OBTAINED DURING USE OF COLD CURED MULTI-LAYERED REINFORCED COATINGS ON SOME SHIP PARTS LIKE SHAFTS, PIPING, PUMPS, PROPELLER BLADES AND SHAFTS, ETC. SOME REFERENCE TO AMERICAN TECHNIQUES IS GIVEN. TRANSLATION OPTIONAL.

CORROSION PROTECTION
PROTECTION, CORROSION
COATINGS

81002

MELNIK, M.I.

SHILNIK, M.N.

A NEW PROTECTIVE COATING FOR METAL SURFACES.

SUDOSTROENIE, 25, JUN 1959, PP. 30-32

THE PROTECTIVE COATING DESCRIBED IS BASED ON A PERCHLORVINYL RESIN WHICH IS A PVC RESIN ENRICHED BY 64-65 PER CENT OF CHLORINE. IT IS STABLE FROM -45 DEGREE C TO +170 DEGREE C (I.E. -49 TO +338 DEGREE F), EASY TO APPLY, HAS EXCELLENT PROTECTIVE PROPERTIES, REASONABLE STRENGTH AND OTHER PROPERTIES SUITABLE FOR ITS USE FOR CORROSION PROTECTION OF WELDED SHIP HULLS. THE TECHNOLOGY OF APPLICATION AND OTHER IMPORTANT DATA ARE DESCRIBED IN DETAIL. TRANSLATION OPTIONAL.

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HERSHTEJN, V.A.

ELIN, I.A.

KOLENKINA, T.A.

EPOXY COATINGS FOR CORROSION PROTECTION OF SHIPS STRUCTURAL PARTS.=

SUDOSTROENIE, 27, MAY 1961, PP. 41-45

VARIOUS EPOXY COATINGS, THEIR MECHANICAL PROPERTIES, ADHESION CHARACTERISTICS AND OTHER TECHNOLOGICAL DETAILS ARE DESCRIBED. SOME TEST METHODS OF THESE PROPERTIES ARE MENTIONED. SPECIAL ATTENTION IS GIVEN TO TECHNOLOGY OF APPLICATION AND TO EXPERIENCE OBTAINED DURING USE OF COLD CURED MULTI-LAYERED REINFORCED COATINGS ON SOME SHIP PARTS LIKE SHAFTS, PIPING, PUMPS, PROPELLER BLADES AND SHAFTS, ETC. SOME REFERENCE TO AMERICAN TECHNIQUES IS GIVEN. TRANSLATION OPTIONAL.

CORROSION PROTECTION
PROTECTION, CORROSION
COATINGS

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MEILNIK, M.I.

SHILNIK, M.N.

A NEW PROTECTIVE COATING FOR METAL SURFACES.

=
SUDOSTROENIE, 25, JUN 1959, PP. 30-32

THE PROTECTIVE COATING DESCRIBED IS BASED ON A PERCHLORVINYL RESIN WHICH IS A PVC RESIN ENRICHED BY 64-65 PER CENT OF CHLORINE. IT IS STABLE FROM -45 DEGREE C TO +170 DEGREE C (I.E. -49 TO +338 DEGREE F), EASY TO APPLY, HAS EXCELLENT PROTECTIVE PROPERTIES, REASONABLE STRENGTH AND OTHER PROPERTIES SUITABLE FOR ITS USE FOR CORROSION PROTECTION OF WELDED SHIP HULLS. THE TECHNOLOGY OF APPLICATION AND OTHER IMPORTANT DATA ARE DESCRIBED IN DETAIL. TRANSLATION OPTIONAL.

CORROSION PROTECTION
PROTECTION, CORROSION
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OF SEA SHIP HULLS FROM CORROSION AND FOULING.=	81006	202
TRUDY C.N.I.I. MORSKOGO FLOTA, 25, 1959, P. 31	81006	251
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TRUDY C.N.I.I. MORSKOGO FLOTA, 25, 1959, P. 87	81007	251
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THIS IS A SHORT DESCRIPTION OF THE TITLE SPECI FICATIONS. IT CONTAINS THE MAIN RECOMMENDED T YPES OF PAINTS FOR VARIOUS PURPOSES AND THE TE CHNOLOGY OF APPLICATION. PAINTS FOR BOTH UNDER WATER AND UPPER PARTS ARE GIVEN.	81008	251
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SCHIFF UND HAFEN, FEB 1961, P. 157-162	81008	703
THIS IS A SUMMARY OF A LECTURE ON VARIOUS PRAC TICAL ASPECTS OF CATHODIC PROTECTION. IN PART ICULAR, SPECIAL ARRANGEMENTS ARE DISCUSSED. A DISCUSSION TO THE LECTURE IS ATTACHED.	81009	704
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SCHIFFPAUTECHNIK, 9, AUG 1959, P. 410-416	81009	503
THIS IS RATHER A GENERAL ARTICLE ON VARIOUS AS PECTS OF CORROSION IN AN ELECTROLYTE, E.G., SE AWATER. METHODS OF CORROSION PROTECTION, INCL UDING CATHODIC PROTECTION ARE OUTLINED.	81009	504
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SCHIFF UND HAFEN, JAN 1962, P. 66-76	81011	203
THIS IS AN EXTENSIVE AND DETAILED DISCUSSION O N INTERACTION OF ANTICORROSIIVE AND ANTIFOULING PAINTS FOR PROTECTION OF SHIP HULLS. IT IS S HOWN THAT THE POISON PAINTS CAN CAUSE CORROSI N IF THE BASIC ANTICORROSIIVE COATING IS WEAK.	81011	251
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THEREFORE THE CONCLUSION IS REACHED THAT BOTH COMPONENTS MUST BE SUFFICIENTLY STRONG FOR AC

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ACHIEVEMENT OF GOOD RESULTS.

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INDUSTRIAL LABORATORY, 26, FEB 1960, P. 243-24

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THIS IS A SHORT DESCRIPTION OF A TESTING DEVICE FOR DETERMINATION OF ELASTICITY OF GALVANIZED OR LACQUERED COATINGS OF FLAT SAMPLES IN BEN

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INDUSTRIAL LABORATORY, 29, SEP 1963, P. 1239-1240

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THIS IS A SHORT DESCRIPTION OF THE TITLE DEVICE WHICH CAN BE USED FOR FAIRLY EXACT MEASUREMENTS OF WEAR OF VARIOUS DEPOSITED LAYERS, UNDER RECIPROCATING MOTION.

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SCHIFF UND HAFIN, 10, JAN 1958, P. 29-39

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THIS IS A DETAILED AND EXTENSIVE ARTICLE ON SEVERAL FACTORS WHICH CONTRIBUTE TO CORROSION OF SHIP HULLS. THREE MAIN TOPICS ARE DISCUSSED:

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THE CONTRIBUTION OF SURFACE CONDITIONS, NAMELY OF THE AS-ROLLED SURFACE AND OF THE SURFACE

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HETEROGENEITY OF SHEET STEEL SURFACES. THE INFLUENCE OF OUTSIDE CURRENTS WHICH MAY BE PROD

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UCED WHEN THE SHIP BECOMES AN ANODE AGAINST EARTH. FINALLY, THE INFLUENCE OF CURRENTS GENER

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ATED ON THE SHIP AND TRANSMITTED IN TO THE HULL THROUGH GROUNDING. RESULTS OF OBSERVATIONS

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ON SHIPS ARE REPORTED TO ILLUSTRATE THE THREE CASES. PREVENTION MEASURES ARE DISCUSSED.

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THIRD INTERNATIONAL CONGRESS ON METALLIC CORROSION. EXTENDED ABSTRACTS, MOSCOW, 16-25 MAY 1966,

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E CURRENT REQUIRED FOR COMPLETE CATHODIC PROTE	81016	504
CTION UNDER CONDITIONS OF CHANGING TEMPERATURE	81016	505
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THIRD INTERNATIONAL CONGRESS ON METALLIC CORROSION. EXTENDED ABSTRACTS, MOSCOW, 16-26 MAY 1966, P. 208-209.	81019	202
THIS IS AN ENGLISH ABSTRACT OF THE TITLE PAPER.	81019	251
IT IS SHOWN THAT WHEN OPTIMUM CATHODIC PROTECTION CONDITIONS ARE APPLIED, THE FATIGUE STRENGTH OF SOME STEELS IN SEA WATER MAY BE IMPROVED TO THE LEVEL WHICH IS OBSERVED IN AIR. THE MECHANISM OF THE PHENOMENON IS DISCUSSED.	81019	352
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THIRD INTERNATIONAL CONGRESS ON METALLIC CORROSION. EXTENDED ABSTRACTS, MOSCOW, 16-26 MAY 1966, P. 201-203.	81019	703
THIS IS AN ENGLISH ABSTRACT OF THE TITLE PAPER.	81019	704
RESEARCH WAS PERFORMED IN THE DEVELOPMENT OF ELECTROCHEMICAL PROTECTION AGAINST CORROSION IN SEA WATER (EVEN AT HIGH VELOCITIES OF FLOW)) BY MEANS OF GENERATION A SURFACE PROTECTIVE FILM.	81019	705
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THIS IS AN ENGLISH ABSTRACT OF THE RUSSIAN PAPER.	81022	352
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CORROSION AND FOULING PREVENTION RESEARCH.	81023	705
SCHIFF UND HAFEN, APR. 1957, P. 314-320	81023	706
THIS IS A REPORT ON A MEETING OF THE CORROSION	81023	707
AND FOULING RESEARCH COMMITTEE OF THE GERMAN	81023	708
SHIPBUILDING SOCIETY, WHICH TOOK PLACE IN NOVEMBER, 1956. IT CONTAINS ALSO TWO LECTURES. ONE, ON DAMAGE BY ELECTROLYSIS OF SHIP BOTTOMS	81023	709
DURING ELECTRIC WELDING AND ANOTHER ONE, ON PREVENTION OF CORROSION OF SHIP BOTTOMS, ON MEASURES TO ARREST THE CORROSION PROCESS AND TO REPAIR THE DAMAGE.	81023	710
CORROSION	81023	711
CORROSION PROTECTION	81023	712
PROTECTION, CORROSION	81023	713
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SCHIFFBAUTECHNISCHE GESELLSCHAFT	81024	715
CORROSION AND FOULING PREVENTION RESEARCH.	81024	716
SCHIFF UND HAFEN, FEB 1960, P. 182-185	81024	717
THIS IS A REPORT ON A MEETING OF THE CORROSION	81024	718
AND FOULING RESEARCH COMMITTEE OF THE GERMAN	81024	719
SHIPBUILDING SOCIETY, WHICH TOOK PLACE IN NOVEMBER 1959. IT ALSO CONTAINS A LECTURE BY H. K	81024	720
UHL ON "POSSIBILITIES AND LIMITATIONS OF FOULING PROTECTION BY PAINTS." ATTENTION IS GIVEN	81024	721
TO DET POISONED PAINTS AS A MEANS OF FOULING PREVENTION.	81024	722
CORROSION	81024	723
CORROSION PROTECTION	81024	724
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BAUTER, H.	81025	727
ENGELL, E. J.	81025	728
INVESTIGATION ON CORROSION PROTECTION BY MEANS OF ZINC PLATES ON STERN OF SEA SHIPS.	81025	729
SCHIFF UND HAFEN, FEB 1960, P. 185-189	81025	730
THIS IS ANOTHER LECTURE WHICH WAS DELIVERED AT A MEETING DESCRIBED IN 81024. MEASUREMENTS WERE PERFORMED ON EFFICIENCY OF ZINC ANODES AS A PART OF CATHODIC PROTECTION OF AN OTHERWISE UNPROTECTED SHIP HULL DURING A LONGER NAVIGATION. THE RESULTS ARE DISCUSSED AND CONCLUSIONS ON DESIRABLE SELECTION OF PARAMETERS OF THE P	81025	731
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CORROSION PROTECTION	81025	701
PROTECTION, CORROSION	81025	702
CATHODIC PROTECTION	81025	703
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HASBACH, E.	81026	101
CORROSION OF SEA SHIP PROPELLERS MADE OF COP	81026	201
PER ALLOYS AND ITS PREVENTION BY CATHODIC PROT	81026	202
ECTION.=	81026	203
SCHIFF UND HAFEN, SEP 1957, P. 747-751	81026	251
THIS IS A SHORT DESCRIPTION OF EXPERIMENTS ON	81026	501
CORROSION RESISTANCE OF LARGE BRASS PROPELLERS	81026	502
UNDER THE INFLUENCE OF CATHODIC PROTECTION.	81026	503
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SS'D. ALSO, OTHER EXPERIMENTS ARE REPORTED, N	81026	505
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CORROSION PROTECTION	81026	701
PROTECTION, CORROSION	81026	702
CATHODIC PROTECTION	81026	703
PROTECTION, CATHODIC	81026	704
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PROPELLERS, DAMAGE	81026	706
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81027	81027	011
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CORROSION EFFECTS AND CATHODIC PROTECTION OF	81027	201
SHIP BOTTOM.=	81027	202
SCHIFF UND HAFEN, AUG 1957, P. 686-690	81027	251
THIS IS AN EXTENSIVE SUMMARY IN GERMAN OF A DU	81027	501
TCH ARTICLE. IT DESCRIBES A SYSTEM OF CATHODI	81027	502
C PROTECTION WHICH USES A ANODE ALUMINUM WIRE	81027	503
WHICH IS PULLED BEHIND THE SHIP. THE CURRENT	81027	504
WHICH IS FED INTO THE WIRE GENERATES A POTENTI	81027	505
AL FIELD BETWEEN THE WIRE-ANODE AND THE SHIP C	81027	506
ETHOD. DETAILS AND PARAMETERS OF THE METHOD	81027	507
ARE DISCUSSED.	81027	508
CORROSION PROTECTION	81027	701
PROTECTION, CORROSION	81027	702
CATHODIC PROTECTION	81027	703
PROTECTION, CATHODIC	81027	704

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SUPRUN, L. A.	81003	101
BARDINA, V. P.	81003	102
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MODEL INVESTIGATIONS OF ELECTRO-CHEMICAL PROTECTION OF SEA SHIP HULLS AGAINST CORROSION AND DETERMINATION OF THE INFLUENCE OF THE PROPELLER ON WORK REGIME OF THAT PROTECTION.=	81003	201
TRUDY C.N.I.I. MORSKOGO FLOTA, 57, 1964, P. 3-25	81003	202
THIS IS AN EXTENSIVE AND DETAILED ARTICLE WHICH DESCRIBES THE METHOD OF MODEL INVESTIGATIONS OF THE ELECTRO-CHEMICAL PROTECTION, THE NATURE OF POTENTIAL DISTRIBUTION ALONG THE HULL IN DIFFERENT VARIANTS OF CATHODIC PROTECTION. THE USEFULNESS OF APPLICATION OF THIS PROTECTION IN COMBINATION WITH PAINTS IS SHOWN. BOTH THEORETICAL AND EXPERIMENTAL STUDIES ARE USED AS A BASIS FOR EVALUATION OF THE PROPELLER INFLUENCE IN ANALYSIS OF THE ELECTRO-CHEMICAL INFLUENCE OF SEA SHIPS.	81003	203
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PROTECTION, CORROSION	81003	251
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CATHODIC PROTECTION	81003	501
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81004	81003	503
BARDINA, V. P.	81003	504
SUPRUN, L. A.	81003	505
INVESTIGATION OF COATINGS FOR USE AS PROTECTIVE SCREENS AROUND ANODES IN CATHODIC PROTECTION.=	81003	506
TRUDY C.N.I.I. MORSKOGO FLOTA, 57, 1964, P. 26-36	81003	507
THIS IS A DETAILED ARTICLE ON EXPERIMENTAL INVESTIGATION OF A NUMBER OF NON-METALLIC COATINGS IN STANDING AND IN MOVING SEA WATER, UNDER SIMULTANEOUS INFLUENCE OF ELECTRIC CURRENT OF VARIABLE VOLTAGE (12 TO 100 V.). IT IS CONCLUDED THAT EPOXY COATINGS ARE MOST SUITABLE FOR USE AS PROTECTIVE SCREENS AROUND ANODES IN CATHODIC PROTECTION.	81003	508
CATHODIC PROTECTION	81003	509
PROTECTION, CATHODIC	81003	510
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	81003	704
	81003	705
	81004	011
	81004	101
	81004	102
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	81004	202
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08001

FROLOV, V.

SCIENTIFIC INVESTIGATIONS IN THE ARCTIC.=

MORSKOJ FLOT, 17, DEC 1957, PP. 4-5

THIS IS A GENERAL ARTICLE WHICH DESCRIBES VARIOUS ASPECTS OF RESEARCH IN THE ARCTIC. FIRST, A BRIEF HISTORY SINCE 1920 IS GIVEN, AND USE OF STEAM ICEBREAKERS IN EARLY THIRTIES IS MENTIONED. MAIN ACTIVITIES DISCUSSED ARE OBSERVATION OF ICE SITUATION AND FORECASTS, WEATHER FORECASTS, GEOPHYSICAL AND HYDROLOGICAL RESEARCH, CLEARING OF SEA ROUTES BY STAINING OF ICE FROM AIRPLANES, ETC.

DURING THE LAST 25 YEARS, ABOUT 400 SCIENTIFIC EXPEDITIONS HAVE BEEN ACCOMPLISHED BY RUSSIAN INVESTIGATORS IN THE ARCTIC. MANY OF THOSE EMPLOYED ICEBREAKERS. A BRIEF ACCOUNT OF ORGANIZATION OF SUCH RESEARCH IS GIVEN. WORLD PRIORITY IN THE FIELD IS CLAIMED. TRANSLATION OPTIONAL.

ARTIC RESEARCH

ICEBREAKERS, HISTORY

HISTORY, ICEBREAKERS

08002

ANTONOV, V.

NATURAL CONDITIONS OF EROSION OF THE ICE COVERAGE IN SHORE ZONES OF ARCTIC SEAS.=

MORSKOJ FLOT, 19, JAN 1959, PP. 24-25

THIS IS A SHORT ACCOUNT ON THE TITLE SUBJECT AS RELATED TO SITUATION ALONG THE SIBERIAN COAST. DATA OBTAINED BY VARIOUS OBSERVATION STATIONS ARE BRIEFLY TABULATED. TRANSLATION OPTIONAL.

ARTIC RESEARCH

ICE CONDITIONS

08003

MAKSUTOV, D.D.

A HIGH-LATITUDE EXPEDITION ON THE NUCLEAR ICEBREAKER LENIN IN 1961.=

PROBLEMY ARKTIKI I ANARKTIKI, P. 107-109

THIS IS A SHORT ACCOUNT OF AN EXPEDITION ON THE LENIN ICEBREAKER. IT TOOK PLACE IN FALL OF 1961 IN ORDER TO ESTABLISH A NEW RESEARCH AND OBSERVATION SITE NORTH POLE 10. IN ADDITION, 15 AUTOMATIC RADIO METEOROLOGICAL STATIONS WERE ESTABLISHED. IT WAS ALSO VERIFIED THAT THE LENIN ICEBREAKER IS SUITABLE FOR NAVIGATION AT HIGH LATITUDES DURING THE PERIOD OF POLAR WINTER AND NIGHT.

ICEBREAKER LENIN

LENIN ICEBREAKER

ARCTIC RESEARCH

08004

LAKTIONOV, A.F.

ROMANOVICH, J.S.

AN ABBREVIATED LIST OF SOVIET REFERENCES ON ARCTIC RESEARCH BY MEANS OF HIGH-LATITUDE EXPEDITIONS AND RESEARCH STATIONS, 1937-1962.=

PROBLEMY ARKTIKI I ANTARKTIKI 11, 1962, P. 115

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THIS IS AN ALPHARETICAL LIST OF OVER 300 REFERENCES ON THE TITLE TOPIC.
ARCTIC RESEARCH

08005

TRESHNIKOV, A. F.

SCIENTIFIC INVESTIGATIONS IN THE ARCTIC AND ANTARCTIC IN 1965.=

PROBLEMY ARKT. I ANTARKT., 24, 1966, P. 5-10

THIS IS A SHORT REVIEW OF THE ACTIVITIES OF THE

SOVIET ARCTIC AND ANTARCTIC INSTITUTE. ONE

OF THOSE MENTIONED INCLUDES DEVELOPMENT OF A UNIFIED

METHOD FOR DETERMINATION OF ICE LOADS ON SHIPS.

OTHERS REFER TO INVESTIGATION OF ICE

PROPERTIES, FORECASTS OF ICE SITUATIONS AND THE LIKE.

NO REFERENCES ARE GIVEN.

ARCTIC RESEARCH

08006

KONVALOV, I. M.

AN APPROXIMATE THEORY OF ELEVATION OF DEEP WATER BY AIR BUBBLES.=

TRUDY LENINGRAD, INST. INZHENEROV VODNOGO TRANSPORTA, 18, 1951

THIS IS A THEORETICAL ARTICLE ON THE TITLE TOPIC.

THE AMOUNT OF WATER WHICH CAN BE ELEVATED BY AIR IS EVALUATED

IN RELATION TO BUBBLE SIZE AND DENSITY. THE RESULTS MAY BE USEFUL IN DEVELOPMENT

OF AIR DEICING SYSTEMS IN HARBORS.

ICEBREAKING THEORY

THEORY, ICEBREAKING

08007

LEDENEV, V. G.

COOLING OF COASTAL WATER FIELDS IN THE ANTARCTIC.=

PROBLEMY ARKT. I ANTARKT., 17, 1964, P. 46-53

THIS IS A DETAILED ARTICLE WHICH DESCRIBES THE

TEMPERATURE REGIME OF EXTENSIVE STRIPS OF FREE WATER WHICH ARE KNOWN TO EXIST, DURING MOST

OF THE YEAR, ALONG COASTS AS WELL AS ON THE WESTERN SHORES OF SHELF ICEBERGS.

ORIGIN OF THESE STRIPS IS DISCUSSED.

ARCTIC RESEARCH

ICE CONDITIONS

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08004	302
08004	701
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24001

KOMANDIN, N.L.

USE OF THE STEEL SKHL-1 IN SHIPBUILDING.=

RECHNOJ TRANSPORT, 16, DEC 1957, PP. 17-19

THIS IS A DETAILED DESCRIPTION OF THE MECHANICAL PROPERTIES AS FUNCTIONS OF SHEET THICKNESS AND OF WELDABILITY OF THE TITLE STEEL. IT WAS

PROBABLY THE FIRST LOW-ALLOY STEEL USED IN RUSSIAN SHIPBUILDING AND SINCE THEN TWO MORE SKHL STEELS HAVE APPEARED (NO. 4 AND 45 - SEE REF. 110). THE DISCUSSED STEEL CONTAINS 0.12-0.18 C, 0.4-0.7 SI, 0.6-0.9 CR, 0.3-0.6 NI AND 0.2-0.4 CU. ITS YIELD STRENGTH IS 50 KSI. MANY

TABLES OF MECHANICAL PROPERTIES ARE INCLUDED AS WELL AS RESULTS FROM WELD EXAMINATIONS. IT

IS CONCLUDED THAT ALTHOUGH NOT IDEAL, THE STEEL REPRESENTED CONSIDERABLE PROGRESS IN RUSSIAN SHIPBUILDING AND WAS SUCCESSFULLY USED FOR A

TANKER AND FOR A RIVER PASSENGER SHIP.

METALS, WELDING

WELDING, METALS

STEELS, LOW ALLOY

LOW ALLOY STEELS

STEELS, SHIPBUILDING

SHIPBUILDING STEELS

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24002

RUSSO, V.L.

INFLUENCE OF VIBRATIONS ON CRYSTALLIZATION OF THE WELD METAL.=

SUDOSTROENIE, 24, APR 1958, PP. 37-41

THIS IS A RATHER DETAILED DESCRIPTION OF AN EXPERIMENTAL INVESTIGATION ON THE TITLE TOPIC.

BOTH LOW AND HIGH FREQUENCY VIBRATIONS WERE USED. IT IS CONCLUDED THAT LOW FREQUENCY VIBRATIONS (30-50 HZ), WHEN APPLIED TO THE CRYSTALLIZING METAL, IMPROVE CONSIDERABLY NOTCH IMPACT PROPERTIES OF A LOW-ALLOY CR-NI-MO STEEL. THE EFFECT IS CONNECTED WITH REFINING INFLUENCE OF VIBRATIONS ON AUSTENITIC GRAIN SIZE.

HIGH FREQUENCY VIBRATIONS (20KHZ) SHOW FAVORABLE EFFECT ON CRYSTALLIZATION OF A AL-MG WELDED ALLOY AND LEAD TO A MORE UNIFORM DISTRIBUTION OF INTERGRANULAR PHASE.

WELDING TECHNIQUES

METALS, WELDING

WELDING, METALS

STEELS, LOW ALLOY

LOW ALLOY STEELS

24003

KARASEV, V.M.

USE OF PLASTICS ON THE NUCLEAR ICEBREAKER LENIN.=

SUDOSTROENIE, 27, AUG 1961, PP. 58-60

THIS ARTICLE HAS APPEARED AS THE LAST ONE IN A SPECIAL NUMBER OF SUDOSTROENIE DEVOTED TO ICEBREAKER LENIN ONLY.

IT DESCRIBES IN GENERAL TERMS THE USE OF PVC PLASTICS IN INTERIOR DESIGN OF THE ICEBREAKER.

WELDING PROCEDURES ARE BRIEFLY DISCUSSED. NO DETAILS ARE GIVEN.

ICEBREAKER LENIN

LENIN ICEBREAKER

PLASTICS

PLASTICS, WELDING

WELDING, PLASTICS

24004

KOVRYZHKIN, V.F.

CLADED (DOUBLE-LAYERED) STEEL AND ITS USE IN SHIPBUILDING.=

SUDOSTROENIE, 27, NOV 1961, PP. 57-60

VARIOUS ASPECTS OF USE OF CLADED STEELS ARE DISCUSSED IN RATHER GENERAL TERMS. MAINLY, PROTECTION AGAINST CORROSION IS CONSIDERED. SOME COMPARISON OF MECHANICAL PROPERTIES OF CLADED AND UNCLADED STEELS IS GIVEN, AS WELL AS SPECIFIC TECHNOLOGY AND WELDING. THE ARTICLE CONTAINS ALSO DETAILED INFORMATION, BUT ONLY OF LIMITED NATURE, DESCRIBING MECHANICAL WORKING AND WELDING OF FEW PARTICULAR STEELS.

STEELS, SHIPBUILDING

SHIPBUILDING STEELS

METALS, JOINING

JOINING, METALS

CORROSION PROTECTION

PROTECTION, CORROSION

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24005	24005	510
ARISTOV, V. S.	24005	511
KUDINOV, E. D.	24005	512
SERBIN, N. G.	24005	513
WELDABILITY INVESTIGATION OF THERMALLY-STRENGTHENED CARBON STEEL 20 C.=	24005	514
SUDOSTROENIE, 29, JAN 1963, PP. 51-54	24005	515
THIS ARTICLE DESCRIBES TESTS WHICH ARE TO CHARACTERIZE WELDABILITY OF THE MENTIONED STEEL.	24005	516
THE THERMALLY-STRENGTHENED CARBON STEEL 20 C IS CONSIDERED AS A SUBSTITUTE FOR MORE EXPENSIVE LOW-ALLOY STEELS WITH YIELD LIMIT LARGER THAN 35 KG/MM2 (I.E. 50 KSI). THE STEEL ITSELF IS NOT DESCRIBED.	24005	517
BOTH AUTOMATIC AND MANUAL WELDING WAS USED ON PLATES 10 AND 32 MM (I.E. 0.4 AND 1.25 IN.). ONLY EMPIRICAL TESTING METHODS ARE USED BENDING TESTS OF SPECIMENS WITH WELDS AND SURFACE WELD-BEADS, IMPACT ROUND NOTCH TESTS, DROP-WEIGHT TESTS ON 4 WELDED BEAMS. IN ADDITION, LIMITED METALLOGRAPHIC STUDIES OF THE WELD WERE MADE. THE RESULTS SHOW THAT THE TESTED WELDMENTS ARE SAFE AGAINST BRITTLE FRACTURE AT -25 DEGREES C AND THAT THE ORIGINAL STRENGTHENING WAS NOT IMPAIRED BY SUBSEQUENT WELDING.	24005	518
HOWEVER, SUCH CONCLUSIONS ARE NOT FULLY JUSTIFIED SINCE THE METHODS USED ARE OBSOLETE AND UNRELIABLE.	24005	519
STEELS, CARBON	24005	520
CARBON STEELS	24005	521
STEEL, ECONOMY	24005	701
ECONOMY, STEEL	24005	702
STEELS, HEAT TREATED	24005	703
HEAT TREATED STEELS	24005	704
METALS, WELDING	24005	705
WELDING, METALS	24005	706
24006	24006	707
KACMAN, F. M.	24006	708
MATERIAL SELECTION FOR FABRICATION OF PROPELLER SCREWS OF SEA SHIPS.=	24006	010
SUDOSTROENIE, 24, MAR 1958, PP. 50-53	24006	101
THIS IS A DETAILED ARTICLE DEALING WITH MATERIALS WHICH COULD REPLACE THE DEFICIENT BRASS AS A MATERIAL FOR PROPELLERS. CARBON STEELS, STAINLESS STEELS, AND CAST IRONS ARE CONSIDERED AND COMPARED FROM THE CORROSION AND CAVITATION VIEWPOINT.	24006	201
MATERIALS, SELECTION	24006	202
SELECTION, MATERIALS	24006	251
SHIPS, PROPELLERS	24006	501
PROPELLERS, SHIPS	24006	502
24007	24006	503
MAKSIMADZHI, A. I.	24007	504
NOVIKOV, O. A.	24007	505
SOKOLOV, L. G.	24007	506
TECHNICAL AND ECONOMICAL EFFICIENCY OF LOW-ALLOY STEELS ON DRY CARGO SHIPS.=	24007	701
SUDOSTROENIE, 22, OCT 1956, PP. 27-30	24007	702
THIS ARTICLE COMPARES ECONOMICAL AND TECHNICAL FACTORS OF DRY CARGO SHIPS WHICH HAVE 1000, 3	24007	703
	24007	704
	24007	010
	24007	101
	24007	102
	24007	103
	24007	201
	24007	202
	24007	251
	24007	501
	24007	502

000, 5000 AND 10 000 TONS CAPACITY, RESPECTIVE
LY. FOLLOWING CASES ARE CONSIDERED 1. THE IN
ITIAL CASE WHICH CONSIDERS A STEEL WITH 24 KG/
MM2 (EQUALS 24 KSI) YIELD STRESS AND SHIPS WITH
H TRANSVERSAL STRUCTURE, ACCORDING TO THE SOVI
ET REGISTER. CASE 2 USES FOR ABOUT 45% OF ALL
STRUCTURE A STEEL WITH 35 KG/MM2 (EQUALS 50 S
KI) YIELD STRESS AND SHIPS OF SAME RESPECTIVE
CAPACITY WITH LONGITUDINAL STRUCTURE. THE COM
PARISON SHOWS THAT CASE 2 ENABLES TO SAVE UP
TO 20% OF WEIGHT OF THE STEEL HULL, AND AT THE
SAME TIME RISES CARGO CAPACITY BY ABOUT 6% AND
SPEED BY ABOUT 2%. HENCE, PROPULSION CAPACIT
Y MAY BE REDUCED BY ABOUT 8%. A DETAILED COMP
ARATIVE TABLE OF VARIOUS TECHNICAL AND ECONOMI
CAL FACTORS IS INCLUDED.

STEEL, ECONOMY

ECONOMY, STEEL

LOW ALLOY STEELS

STEELS, LOW ALLOY

CARGO SHIPS, DESIGN

DESIGN, CARGO SHIPS

24008

KOSHELEV, G.G.

ROZENFELD, I.L.

CORROSION RESISTANCE OF A CARBON STEEL AND O
F LOW-ALLOY STEELS IN SEA WATER.=

SUDOSTROENIE, 25, NOV 1959, PP. 12-17

THIS IS A DESCRIPTION OF PROLONGED TESTS (UP T
O 6 YEARS) OF 3 MM THIN METALLIC SHEETS IN SEA
WATER. A COMPARISON OF CORROSION RESISTANCE
AND OF CHANGE OF MECHANICAL PROPERTIES IS GIVE
N FOR A ST.3 LOW CARBON STEEL AND OF THREE LOW
-ALLOY STEELS (SKHL-1, MS-1, MK) IN VARIOUS HE
AT TREATED STATES. NO WELDED OR LOADED NOTCHE
D SPECIMENS WERE USED AND THEREFORE THE USEFUL
NESS OF RESULTS IS RATHER LIMITED.

CORROSION RESISTANCE

RESISTANCE, CORROSION

CARBON STEELS

STEELS, CARBON

LOW ALLOY STEELS

STEELS, LOW ALLOY

TESTING METHODS

METHODS, TESTING

24009

SCSHERBAKOV, P.S.

ZOBACHEV, JU.E.

SUPRUN, L.A.

CORROSION DAMAGE TO SHIP STRUCTURAL MATERIAL
S IN A STREAM OF SEA WATER.=

SUDOSTROENIE, 28, JUN 1962, PP. 55-59

EXPERIMENTS ON CORROSION RESISTANCE OF A LARGE
VARIETY OF MATERIALS IN A STREAM OF SEA WATER
ARE DESCRIBED. IN PARTICULAR, RATE OF CORROS
ION VS. SPEED OF MOTION OF SAMPLE RECTANGULAR
PLATES 0.1 X 1 X 2 IN. IN SEA WATER WAS MEASUR
ED. THE MATERIALS TESTED WERE 6 TYPES OF CAR
BON AND LOW-ALLOY STEELS, 6 STAINLESS STEELS,
2 CAST IRONS, 1 COPPER, 6 BRONZES, 2 BRASSES,

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3 MAGNESIUM ALLOYS AND 1 ALUMINUM ALLOY. THE TESTING SPEED WAS FROM 2 TO 16 M/SEC (6.5 TO 52.55 FPS). RESULTS SHOW, ALMOST INVARIABLY, A SHARP INCREASE IN CORROSION RATE WITH SPEED, PARTICULARLY FOR HIGH SPEEDS.

AUSTENITIC STAINLESS STEELS, ALUMINUM BRONZES AND BRASSES SHOW LESS THAN 0.01 IN. OF CORRODED DEPTH PER YEAR AT HIGHEST SPEED. COPPER SHOWS MORE THAN TWICE AS MUCH, WHILE STEELS DISPLAY ABOUT 10 TIMES OF THE FORMER RATE, ALUMINUM ALLOYS AND MAGNESIUM ALLOYS ARE MUCH WORSE.

NO STRESS CORROSION TESTS ARE MENTIONED, AND THE INFLUENCE OF TEMPERATURE, WELDING, STRESS CONCENTRATIONS, ETC. IS NEGLECTED. TRANSLATION OPTIONAL.

CORROSION RESISTANCE
RESISTANCE, CORROSION

CARBON STEELS
STEELS, CARBON

ALLOY STEELS
STEELS, ALLOY

TESTING METHODS

24010

SHMIDT, N.V.

DONCOV, P.M.

KRASILNIKOV, Z.N.

SHVACH, E.N.

OVSIANNIKOV, I.I.

HEAT STRENGTHENED CARBON STEEL FOR SHIPBUILDING.=

SUDOSTROENIE, 28, SEP 1962, PP. 44-48

THIS IS A DESCRIPTION OF HEAT TREATMENT OF A 20 C CARBON STEEL WHICH MAY BE STRENGTHENED UP TO 35 KG/MM² (ABOUT 50 KSI) IN YIELD STRENGTH.

THIS IS DONE MERELY FOR ECONOMICAL REASONS, NAMELY BECAUSE NICKEL AND COPPER ARE DEFICIENT IN RUSSIA AND MAKE LOW-ALLOY STEELS LESS AVAILABLE. ALTHOUGH MECHANICAL PROPERTIES AND BRITTLENESS COMPARE REASONABLY WITH THOSE OF LOW-ALLOY STEELS, NO COMMENT IS MADE ON WELDABILITY, CORROSION RESISTANCE, ETC.

STEELS, SHIPBUILDING

SHIPBUILDING STEELS

STEELS, HEAT TREATED

HEAT TREATED STEELS

CARBON STEELS

STEELS, CARBON

24011

BEZUKLADOV, V.F.

CHUVIKOVSKIY, G.S.

CHUVIKOVSKIY, V.S., SHEVANDIN, E.M.

FATIGUE OF SHIP STRUCTURAL STEELS AND STRENGTH OF SHIP STRUCTURES.=

SUDOSTROENIE, 23, FEB 1957, PP. 1-8

THIS IS AN EXTENSIVE EXPERIMENTAL STUDY IN FATIGUE RESISTANCE OF SIX CARBON AND LOW-ALLOY STEELS USED FOR SHIPBUILDING IN RUSSIA. BOTH SMALL, SMOOTH AND NOTCHED SPECIMENS AND LARGE WELDED BEAMS WERE TESTED AND MINIMUM S-N CURVES OBTAINED AS LOWER BOUNDS OF WIDELY SCATTERED R

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RESULTS. THE REASONING OF THIS PROGRAM IS CONNECTED WITH FAILURES OF LIBERTY SHIPS. ALSO THE TREATMENT IS CLASSICAL, AND NO THEORETICAL CONCLUSIONS ARE MADE.

FATIGUE TESTING
TESTING, FATIGUE
CARBON STEELS
STEELS, CARBON
STEELS, LOW ALLOY
LOW ALLOY STEELS
24012

SMOKJAVCOV, B.

SELECTION OF A SHIP STRUCTURAL STEEL WITH RESPECT TO WEIGHT PARAMETERS AND HULL STABILITY.

RECHNOJ TRANSPORT, 21, DEC 1962

THIS IS A SHORT BUT DETAILED ACCOUNT OF THE TITLE SUBJECT. IT CONTAINS A TABLE OF CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES OF 3 CARBON AND OF 4 LOW-ALLOY STEELS USED IN SHIPBUILDING IN RUSSIA. SIMPLE FORMULAE AND GRAPHS FOR SELECTION ARE INCLUDED. TRANSLATION RECOMMENDED.

MATERIALS, SELECTION
SELECTION, MATERIALS
SHIPBUILDING STEELS
STEELS, SHIPBUILDING
STEELS, CARBON
CARBON STEELS
STEELS, LOW ALLOY
LOW ALLOY STEELS
24013

SHILOV, I. V.

ON SOME PROBLEMS OF CORROSION PROTECTION OF A SHIP HULL (FROM PRACTICE OF HOLLAND SHIPBUILDERS). =

SUDOSTROENIE, 24, SEP 1958, PP. 76-77

THIS IS A REVIEW ARTICLE BASED MAINLY ON INFORMATION ABOUT CORROSION PROTECTION PRACTICE ON THE DE SCHELDE SHIPYARD. FOLLOWING TOPICS ARE DISCUSSED REMOVAL OF ROLLING SCALE FROM STEEL PLATES. THE SCALE IS A SUBSTANTIAL CORROSION ACCELERATOR AND MAY BE REMOVED EFFECTIVELY BY GRIT BLASTING. THEN A COMPOUND (ACRO-BET) IS MENTIONED WHICH IS USED TO CONVERT RUST INTO PHOSPHATES WHICH PROTECT STEEL AGAINST FURTHER CORROSION. SINCE WELDS SERIOUSLY IMPAIR CORROSION RESISTANCE, VARIOUS TECHNIQUES, BOTH WELDING AND PROTECTIVE, ARE DISCUSSED. TRANSLATION OPTIONAL.

CORROSION PROTECTION
PROTECTION, CORROSION

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24014

VYKOCKIJ, A. A.

ZOBACHEV, JU. E.

CAVITATION RESISTANCE OF MATERIALS IN MEDIA
WITH VARIOUS ADDITIONS. =

TRUDY C. N. I. I. MORSKOGO FLOTA 57, 1964, P. 43-
50

THIS IS AN EXPERIMENTAL STUDY PERFORMED ON CAV-
ITATION RESISTANCE OF VARIOUS STRUCTURAL MATER-
IALS (CAST IRON, STEEL, BRONZE). ALL WERE TESTED
BY MEANS OF A MAGNETOSTRICTION GENERATOR IN
N WATER CONTAINING VARIOUS CAVITATION INHIBITORS.
IT IS CONCLUDED THAT EMULSION TYPE ADDITI-
ONS IMPROVE THE CAVITATION RESISTANCE AT MOST.

THE CONNECTION BETWEEN CAVITATION DAMAGE AND
CORROSION-FATIGUE STRENGTH IS NOTED.

CORROSION RESISTANCE
RESISTANCE, CORROSION
CAVITATION

24015

KOSTROV, E. N.

SHEKHOVCEV, E. D.

MARUGIN, V. V.

KAGANOVICH, I. S.

THE INFLUENCE OF CORROSION INHIBITORS ON COR-
ROSION-FATIGUE RESISTANCE OF STEEL AND OF CAST
IRON. =

TRUDY C. N. I. I. MORSKOGO FLOTA 57, 1964, P. 51-
60

THIS IS AN EXPERIMENTAL STUDY IN FATIGUE BEHAV-
IOR OF SEVERAL STEELS IN A CORROSION ENVIRONME-
NT OF VARIOUS INTENSITY. THE MATERIALS TESTED
WERE A CARBON STEEL, 3 LOW-ALLOY STEELS AND

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IT IS SHOWN THAT THE FIRST PLAS-
TIC STRAIN CYCLE HAS THE MOST PRONOUNCED INFLU-
ENCE ON MECHANICAL PROPERTIES. HOWEVER, UP TO
1000 OF SUCH CYCLES MAY BE APPLIED WITHOUT CA-
USING SERIOUS DAMAGE TO THE MICROSTRUCTURE. T-
EST RESULTS ARE PRESENTED FOR A CARBON AND FOR
SOME LOW-ALLOY SHIPBUILDING STEELS. IMPLICAT-
IONS TO POSSIBLE BRITTLE FRACTURE INITIATION A-
RE DISCUSSED. THOSE DO NOT SEEM TO BE VERY ME-
ANINGFUL. FURTHER EXPERIMENTS ARE PROPOSED.

FATIGUE TESTING
TESTING, FATIGUE

24016

GLIKMAN, L.A.
SHEKHOVCEV, E.D.

CHANGES IN MECHANICAL PROPERTIES OF A SHIPBU-
ILDING STEEL CAUSED BY CYCLIC PLASTIC STRAININ-
G IN TENSION. =

TRUDY C.N.I.I. MORSKOGO FLOTA 57, 1964, P. 61-
69

THIS IS AN EXTENSIVE EXPERIMENTAL STUDY ON THE
TITLE TOPIC. IT IS SHOWN THAT THE FIRST PLAS-
TIC STRAIN CYCLE HAS THE MOST PRONOUNCED INFLU-
ENCE ON MECHANICAL PROPERTIES. HOWEVER, UP TO
1000 OF SUCH CYCLES MAY BE APPLIED WITHOUT CA-
USING SERIOUS DAMAGE TO THE MICROSTRUCTURE. T-
EST RESULTS ARE PRESENTED FOR A CARBON AND FOR
SOME LOW-ALLOY SHIPBUILDING STEELS. IMPLICAT-
IONS TO POSSIBLE BRITTLE FRACTURE INITIATION A-
RE DISCUSSED. THOSE DO NOT SEEM TO BE VERY ME-
ANINGFUL. FURTHER EXPERIMENTS ARE PROPOSED.

FATIGUE TESTING
TESTING, FATIGUE
FRACTURE TESTING
TESTING, FRACTURE

24017

GLIKMAN, L.A.
SHEKHOVCEV, E.D.

LOW-CYCLE FATIGUE STRENGTH OF SOME SHIPBUIL-
DING METALLIC MATERIALS, TESTED IN BENDING. =

TRUDY C.N.I.I. MORSKOGO FLOTA 57, 1964, P. 76-
88

THIS IS AN EXTENSIVE EXPERIMENTAL STUDY ON THE
TITLE TOPIC WHICH COVERS MANY STEELS AND ALUM-
INUM ALLOYS. LARGE STRAIN AMPLITUDES (UP TO 1
(1) WERE USED. THE RESULTS ARE USEFUL FOR THE
PURPOSE OF PERFORMANCE COMPARISON OF VARIOUS S-
HIPBUILDING MATERIALS. OBSERVATIONS OF FATIGU-
E CRACK GROWTH AND OF ITS CONVERSION INTO BRIT-
TLE FRACTURE ARE BRIEFLY REPORTED.

FATIGUE TESTING
TESTING, FATIGUE
SHIPBUILDING STEELS
STEELS, SHIPBUILDING

24018

CHAPKIS, D.T.

ON DECREASE IN YIELD STRENGTH OF THE SHIPBU-
ILDING STEEL ST 43 IN TESTS ON WIDE SPECIMENS. =

TRUDY C.N.I.I. MORSKOGO FLOTA 57, 1964, P. 89-
92

THIS IS A SHORT ACCOUNT OF EXPERIMENTS WHICH W-
ERE PERFORMED TO INVESTIGATE EFFECT OF SIZE ON

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MECHANICAL PROPERTIES OF A CARBON STEEL. THE
ETC WERE TESTED IN TENSION. SPECIMENS WERE
METRICALLY SIMILAR IN THE PLANE AND THE WIDTH
WAS CHANGED FROM ABOUT 1.5 IN. TO .65 IN. A 94
DROP IN YIELD STRENGTH WAS OBSERVED FOR WIDE
SPECIMENS. SOME OTHER RESULTS ON ROUND BARS A
RE SHOWN FOR COMPARISON AND INDICATE THE SAME
TREND WITH EVEN LARGER DROPS, UP TO 14.5%.

MATERIALS, TESTING
TESTING, MATERIALS
MECHANICAL PROPERTIES
SIZE EFFECTS

24019

ANONYMOUS

I. CORROSION-FATIGUE STRENGTH OF STEEL SPEC
IMENS WHICH WERE METALLIZED BY THE STAINLESS S
TEEL 1 KH TRNPT.

TRUDY C.N.I.I. MORSKOGO FLOTA 22, 1959, P. 5-1
9

THIS IS AN EXTENSIVE AND INTERESTING PAPER ON
THE TITLE SUBJECT. THE STAINLESS STEEL USED I
S A 18 CR-8NI TYPE WITH TITANIUM. A VARIETY O
F EFFECTS IS INVESTIGATED, INCLUDING SIZE EFFE
CTS. THE MAIN CONCLUSION REMAINS, THAT THE PR
OTECTIVE COATING IS USEFUL ONLY IF FATIGUE CRA
CK INITIATION IS PREVENTED IN THE BASE MATERIA
L. THIS CAN BE ACHIEVED BY INTRODUCTION OF SU
RFACE COMPRESSIVE RESIDUAL STRESSES BY SURFACE
WORKING. IF CRACKS ARE PERMITTED TO BE FORME
ED, THE PROTECTION IS OF NO USE. THE CONTEMP
ATED AREA OF APPLICATION OF THE COATING IS IN
PROPELLER SHAFTS. IT IS CONCLUDED THAT METALL
IZING IS OF LITTLE USE IN SUCH CASES EXCEPT FO
R SHAFTS WITH VERY LOW WORKING LOADS.

FATIGUE TESTING

TESTING, FATIGUE

CORROSION PROTECTION

PROTECTION, CORROSION

COATINGS

24020

ANONYMOUS

II. CORROSION-FATIGUE STRENGTH OF SOME STEE
LS IN SEA WATER.

TRUDY C.N.I.I. MORSKOGO FLOTA 22, 1959, P. 20-
26

THIS IS A SHORT ACCOUNT OF FATIGUE EXPERIMENTS
WHICH WERE PERFORMED IN REVERSED BENDING AND
SPECIMENS WERE EXPOSED TO A CORROSIVE MEDIUM.

13 STEELS OF VARIOUS GRADES WERE TESTED. THE
CORROSIVE MEDIUM WAS A 3% SOLUTION OF NA Cl I
N WATER. EARLIER TESTS HAVE SHOWN THAT IT REP
RESENTS A GOOD SUBSTITUTE FOR SEA WATER.

BEST RESULTS WERE OBTAINED WITH AUSTENITIC STA
INLESS STEELS. MARTENSITIC STAINLESS STEEL SH
OWED A DROP IN FATIGUE STRENGTH BY A FACTOR OF

2. HIGH-STRENGTH CARBON STEELS SHOWED WORSE
BEHAVIOR, THE DROP BEING BY A FACTOR OF 10. C
ARBON AND LOW-ALLOY STEELS SHOWED A DROP BY A
FACTOR OF 2 TO 4.5. ALL TESTS WERE PERFORMED
FOR ABOUT 10 CYCLES.

CORROSION

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FATIGUE TESTING	24020	702
TESTING, FATIGUE	24020	702
SHIPBUILDING STEELS	24020	704
STEELS, SHIPBUILDING	24020	705
24021	24021	010
ANONYMOUS	24021	101
III. INFLUENCE OF STRESS CONCENTRATORS ON CORROSION-FATIGUE STRENGTH OF SOME STEELS AND ALUMINUM ALLOYS IN SEA WATER. =	24021	201
TRUDY C.N.I.I. MORSKOGO FLOTA 22, 1959, P. 27-36	24021	202
THIS IS AN INTERESTING STUDY WHICH REVEALS BASIC FEATURES OF STRESS-CORROSION DAMAGE TO STEELS AND ALUMINUM ALLOYS. IN PRINCIPLE, SHARP STRESS CONCENTRATORS FACILITATE FATIGUE DAMAGE CONSIDERABLY. CORROSION DAMAGE IS BENEFICIAL PROVIDING THAT IT CAUSES EFFECTIVE BLUNTING OF STRESS CONCENTRATORS. THIS IS A USUAL CASE IN STEEL. IN ALUMINUM ALLOYS, HOWEVER, LIKE IN MOST OTHER CORROSION-RESISTANT ALLOYS, THE CORROSION DAMAGE IS LIMITED AND RATHER CONTRIBUTES TO FAILURE.	24021	203
INFLUENCE OF VARIOUS FACTORS OF THE FATIGUE CYCLING REGIME AND OTHER EFFECTS ARE EVALUATED.	24021	251
FATIGUE TESTING	24021	252
TESTING, FATIGUE	24021	254
CORROSION RESISTANCE	24021	501
RESISTANCE, CORROSION	24021	502
24022	24021	503
ANONYMOUS	24021	504
IV. THE INFLUENCE OF SPECIMEN SIZE ON CORROSION-FATIGUE STRENGTH OF STEEL. =	24021	505
TRUDY C.N.I.I. MORSKOGO FLOTA 22, 1959, P. 37-44	24021	506
EXPERIMENTS ON THE TITLE TOPIC WERE PERFORMED WITH CARBON STEEL BOTH IN CLEAN AND SALT WATER. THE EFFECT OF SIZE IS RELATED TO STRESS AMPLITUDE AND TO THE NUMBER OF CYCLES. SEVERAL TENTATIVE CONCLUSIONS WERE REACHED WITH LITTLE EXPERIMENTAL OR THEORETICAL JUSTIFICATION.	24021	507
CORROSION	24021	508
FATIGUE TESTING	24021	509
TESTING, FATIGUE	24021	510
SIZE EFFECTS	24021	511
24023	24021	512
ANONYMOUS	24021	513
V. RELATION BETWEEN CORROSION-FATIGUE STRENGTH IN BENDING AND IN TORSION. =	24021	701
TRUDY C.N.I.I. MORSKOGO FLOTA 22, 1959, P. 45-50	24021	702
THIS IS A SHORT DESCRIPTION OF SIMPLE EXPERIMENTS PERFORMED ON SMOOTH SPECIMENS OF MILD STEEL IN AIR AND IN SALT WATER, RESPECTIVELY. IT APPEARS THAT THE APPRECIABLE DIFFERENCES OBSERVED IN AIR TESTS WERE ESSENTIALLY ELIMINATED FOR TESTS IN SALT WATER, ESPECIALLY FOR LARGER NUMBER OF CYCLES.	24021	703
CORROSION	24021	704
FATIGUE TESTING	24021	705
TESTING, FATIGUE	24021	706
24024	24021	707
	24022	010
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ANONYMOUS

VII. THE INFLUENCE OF CORROSION ON THE STRENGTH OF METALS.

TRUDY C.N.I.I. MORSKOGO FLOTA 22, 1959, P. 61-63

THIS IS AN EXTENSIVE AND DETAILED ACCOUNT INTO THE TITLE TOPIC. RELEVANT BEHAVIOR IS ANALYZED FOR TESTS IN AIR, SALT WATER AND ALSO AT HIGH TEMPERATURES. A LARGE VARIETY OF DATA HAS BEEN COMPILED FOR STEEL, ALUMINUM ALLOYS AND ALSO FOR SOME OTHER METALS. A NUMBER OF USEFUL CONCLUSIONS HAVE BEEN REACHED. APPRECIABLE EFFECTS APPEAR ONLY FOR VERY HIGH FREQUENCIES.

CORROSION

FATIGUE TESTING

TESTING, FATIGUE

24025

ANONYMOUS

VIII. CORROSION OF SOME STEELS, CAST IRONS AND OTHER METALS AS A FUNCTION OF VARIABLE SPEED OF A SEA WATER STREAM.

TRUDY C.N.I.I. MORSKOGO FLOTA 22, 1959, P. 70-77

THIS IS A DESCRIPTION OF EXPERIMENTS AND ALSO OF METHODS AND FACILITIES USED IN A STUDY OF THE TITLE TOPIC. THE RESULTS ARE REMARKABLY UNIFORM FOR ALL TESTED MATERIALS AND SHOW THAT THE CORROSION RATE INCREASES SHORTLY AT SPEEDS ABOVE 8 METERS PER SECOND AND BECOMES ABOUT 5 TIMES THE THRESHOLD VALUE FOR SPEEDS ABOUT 16 METERS PER SECOND. ONLY 5 BOTH SPECIMENS WERE TESTED.

CORROSION RESISTANCE

RESISTANCE, CORROSION

TESTING METHODS

METHODS, TESTING

24026

BERSHTEIN, V.A.

VISLENKO, I.O.

ELIN, I.A.

EPOXY RESINS AND THEIR APPLICATION IN SHIP REPAIR.

TRUDY C.N.I.I. MORSKOGO FLOTA 25, 1959, P. 3-3

THIS IS A VERY DETAILED DESCRIPTION OF MECHANICAL PROPERTIES OF A NUMBER OF EPOXY RESINS. COMPOSITIONS ARE GIVEN AND RECOMMENDED COMBINATIONS WITH VARIOUS STEELS AND OTHER METALS ARE GIVEN. THE SECOND PART OF THE ARTICLE DESCRIBES RECOMMENDED PRACTICES FOR USE OF SUCH EPOXY MATERIALS IN SHIPBUILDING AND REPAIR.

METALS, GLUING

GLUING, METALS

SHIPS, REPAIR

REPAIR, SHIPS

ADHESIVES

24027

BELOCHUK, G.A.

ARC WELDING OF ALUMINUM AND OF ITS ALLOYS WITH STEEL WHEN A LAYER OF ALUMINUM IS ATTACHED TO STEEL BY MEANS OF HIGH FREQUENCY CURRENTS.

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A LARGE VARIETY OF LOW MEDIUM AND HIGH STRENGTH STEELS IS LISTED AND THEIR PROPERTIES, COMPOSITION AND WELDABILITY ARE EVALUATED. REQUIREMENTS OF VARIOUS REGISTERS ARE LISTED. MODERN PRODUCTION METHODS ARE NOTED AND A LIST OF CONTEMPORARY TESTING METHODS, INCLUDING WELDABILITY TESTING, IS GIVEN. TRANSLATION OPTIONAL.

STEELS, SHIPBUILDING
SHIPBUILDING STEELS
STEELS, MEDIUM STRENGTH
MEDIUM STRENGTH STEELS
TESTING METHODS
METHODS, TESTING

24032

DICK, W.

THE SURFACE OF A SHIPBUILDING STEEL SHEET.
A CONTEMPORARY VIEWPOINT. =

JAHRBUCH SCHIFFBAUTECHN. GES. 59, 1965, P. 83-92

THIS IS A SHORT SURVEY ON THE TITLE TOPIC. IT INCLUDES INTERNATIONAL STANDARDS OF DEFINITIONS FOR SURFACES, BASIC PROPERTIES OF ROLLED SURFACES, THE INFLUENCE OF SCALE, MODERN PREPARATION AND PROTECTION OF SURFACES AND POSSIBLE WAYS OF IMPROVEMENTS AS BASED ON RECENT RESEARCH RESULTS. AN EXTENSIVE DISCUSSION IS INCLUDED AND ABOUT 38 REFERENCES LISTED. TRANSLATION OPTIONAL.

COATINGS

CORROSION PROTECTION

PROTECTION, CORROSION

PAINTS

MATERIAL SPECIFICATIONS

SPECIFICATIONS, MATERIAL

STEELS, SHIPBUILDING

SHIPBUILDING STEELS

24033

WEBB, A.W.C.

BRONZE PROPELLERS AND THEIR MAINTENANCE. =

JAHRBUCH SCHIFFBAUTECHN. GES. 59, 1965, P. 93-101

AN ATTEMPT IS MADE TO INDICATE THE MAJOR DIFFERENCES BETWEEN THE THREE MAIN GROUPS OF COPPER-BASE ALLOYS USED FOR LARGE PROPELLER MANUFACTURE. THOSE INCLUDE HIGH-TENSILE BRASSES, ALUMINUM BRONZES AND MANGANESE-ALUMINUM BRONZES. SPECIFIC MAINTENANCE PROCEDURES MUST BE FOLLOWED ACCORDING TO THE PROPELLER MATERIAL. IN ENGLISH.

SHIPS, REPAIR

REPAIR, SHIPS

SHIPS, PROPELLERS

PROPELLERS, SHIPS

MATERIALS, SELECTION

SELECTION, MATERIALS

24034

WALLBAUM, H.J.

ON CORROSION RESISTANCE OF COPPER-BASED ALLOYS WITH REGARD TO THEIR USE IN SHIPBUILDING. =

JAHRBUCH SCHIFFBAUTECHN. GES. 59, 1965, P. 111

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ALLOYING ELEMENTS, NAMELY TITANIUM, MOLYBDENUM,
 NI, URANIUM TANTAL AND NIOBIUM, BERYLLIUM AND O
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INDUSTRIAL LABORATORY, 31, MAY, 1965, P. 748-749.	24137	509
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FATIGUE TESTING	24137	702
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THE EFFECT OF THE FREQUENCY OF CYCLIC STRESS ON THE FATIGUE STRENGTH OF LOW CARBON STRUCTURAL STEEL.=	24138	201
INDUSTRIAL LABORATORY, 31, MAY 1965, P. 750-751	24138	202
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THIS IS A STUDY IN THE EFFECT OF FREQUENCY ON FATIGUE STRENGTH OF A CHROME-MANGANESE STEEL.	24138	251
IT IS FOUND THAT THERE IS LITTLE EFFECT IN SMOOTH SPECIMENS, BUT FOR NOTCHED SPECIMENS THE SERVICE LIFE IMPROVES 2-4 TIMES FOR FREQUENCY INCREASE FROM 20 TO 3000 CPM.	24138	252
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WOOD FOR SHIPBUILDING AND NAVIGATION.=	24139	505
SCHIFF UND HAFEN, 10, JAN 1958, P. 49-53	24139	506
THIS IS A GENERAL ARTICLE WHICH QUOTES SOME DATA ON USE OF WOOD IN SHIPBUILDING AND GIVES MECHANICAL PROPERTIES REQUIRED BY GERMAN STANDARDS. IT ALSO MENTIONS PROTECTION AND FIRE PREVENTION.	24140	701
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MATERIALS SHIPBUILDING	24140	703
24141	24141	011
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NEW APPLICATIONS OF CAST STEEL IN SHIPBUILDING.=	24141	201
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POEL, G.	24142	011
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24143	24143	702
SCHULLER, A.	24143	011
THIELMANN, H.	24143	101
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SCHIFF UND HAFEN, JUL 1959, P. 654-660	24143	201
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FATIGUE TESTING	24145	702
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A STATISTICAL METHOD FOR THE ASSESSMENT OF THE	24146	102
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THIS IS A DESCRIPTION OF A NEW STATISTICAL METHOD	24146	251
WHICH, BY USING WEIBULL'S THEORY, CAN PREDICT	24146	501
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A GIVEN PROBABILITY OF FAILURE.	24146	503
FATIGUE TESTING	24146	504
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STATISTICAL ANALYSIS	24146	702
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ON THE EQUATION OF THE FATIGUE CURVE.=	24147	101
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PREDICTS THE NUMBER OF CYCLES TO RUPTURE AS A	24147	501
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MATERIALS TESTING	24147	702
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**VARIOUS ASPECTS OF APPLICATION OF WELDING IN
CONSTRUCTION OF NUCLEAR REACTORS.**

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24148 504

METALS, WELDING

24148 701

WELDING, METALS

24148 702

POWER PLANTS, NUCLEAR

24148 703

NUCLEAR POWER PLANTS

24148 704

WELDING EQUIPMENT

24148 705

WELDING TECHNIQUES

24148 706

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ING OF THE STABILITY OF OPERATION OF RADIO-		30001	502
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MEASUREMENT, EQUIPMENT		30001	702
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THIS IS THE FIRST PART OF AN EXTENSIVE EXPOSIT-		30002	501
ION OF THE TITLE SUBJECT WRITTEN FOR USE BY EN-		30002	502
GINEERS WHO ARE NOT ACQUAINTED WITH THE THEORY		30002	503
OF PROBABILITY AND MATHEMATICAL STATISTICS (C		30002	504
F REF. 30003). THE OUTLINE INCLUDES COMPLETE		30002	505
AND CORRECT MATHEMATICAL BACKGROUND WHICH IS S		30002	506
UFFICIENT FOR APPLICATION OF THE TITLE METHODS		30002	507
IN ENGINEERING PROBLEMS. IN ENGLISH.		30002	508
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30003		30003	011
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THE USE OF METHODS OF CORRELATION AND REGRES-		30003	201
SION ANALYSIS IN THE PROCESSING OF EXPERIMENTA-		30003	202
L RESULTS (REVIEW, PART II). =		30003	203
INDUSTRIAL LABORATORY, 30, AUG 1964, P. 1204-1		30003	251
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THIS IS A CONTINUATION OF THE REF. 30002.		30003	501
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METHODS, MATHEMATICAL		30003	702
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37001

LJUSH, D.V.

COMMUNICATION, OBSERVATION AND COMMAND SYSTEMS ON THE NUCLEAR ICEBREAKER LENIN.

SUDOSTROENIE, 27, AUG 1961, PP. 18-21

THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN ONLY.

37001

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A SUMMARIZED DESCRIPTION OF COMMUNICATION AND OF OTHER RELATED SYSTEMS IS GIVEN. PARTICULAR TOPICS ARE TELEPHONE SYSTEMS, TELETYPE SYSTEMS, REMOTE CONTROL, MEASUREMENT AND SIGNAL SYSTEMS, FIRE ALARM SYSTEMS, SYSTEM FOR LIQUID LEVEL CONTROL, TIME CONTROL DEVICES, NAVIGATIONAL AIDS, RADARS, RADIO EQUIPMENT, TELEVISION EQUIPMENT AND OTHERS. TRANSLATION RECOMMENDED.

SYSTEMS COMMAND

SYSTEMS COMMUNICATION

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, SYSTEMS

SYSTEMS, ICEBREAKERS

37002

DEMIN, I.

DETERMINATION OF ICE DISTRIBUTION BY SHIP RADARS. =

MORSKOJ FLOT, 21, MAR 1961, PP. 12-14

THIS IS BRIEF ANALYSIS OF THE TITLE SUBJECT.

IT IS CONCLUDED THAT RADARS OF TYPES NEPTUN-M AND DON ARE QUITE SUITABLE FOR DETERMINATION OF ICE DISTRIBUTIONS. BEST ACCURACY OF OBSERVATION IS REACHED WHEN ICE FIELDS ARE ROUGHED AND COMPACT. BROKEN ICE AND FIELDS OF FLOWS ARE USUALLY OVERESTIMATED IN SIZE AND DENSITY. TRANSLATION OPTIONAL.

ICE CONDITIONS, FORECAST

FORECAST, ICE CONDITIONS

SHIPS, SYSTEMS

SYSTEMS, SHIPS

37003

LOGINOV, K.

ON AUTOMATION OF COMPUTATIONS DURING NAVIGATION IN ICE. =

MORSKOJ FLOT, 16, APR 1956, PP. 21-23

THIS IS AN EXPLANATION OF A METHOD OF INSTANT POSITION CALCULATION WHICH WAS DEVELOPED BY THE AUTHORS AND USED IN 1952 AND 1953 ON ICEBREAKER I. STALIN. THE EQUIPMENT USED IS DESCRIBED IN DETAIL. TRANSLATION OPTIONAL.

ICEBREAKERS, NAVIGATION SYSTEMS

NAVIGATION SYSTEMS, ICEBREAKERS

37004

KOTJUK, A.

ANALYSIS OF RADAR SIGNALS REFLECTED FROM ICE. =

MORSKOJ FLOT, 23, MAY 1963, PP. 17-19

THE TITLE TOPIC IS DISCUSSED WITH SOME DETAIL AND VARIOUS ASPECTS OF RADAR OBSERVATION OF ICE FIELDS ARE MENTIONED. TRANSLATION OPTIONAL.

ICE CONDITIONS, FORECAST

FORECAST, ICE CONDITIONS

37005

SELIVANOV, M.

A THEODOLITE FOR POSITION DETERMINATION OF A SHIP DURING NAVIGATION IN ICE. =

MORSKOJ FLOT, 23, APR 1963, PP. 19-21

THIS IS A DETAILED AND ELEMENTARY DESCRIPTION

37001	504
37001	505
37001	506
37001	507
37001	508
37001	509
37001	510
37001	511
37001	701
37001	702
37001	703
37001	704
37001	705
37001	706
37002	010
37002	101
37002	201
37002	202
37002	251
37002	501
37002	502
37002	503
37002	504
37002	505
37002	506
37002	507
37002	508
37002	701
37002	702
37002	703
37002	704
37003	010
37003	101
37003	201
37003	202
37003	251
37003	501
37003	502
37003	503
37003	504
37003	505
37003	701
37003	702
37004	010
37004	101
37004	201
37004	202
37004	251
37004	501
37004	502
37004	503
37004	504
37004	701
37004	702
37005	010
37005	101
37005	201
37005	202
37005	251
37005	501

OF A METHOD OF POSITION DETERMINATION OF ICEBREAKERS DURING THE POLAR NIGHT. A REGULAR THEODOLITE IS USED FOR MEASUREMENTS BASED ON OBSERVATION OF STARS AND ON RECORDING OF TIME OF THEIR RELATIVE MOTION. IT IS STATED THAT SUCH A METHOD WAS USED IN WINTER OF 1961 ON THE LENIN ICEBREAKER. MEASUREMENTS WERE PERFORMED BOTH ON THE SHIP AND ON THE SURROUNDING ICE. TRANSLATION OPTIONAL.

ICEBREAKERS, NAVIGATION SYSTEMS

NAVIGATION SYSTEMS, ICEBREAKERS

37005

SHALAGINOV, A.

A MEASURING TABLE FOR POSITION DETERMINATION DURING NAVIGATION IN ICE.=

MORSKOJ FLOT, 23, OCT 1963, PP. 21-24

THIS IS A DETAILED AND ELEMENTARY DESCRIPTION OF A SIMPLE MEASURING DEVICE WHICH MAY BE USED FOR POSITION CALCULATIONS DURING NAVIGATION IN ICE.

ICEBREAKERS, NAVIGATION SYSTEMS

NAVIGATION SYSTEMS, ICEBREAKERS

37007

PERVEZENCEV, E. I.

AN OPTIMUM SYSTEM OF AUTOMATIC SHIP NAVIGATION WITH FULL INITIAL INFORMATION, WHICH IS EQUIVALENT TO A SELF-ADJUSTING SYSTEM.=

TRUDY C.N.I.I. MORSKOGO FLOTA 55, 1964, P. 28-32

THE INVARIANT PROPERTIES OF A COMBINED SHIP AUTOMATIC REGULATION SYSTEM WITH RIGID STRUCTURE AND CONSTANT FUNCTION PROGRAM ARE ANALYZED.

IT IS SHOWN THAT A SYSTEM OF THIS TYPE, WHICH CAN BE REGULATED, HAS EQUIVALENT PROPERTIES TO A SELF-ADJUSTING SYSTEM. THE INFORMATION NATURE OF INVARIANCE CONDITIONS IS DISCUSSED.

SHIPS, NAVIGATION SYSTEMS

NAVIGATION SYSTEMS, SHIPS

SHIPS, SYSTEMS

SYSTEMS, SHIPS

37008

PERVEZENCEV, E. N.

SOME STABILITY CONDITIONS OF A NONLINEAR SYSTEM OF AUTOMATIC SHIP NAVIGATION.=

TRUDY C.N.I.I. MORSKOGO FLOTA 55, 1964, P. 33-51

THIS IS AN EXTENSIVE AND DETAILED ARTICLE ON STABILITY PROBLEMS OF NONLINEAR SYSTEMS OF AUTOMATIC SHIP NAVIGATION. THE STABILITY CONDITIONS OF A SYSTEM, WHICH CAN BE REGULATED, WERE DERIVED UNDER THE ASSUMPTION OF A NONLINEAR RUDDER DRIVE. THIS WAS DONE BY THE DIRECT METHOD OF A. M. LJAPUNOV AT CONSTANT EXCITATIONS AND ALSO BY MEANS OF THE METHOD OF STATISTICAL LINEARIZATION WHEN RANDOM EXCITATION FACTORS WERE PRESENT. THE STABILITY CONDITIONS WERE OBTAINED FOR THE SYSTEM UNDER VARIOUS WORKING REGIMES.

SHIPS, NAVIGATION SYSTEMS

NAVIGATION SYSTEMS, SHIPS

SHIPS, SYSTEMS

SYSTEMS, SHIPS

37005	502
37005	503
37005	504
37005	505
37005	506
37005	507
37005	508
37005	509
37005	510
37005	701
37005	702
37006	010
37006	101
37006	201
37006	202
37006	251
37006	501
37006	502
37006	503
37006	504
37006	701
37006	702
37007	010
37007	101
37007	201
37007	202
37007	203
37007	251
37007	252
37007	501
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37007	503
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37007	505
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37007	701
37007	702
37007	703
37007	704
37008	010
37008	101
37008	201
37008	202
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37008	504
37008	505
37008	506
37008	507
37008	508
37008	509
37008	510
37008	511
37008	512
37008	701
37008	702
37008	703
37008	704

37009
TETJUJEV, B. A.
EXPERIMENTAL RESULTS OBTAINED DURING INVESTIGATION OF THE SYSTEM OF AUTOMATIC NAVIGATION ON STEAMER INZHENER A. PUSTOSHKIN. =
TRUDY C.N.I.I. MORSKOGO FLOTA 55, 1964, P. 52-63

THIS IS A DETAILED ARTICLE ON THE TITLE TOPIC. A METHOD IS DESCRIBED TO DERIVE THE DRIVING FUNCTION OF THE SHIP (AND ITS PARAMETERS) FROM EXPERIMENTALLY MEASURED INVERSE AMPLITUDE-PHASE CHARACTERISTICS. IT IS SHOWN THAT THE DRIVING FUNCTION DEPENDS STRONGLY ON LOAD AND SPEED OF THE SHIP. OPTIMUM PERFORMANCE CONDITIONS OF THE AUTO NAVIGATION SYSTEM ARE CONSIDERED.

SHIPS, NAVIGATION SYSTEMS
NAVIGATION SYSTEMS, SHIPS
SHIPS, SYSTEMS
SYSTEMS, SHIPS

37010
MELKOV, P. I.
RUBLEV, P. A.
APPLICATION INFRARED DEVICES IN ICE RECONNAISSANCE. (IN PRIMENENIE RADIOFIZICHESKIKH METODOV, P. 95-108). =
ARKT. I ANTARKT. N. I. INSTITUT, LENINGRAD 1965

THIS IS A DETAILED ARTICLE ON USE OF INFRARED BEAM DEVICES FOR AIR RECONNAISSANCE OF ICE CONDITIONS. THE DEVICES MEASURE THE AMOUNT OF HEAT RADIATION BY VARIOUS OBJECTS AND HAVE A GOOD ACCURACY FOR THE ICE OBSERVATION PURPOSES. ICE CONDITIONS, FORECAST
MEASUREMENT EQUIPMENT
EQUIPMENT, MEASUREMENT

37011
RICHTER, J.
ON COURSE REGULATION OF SHIPS. =
JAHRBUCH DER SCHIFFBAUTECHN. GESELLSCHAFT, 54, 1960, P. 175-194

THIS IS AN EXTENSIVE AND DETAILED THEORETICAL ARTICLE ON THE TITLE TOPIC. THE TIME RESPONSE OF THE SHIP TO THE INSTANTANEOUS MOTION OF THE RUDDER IS INVESTIGATED UNDER VARIOUS CONDITIONS.

SHIPS, NAVIGATION
NAVIGATION, SHIPS
SHIPS, RUDDERS
RUDDERS, SHIPS
SHIPS MOTION
MOTION, SHIPS

37009	010
37009	101
37009	201
37009	202
37009	203
37009	201
37009	202
37009	501
37009	502
37009	503
37009	504
37009	505
37009	506
37009	507
37009	508
37009	701
37009	702
37009	703
37009	704
37010	011
37010	101
37010	102
37010	201
37010	202
37010	203
37010	251
37010	252
37010	501
37010	502
37010	503
37010	504
37010	505
37010	701
37010	702
37010	703
37011	011
37011	101
37011	201
37011	251
37011	252
37011	501
37011	502
37011	503
37011	504
37011	505
37011	701
37011	702
37011	703
37011	704
37011	705
37011	706

74

55001

DOROKHOV, A.

LINE ICEBREAKER LENINGRAD. =

MORSKOJ FLOT, 22, OCT 1962, PP. 30-32

THIS IS THE SECOND ICEBREAKER OF THE MOSKVA CLASS, BUILT AT WARTSILA INC. IN FINLAND. THE ARTICLE DESCRIBES IN DETAIL ALL IMPORTANT TECHNICAL DATA EXCEPT FOR MATERIALS WHICH WERE USED. TOTAL DISPLACEMENT OF THE ICEBREAKER IS 13,290 TONS, MACHINERY OUTPUT 26,000 H.P. IT SATISFIES THE SPECIFICATIONS OF CLASS 100 AL OF THE LLOYD REGISTER OF SHIPPING AND PERTAINING SOVIET SPECIFICATIONS. IT IS ASSIGNED TO THE NORTHERN POLAR SEA WAY. TRANSLATION RECOMMENDED.

MOSKVA CLASS

ICEBREAKER LENINGRAD

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LENINGRAD ICEBREAKER
ICEBREAKERS, DESIGN
DESIGN, ICEBREAKERS
ICEBREAKERS, POLAR
POLAR ICEBREAKERS
55002
LANDTMAN, CH.

TECHNICAL VIEWPOINTS ABOUT MODERN LARGE ICEBREAKERS.=

JAHRBUCH DER SCHIFFBAUTECHNISCHEN GESELLSCHAFT
, 55, 1961, PP. 142-174

THIS IS A VERY USEFUL AND EXTENSIVE REVIEW OF
VARIOUS ASPECTS OF ICEBREAKER DESIGN. BOTH GEN
ERAL CONSIDERATIONS AND IMPORTANT DETAILS ARE
INCLUDED. SPECIAL ATTENTION IS GIVEN TO SHIPS
BUILT IN FINLAND.

THREE TYPES OF ICEBREAKERS ARE CONSIDERED--HAR
BOR, BALTIC SEA AND POLAR ICEBREAKERS RESPECTI
VELY. THE FIRST TYPE IS MENTIONED ONLY BRIEFLY

. THE REMAINING TWO TYPES ARE DISTINGUISHED BY
SIZE, MACHINERY OUTPUT, ETC. BUT MAINLY BY TH
E FACT THAT THE SEA TYPE HAS BOTH FORWARD AND
AFT PROPELLERS WHILE THE POLAR TYPE HAS ONLY T
HE AFT ONES.

ICEBREAKERS, DESIGN
DESIGN, ICEBREAKERS
ICEBREAKERS, POLAR
POLAR ICEBREAKERS
ICEBREAKERS, SEA
SEA ICEBREAKERS
MOSCOW CLASS

55003
FARENGOLC, I.V.

RESEARCH ICEBREAKER FUDJI.=

SUDOSTROENIE, 38, AUG 1966, PP. 16-17

A BRIEF DESCRIPTION OF A NEW SHIP WHICH SHALL
JOIN THE JAPANESE ANTARCTIC EXPEDITION.

THE HULL STRUCTURE HAS DOUBLE SIDES, AND STEEL
WITH HIGHER YIELD STRENGTH IS USED AT WATERLI
NE. THE USUAL RATIO OF LENGTH (100 M) TO WIDT
H (22 M) IS MAINTAINED, BUT THE HULL IS EGGSHA
PED FOR IMPROVED RESISTANCE AGAINST ICE PRESSU
RE. THE ICE KNIFE CONTAINS 30 DEGREES WITH A
HORIZONTAL LINE. THREE HEELING TANKS (123, 75
AND 94 TONS) ARE FURNISHED BY TWO PUMPS PER 4
500 TONS PER HOUR. TWO TRIMMING TANKS (199 AN
D 177 TONS) WITH A PUMP 1,200 TONS PER HOUR.

THREE DAMPING TANKS (142, 29 AND 66 TONS) ARE
PROVIDED ALSO. THE MAIN PROPULSION UNIT CONSI
STS OF FOUR 3,600 H.P. DIESEL-ELECTRIC GENERAT
ORS. THE TOTAL OUTPUT IS 12,000 H.P. THE CRE
W CONSISTS OF 182 AND OF 40 SCIENTISTS. THE S
TERN CONTAINS A HELIPORT WITH 4 TONS OF CAPACI
TY AND A DECK HANGAR. TRAVEL DISTANCE AT ECON
OMY SPEED--15,000 MILES.

ICEBREAKER FUDJI
FUDJI ICEBREAKER

ICEBREAKERS, DESIGN
DESIGN, ICEBREAKERS
55004

55001	703
55001	704
55001	705
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55001	707
55002	010
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55003	703
55003	704
55004	010

TIEDEMANN, J.

ICEBREAKER KARHU.=

SCHIFF UND HAFEN, 10, NOV 1958, PP. 2-12

THE ICEBREAKER KARHU IS DESCRIBED IN A BROADER CONNECTION WITH THE DEVELOPMENT OF ICEBREAKER PRODUCTION IN FINLAND. PAST AND PRESENT HISTORY AND DESCRIPTION OF TEN ICEBREAKERS USED IN FINLAND FROM 1890 TILL 1959 IS GIVEN. THE FOUR MOST RECENT MODELS WERE BUILT IN FINLAND IN 1939, 1953, 1958 (KARHU) AND IN 1959 (MURTAJA). THE LAST TWO ARE IDENTICAL. HOWEVER, ALMOST 40 ICEBREAKERS UP TO 22,000 H.P. (THE MOSKVA CLASS) WERE BUILT BY SANDVIKENS SKIPPSDOCKA IN HELSINGFORS, FINLAND FROM 1938 TO 1960. THE KARHU AND MURTAJA ICEBREAKERS ARE DRIVEN BY 2 FORWARD AND 2 AFT PROPELLERS, PROPORTION OF POWER IS APPROXIMATELY 3:1 AND MAY BE REVERSED. TOTAL OUTPUT OF THE FOUR DIESEL-ELECTRIC UNITS IS 7,500 H.P. THE PROPULSION FACILITY IS DESCRIBED IN DETAIL. THE SAME IS TRUE FOR DESCRIPTION OF OTHER MECHANICAL EQUIPMENT, CONTROLS AND FURNISHINGS. GENERAL DATA AND DRAWINGS ARE SHOWN AND DISCUSSED AT LENGTH.

THE HULL STRUCTURE CONSISTS OF TEN COMPARTMENTS AND IS DESCRIBED ONLY SHORTLY. IT SATISFIES

THE CLASS +100 A 1 ICEBREAKER SPECIFICATIONS OF THE LLOYDS REGISTER AND ALSO THE HIGHEST FINNISH ICE CLASS IA. IT IS ALMOST COMPLETELY WELDED, MAXIMUM PLATE THICKNESS 1.2 IN. NO MATERIAL OR WELDING PROCEDURE DATA IS GIVEN.

ICEBREAKER KARHU

KARHU ICEBREAKER

ICEBREAKERS, FINLAND

FINLAND ICEBREAKERS

ICEBREAKERS, HISTORY

HISTORY, ICEBREAKERS

ICEBREAKERS, CONSTRUCTION

CONSTRUCTION, ICEBREAKERS

55005

ANONYMOUS

DANBJORN ICEBREAKER WITH NEW B + W VEE-TYPE ENGINES.=

SHIPPING WORLD AND SHIPBUILDER, 7, OCT 1965, P. 72-76

DESCRIPTION OF THE DANBJORN ICEBREAKER IS GIVEN. TOTAL MACHINERY OUTPUT AMOUNTS TO 10,500 S.H.P., DISPLACEMENT IS 3,685 TONS, SPEED IN OPEN WATER IS 18 KNOTS. MORE DATA IS GIVEN.

ACCORDING TO NORWEGIAN VERITAS, THE ICEBREAKER IS CONSTRUCTED AS A ONE COMPARTMENT SHIP, THE STEEL STRUCTURE IS FULLY WELDED, PLATE THICKNESSES UP TO 1.25 IN. WERE USED. THERE ARE TWO FORWARD AND TWO AFT PROPELLERS POWERED BY A DIESEL-ELECTRIC UNIT. THIS CONSISTS OF SIX V-12 CYLINDER ENGINES WITH 1,370 K.W. GENERATORS. FOUR OF THESE DRIVE THE AFT PROPELLERS AND TWO THE FORWARD ONES. HEELING PUMPS, REMOTE CONTROL OF MACHINERY AND AUTOMATIC RECORDING INSTRUMENTS ARE BRIEFLY MENTIONED.

ICEBREAKER DUNBJORN

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55005	701

DONEJORN ICEBREAKER
ICEBREAKERS, PROPULSION
PROPULSION, ICEBREAKERS
ICEBREAKERS, ENGINES
ENGINES, ICEBREAKERS
55006

NEGANOV, V. I.

GNESIN, V. JA.

NUCLEAR ICEBREAKER LENIN IN THE ARCTIC.=

SUDOSTROENIE, 27, AUG 1961, PP. 2-7

THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER
OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN
IN ONLY.

IT DESCRIBES BASIC FEATURES AND SOME TECHNICAL
DATA OF THE ICEBREAKER WITHOUT MUCH DETAIL. THE
EXPERIENCE OF THE FIRST ARCTIC NAVIGATION IS
MENTIONED, AND MANY GLORIFYING COMMENTS ARE
INCLUDED. TRANSLATION OPTIONAL.

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, OPERATION

OPERATION, ICEBREAKERS

55007

STEPANOVICH, A. N.

FIRST ARCTIC NAVIGATION OF THE ICEBREAKER LENIN.=

SUDOSTROENIE, 27, AUG 1961, PP. 8-10

THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER
OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN
IN ONLY.

IT DESCRIBES THE EXPERIENCE OF THE FIRST NAVIGATION
OF THE ICEBREAKER IN ARCTIC IN WINTER 1960-61. FIRST,
THE GENERAL ICE SITUATION IS REVIEWED. SUBSEQUENTLY,
THE WORK OF POWER FACILITY, SHIP SYSTEMS, AND OF ELECTRIC
EQUIPMENT IS EVALUATED. PROTECTION AGAINST RADIATION IS
ALSO MENTIONED. THE ARTICLE CONTAINS RATHER GENERAL,
SOMETIMES GLORIFYING COMMENTS. TRANSLATION OPTIONAL.

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, OPERATION

OPERATION, ICEBREAKERS

ICEBREAKERS, SYSTEMS

SYSTEM, ICEBREAKERS

55008

BURNAZJAN, A. I.

GORDINSKIJ, S. M.

KAMYSHENKO, I. D.

NEFEDOV, JU. G.

PRAVECKIJ, V. N.

PROTECTION AGAINST RADIATION ON THE NUCLEAR
ICEBREAKER LENIN.=

SUDOSTROENIE, 27, AUG 1961, PP. 11-14

THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER
OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN
IN ONLY.

IT DEALS IN DETAIL WITH VARIOUS SAFETY ASPECTS
AND RADIATION PROBLEMS CONNECTED WITH THE NUCLEAR
PROPULSION OF THE LENIN. IT IS CONCLUDED

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FROM NUMEROUS MEASUREMENTS PERFORMED THAT THERE IS NO RADIATION DANGER EITHER FOR THE CREW OR IN THE ADJACENT WATER.

TRANSLATION AVAILABLE OTS 62-11-111, JPRS12183, 29 JAN 1962.

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, RADIATION CONTROL

RADIATION CONTROL, ICEBREAKERS

55009

ARNOLD, O.A.

ARCHITECTONIC DESIGN OF INTERIORS ON THE NUCLEAR ICEBREAKER LENIN.=

SUDOSTROENIE, 27, AUG 1961, PP. 14-18

THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN ONLY.

IT DESCRIBES IN DETAIL THE DESIGN OF CABINS, DINING ROOM, CLUB, MUSICAL ROOM AND OF OTHER SOCIAL FACILITIES OF THE ICEBREAKER. MATERIALS,

COLORS AND VARIOUS DETAILS OF CONSTRUCTION ARE GIVEN. LOCATION OF ALL DESCRIBED ROOMS IS SHOWN ON SKETCHES AND SOME PHOTOGRAPHS OF INTERIORS ARE INCLUDED. SPECIAL ATTENTION IS GIVEN

TO PROBLEMS ASSOCIATED WITH LONG NAVIGATION PERIODS. TRANSLATION OPTIONAL.

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

55010

AGAFONOV, N.A.

ELECTRIC POWER EQUIPMENT OF THE ICEBREAKER LENIN.=

SUDOSTROENIE, 27, AUG 1961, PP. 30-33

THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN ONLY.

IT DESCRIBES IN DETAIL AUXILIARY POWER EQUIPMENT OF THE LENIN. THE PROPULSION-EQUIPMENT HAS BEEN DESCRIBED EARLIER BY THE SAME AUTHOR. FIRST, INDIVIDUAL APPLIANCES AND THEIR ENERGY CONSUMPTION IS GIVEN. THE TOTAL AMOUNTS TO 10,000 KW, MORE THAN 43% OF IT ALLOWS FOR THE NUCLEAR STEAM GENERATION UNIT. THEN BASIC PRINCIPLES OF DESIGN, ELEMENTS AND THE GENERAL DIAGRAMATIC PLAN ARE DISCUSSED. TRANSLATION AVAILABLE OTS 62-11-111, JPRS12183, 29 JAN 1962.

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, POWER EQUIPMENT

POWER EQUIPMENT, ICEBREAKERS

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

55011

BEREZIN, P.P.

NEW DESIGN FEATURES OF NETWORKS ON THE NUCLEAR ICEBREAKER LENIN.=

SUDOSTROENIE, 27, AUG 1961, PP. 34-38

THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER

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55011	501

OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN ONLY.

IT DESCRIBES VARIOUS NEW DESIGN FEATURES OF NETWORKS WHICH WERE MADE NECESSARY BY ARCHITECTONIC DESIGN OF INTERIORS, BY SPECIAL MAINTENANCE AND REPAIR REQUIREMENTS AND BY OTHER FACTORS RESULTING FROM LONG NAVIGATION PERIODS. IN PARTICULAR, WATER SYSTEMS, AIR CONDITIONING SYSTEMS, ICEBREAKING SYSTEMS (HEELING AND TRIMMING TANKS AND PUMPS) AND NUCLEAR POWER PLANT SYSTEMS ARE DESCRIBED. TRANSLATION AVAILABLE OTS 62-11-111, JPRS12183, 29 JAN 1962.

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, SYSTEMS

SYSTEMS, ICEBREAKERS

55012

NOSOV, N.S.

BEREZIN, P.P.

FIRE SAFETY SYSTEMS ON THE NUCLEAR ICEBREAKER LENIN.=

SUDOSTROENIE, 27, AUG 1961, PP. 39-40

THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN ONLY.

IT DESCRIBES BRIEFLY THE MAIN DESIGN PRINCIPLES OF FIRE PROTECTION AND DETECTION SYSTEMS OF THE ICEBREAKER. AS A MAIN FIRE INSULATION MATERIAL, MINERAL FELT PADS PROTECTED BY ALUMINUM

FOILS WERE USED. IT WAS TESTED SUCCESSFULLY AT TEMPERATURES UP 920 C. TRANSLATION OPTIONAL

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, FIRE PROTECTION

FIRE PROTECTION, ICEBREAKERS

55013

ANONYMOUS

NUCLEAR ICEBREAKER LENIN.=

SUDOSTROENIE, 25, JAN 1959, PP. 26-33

THIS IS A DETAILED ARTICLE ABOUT THE LENIN ICEBREAKER. IT DESCRIBES THE FOLLOWING SUBJECTS

THE HULL, MAIN AND AUXILIARY EQUIPMENT INCLUDING MANY OF PROPULSION UNITS AND AUXILIARY POWER PLANTS, FIRE PROTECTION, PUMPS AND WATER SYSTEMS, HEATING AND AIR-CONDITIONING, HELM EQUIPMENT, BOATS, LOADING EQUIPMENT, NAVIGATION, CONTROL AND COMMUNICATION SYSTEMS, LIVING QUARTERS AND MANY OTHERS.

UNLIKE OTHER SIMILAR ARTICLES, THIS ONE REFRAINS FROM GENERAL AND GLORIFYING COMMENTS AND PROVIDES USEFUL INFORMATION. TRANSLATION AVAILABLE OTS 59-13, 527, JPRS 1591-N, 21 MAY 1959.

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

ICEBREAKERS, SYSTEMS

SYSTEMS, ICEBREAKERS

55014

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55014	010

VASILEVSKII, A.N.

A NEW HARBOR ICEBREAKER.=

SUDOSTROENIE, 26, JAN 1960, PP. 6-8

A NEW ICEBREAKER DESIGNED FOR BOTH HARBOR AND LINE SERVICE IS DESCRIBED. IT BELONGS TO THE INTERMEDIATE CLASS, HAVING ONE FORWARD AND TWO AFT PROPELLERS AND A DIESEL-ELECTRIC FACILITY OF TOTAL OUTPUT 5400 HP. THE DESCRIPTION IS RATHER DETAILED, AND IT CONTAINS ALSO COMPARATIVE DATA OF TEN OTHER PARTLY RUSSIAN ICEBREAKERS OF SIMILAR SIZE. THE GENERAL ARRANGEMENT OF CONSTRUCTION IS MENTIONED, INCLUDING SOME INFORMATION ON MATERIALS USED. HOWEVER, NO INFORMATION ON ALLOY STEELS WHICH HAVE BEEN USED IS DISCLOSED. THE POWER UNIT AND ITS POSSIBLE SERVICE ARRANGEMENTS ARE DISCUSSED. TRANSLATION RECOMMENDED.

LEDOKOL CLASS

ICEBREAKERS, HARBOR

HARBOR, ICEBREAKERS

RUSSIAN ICEBREAKERS

ICEBREAKERS, RUSSIAN

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

ICEBREAKERS, CONSTRUCTION

CONSTRUCTION, ICEBREAKERS

55016

MAKLAKOV, N.T.

ICEBREAKING CARGO SHIPS FOR THE ARCTIC.=

SUDOSTROENIE, 27, JAN 1961, PP. 4-9

THE ARTICLE DESCRIBES IN DETAIL TWO NEW TYPES OF CARGO ICEBREAKERS ANGARA (4 X 2050 HP) AND AMGUEMA (4 X 1800 HP). ATTENTION IS GIVEN TO DESIGN PHILOSOPHY, STRUCTURE, ICEBREAKING CAPACITY (7 FT. OF ICE THICKNESS OR 110 TONS PER METER OF LOAD ALONG THE ENTIRE CONTOUR), EXPLOITATION AND EFFICIENCY FEATURES, POWER EQUIPMENT AND AUTOMATION EQUIPMENT. MANY DRAWINGS AND TABLES ARE INCLUDED. TRANSLATION RECOMMENDED.

ICE-GOING CARGO SHIPS

CARGO SHIPS, ICE-GOING

ANGARA ICE-GOING SHIP

ICE-GOING SHIP ANGARA

AMGUEMA ICE-GOING SHIP

ICE-GOING SHIP AMGUEMA

ICE-GOING SHIPS, DESIGN

DESIGN, ICE-GOING SHIPS

ICE-GOING SHIPS, CONSTRUCTION

CONSTRUCTION, ICE-GOING SHIPS

55017

KHEJSIN, D.E.

STRENGTH DETERMINATION OF STRUCTURES OF ICEBREAKING SHIPS BY CONVERSION FROM A PROTOTYPE.=

SUDOSTROENIE, 27, JAN 1961, PP. 9-14

THE METHOD DESCRIBED EXTENDS THAT OF JU. A. SHIMANSKIY (1938) AND ENABLES TO COMPUTE STRENGTH OF ICEBREAKER STRUCTURES BY COMPARISON WITH A PROTOTYPE. THE PROCEDURE IS OUTLINED IN CONSIDERABLE DETAIL FOR THE CASE OF ICE PRESSURE ON HULL SIDES DURING SHIP MOTION AND FOR THE C

55014	101
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ASE COMPRESSION OF THE SHIP IN ICE. RECOMMENDATIONS FOR PRACTICAL COMPUTATION ARE LISTED. AN ILLUSTRATIVE EXAMPLE IS WORKED OUT. TRANSLATION RECOMMENDED.

ICEBREAKERS, CONSTRUCTION
CONSTRUCTION, ICEBREAKERS

ICEBREAKERS, MODELS
MODELS, ICEBREAKERS

ICEBREAKERS, DESIGN
DESIGN, ICEBREAKERS

55018

MESEUDNOV, V.M.

FADDEEV, G.V.

1
REQUIREMENTS OF CLASSIFICATION REGISTERS ON
STRENGTH OF SHIPS NAVIGATING IN ICE.=

SUDOSTROENIE, 28, JAN 1962, PP. 7-10

THIS IS A VERY USEFUL ARTICLE WHICH COMPARES BASIC STRUCTURAL REQUIREMENTS OF TEN REGISTERS ON CARGO SHIPS NAVIGATING IN ICE. REQUIREMENTS OF THE FOLLOWING REGISTERS ARE INCLUDED SEA

REGISTER OF THE USSR (1956), LLOYD REGISTER OF SHIPPING (1958), BUREAU OF SHIPS (1959), NORWEGIAN VERITAS (1958) AND OF SIMILAR ORGANIZATIONS IN FINLAND (1958), FRANCE (1959), GERMANY (1956), JAPAN (1956), POLAND (1957) AND ITALY (1956). A DETAILED COMPARATIVE TABLE IS INCLUDED AND INDIVIDUAL CLASSES ARE BRIEFLY DISCUSSED. AN EXAMPLE SHOWS A HYPOTHETICAL 10 000 TON SHIP AND EVALUATES ITS STRENGTH CHARACTERISTICS ACCORDING TO DIFFERENT REQUIREMENTS. IT APPEARS THAT THE TOP CLASSES OF THE ENGLISH LLOYD AND OF THE USSR REGISTER ARE SUPERIOR TO THE GERMAN, NORWEGIAN AND JAPANESE CLASSES. TRANSLATION RECOMMENDED.

ICE-GOING SHIPS, SPECIFICATIONS
SPECIFICATIONS, ICE-GOING SHIPS
ICE-GOING SHIPS, CONSTRUCTION
CONSTRUCTION, ICE-GOING SHIPS

55019
EVTEEV, V.P.

USE OF COMPUTERS IN SHIPBUILDING.=

SUDOSTROENIE, 29, MAR 1963, P. 57

TWO SHORT SUMMARIES OF ENGLISH ARTICLES ARE GIVEN. THE FIRST ONE DESCRIBES A COMPUTER-OPERATED MODELING DEVICE WHICH IS USED FOR DESIGN OF NAVIGATION SYSTEMS OF AMERICAN NUCLEAR SUBMARINES. ORIGINAL REFERENCE ELECTRONICS, 35, NO. 12, 1962.

THE SECOND ONE DEALS WITH USE OF COMPUTERS IN SHIP TURBINE DESIGN. ORIGINAL REFERENCE MARINE ENGR. AND NAVAL ARCH., 85, NO. 1035, 1962.

COMPUTERS, USE
SUBMARINES, NAVIGATION SYSTEMS

NAVIGATION SYSTEMS, SUBMARINES
PROPULSION SYSTEMS, SHIPS

SHIPS, PROPULSION SYSTEMS
55020

DOROKHOV, A.P.

THE ICEBREAKER MOSKVA.=

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55020	201

SUDOSTROENIE, 26, OCT 1960, PP. 1-5
THIS IS A VERY IMPORTANT ARTICLE WHICH DESCRIBES IN DETAIL ALL IMPORTANT TECHNICAL DATA OF THE ICEBREAKER MOSKVA WHICH WAS BUILT IN FINLAND IN 1960. IT MENTIONS ALSO MATERIALS AND WELDING PROCEDURES. TRANSLATION RECOMMENDED.

MOSKVA ICEBREAKER
ICEBREAKER MOSKVA
MOSKVA CLASS
POLAR ICEBREAKERS
ICEBREAKERS, POLAR
ICEBREAKERS, DESIGN
DESIGN, ICEBREAKERS
55021

UKHIN, S.I.

A BOAT FOR SHIPS NAVIGATING IN ICE.=
SUDOSTROENIE, 26, JUN 1960, PP. 30-32
THE ARTICLE DESCRIBES A SERVICE BOAT WHICH IS USED ON ICEBREAKER LENIN. IT IS 35 FT. LONG, 11 FT. WIDE, CARGO CAPACITY 8.2 TONS, WATER DISPLACEMENT 10.5 TONS, SPEED 7 KNOTS, OPERATION RANGE (RADIUS) 85 MILES, PROPULSION CAPACITY 7.5 HP. IT HAS WELDED STEEL STRUCTURE, DIESEL PROPULSION, SUFFICIENT THERMAL INSULATION, ET C. RADIO AND NAVIGATION FACILITIES ARE ALSO DESCRIBED.

THE BOAT HAS BEEN DESIGNED TO SERVE IN DIFFICULT POLAR CONDITIONS. IT HAS ALSO LIMITED ICEBREAKING CAPACITY, AND IT OPERATED SUCCESSFULLY IN 2 IN. OF ICE. TRANSLATION OPTIONAL.

ICEBREAKER LENIN
LENIN ICEBREAKER
ICEBREAKERS, BOATS
BOATS, ICEBREAKERS
BOATS, DESIGN
DESIGN, BOATS
55022

LANE, R.B., JR.

INFLUENCE OF ARCTIC OPERATIONS ON FUTURE SHIP DESIGN.=

AMERICAN SOCIETY OF NAVAL ARCHITECTS, 1947, PP. 139-145

THE ARTICLE DESCRIBES THE HISTORY OF FIRST AMERICAN ICEBREAKERS (NORTHWIND CLASS), BUILT FOR THE U. S. COAST GUARD. USE OF THESE ICEBREAKERS BY RUSSIANS DURING THE WWII AND PERFORMANCE DATA ARE MENTIONED. THEN SOME GENERAL COMMENTS ON FUTURE ICEBREAKERS DESIGN AND ON CARGO SHIPS OPERATING IN ICE ARE INCLUDED.

AMERICAN ICEBREAKERS
ICEBREAKERS, HISTORY
HISTORY, ICEBREAKERS
ICEBREAKERS, DESIGN
DESIGN, ICEBREAKERS
ICEBREAKERS, AMERICAN
55023

MILANO, V.R.

NOTES ON ICEBREAKER DESIGN.=

J. AMER. SOC. NAVAL ENGRS., FEB 1962, PP. 43-50

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THIS IS A PART OF THE AUTHOR'S M.C.T.H. 513. IT PRESENTS A SHORT ACCOUNT OF ICEBREAKING THEORY AND OF RESULTING RECOMMENDATIONS ON ICE CLASSIFICATION.

FIRST, IT GIVES MEAN SURFACE TEMPERATURES OF ICE IN VARIOUS POLAR AREAS. THIS MEAN SURFACE TEMPERATURE IS CONSIDERED AS A BASIS FOR COMPARISON OF MECHANICAL PROPERTIES OF ICE. A GRAPH OF VERTICAL FLOW FORCE VS. TEMPERATURE, COMPOSITION AND THICKNESS IS SHOWN. THEN PROPULSION MACHINERY AND THRUST PREDICTIONS ARE DISCUSSED WITH SPECIAL ATTENTION TO ZERO VELOCITY CONDITION. THE REMAINING PART IS DEVOTED TO ICEBREAKING THEORY, NAMELY TO ICEBREAKER MOTION IN ICE AND TO ITS ABILITY TO BREAK ICE.

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

ICE CHARACTERISTICS

ICEBREAKERS, CONSTRUCTION

CONSTRUCTION, ICEBREAKERS

ICEBREAKING, THEORY

THEORY, ICEBREAKING

55024

MILANO, V.R.

PRELIMINARY VESSEL ESTIMATES IN ICEBREAKER DESIGN.=

J. AMER. SOC. NAVAL ENGRS., AUG 1962, PP. 505-513

THIS PAPER HAS SOME FEATURES IN COMMON WITH REFERENCE 13052 BY THE SAME AUTHOR. IT DEALS WITH PRELIMINARY ESTIMATES OF VESSEL LENGTH AND DISPLACEMENT, OF BOLLARD PULL PER SHAFT AND OF VESSEL STABILITY. ALL ESTIMATES ARE BASED ON CONDITIONS RESULTING FROM INTERACTION OF THE BOW AND ICE AND HENCE RELATED TO ICE PROPERTIES. AN EXTENSIVE EXAMPLE OF A PRELIMINARY ESTIMATE IS GIVEN.

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

ICEBREAKERS, CONSTRUCTION

CONSTRUCTION, ICEBREAKERS

ICEBREAKING, THEORY

THEORY, ICEBREAKING

55025

ANONYMOUS

THE FUJI A NEW ANTARCTIC OBSERVATION SHIP.= JAPAN SHIPBUILDING AND MARINE ENGN., MAR 1966, PP. 42-44

THIS IS ANOTHER DESCRIPTION OF ICEBREAKER FUJI (C.F. REF. 55003). THE ARTICLE GIVES A CONDENSED DETAILED ACCOUNT OF TECHNICAL DATA OF THE ICEBREAKER. IN ENGLISH.

ICEBREAKER FUJII

FUJII ICEBREAKER

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

55026

WAAS, H.

ICEBREAKERS WITH PITCHING EQUIPMENT.=

VDI ZEITSCHRIFT, 101, NO. 32, NOV 11, 1959, PP. 1499-1502

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THIS IS A FIRST DRAFT ARTICLE SUMMARIZING THE WORK WHICH HAS BEEN DONE SINCE 1933. MAINLY IN GERMANY, ON PITCHING EQUIPMENT FOR ICEBREAKERS. SUCH EQUIPMENT CONSISTS USUALLY OF TWO ECCENTRIC WIGHTS, ROTATING AROUND THE SAME HORIZONTAL AXIS BUT IN OPPOSITE DIRECTIONS. HENCE A VERTICAL OSCILLATING FORCE OF PRESCRIBED MAGNITUDE AND FREQUENCY IS PRODUCED. THIS EQUIPMENT REPLACES HEELING AND TRIMMING TANKS WHICH PRODUCE ONLY STATIC FORCES. THE DYNAMICS OF OSCILLATING FORCE MAINTAINS PARTLY THE NATURAL PITCH AND ROLL MOTION OF THE SHIP DURING ICEBREAKING AND VIRTUALLY DOUBLES THE ICEBREAKING CAPACITY OF A GIVEN SHIP.

ALTHOUGH SUCH EQUIPMENT HAD BEEN USED ONLY ON RELATIVELY SMALL ICEBREAKERS (3000 HP) AND TUGS, IT IS EXPECTED THAT LARGE ICEBREAKERS MAY BENEFIT AS WELL.

THE FORCED DYNAMIC MOTION OF THE SHIP IN ICE PRODUCES SOMEWHAT DIFFERENT REACTIONS FROM THE SURROUNDING ICE. HENCE, SLIGHTLY DIFFERENT BOW SHAPE IS REQUIRED, NAMELY, 15 DEGREE BOWSTEM SLOPE IS FAVORED. SOME EXAMPLE SECTIONS ARE SHOWN.

ICEBREAKERS, PITCHING EQUIPMENT

PITCHING EQUIPMENT, ICEBREAKERS

ICEBREAKERS, CONSTRUCTION

CONSTRUCTION, ICEBREAKERS

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

55027

ANONYMOUS

THE MACKINAW SECURES OPERATION SPRING.=

FAIRBANKS-MORSE NEWS, 23, NO. 4

THIS IS AN EXPOSITORY ARTICLE WHICH DESCRIBES AN ACTION OF U.S.C.G. ICEBREAKER MACKINAW AND OTHER VESSELS IN THE SPRING OF 1947 DURING WHICH SHIPPING LANES WERE OPEN ON GREAT LAKES AND IN JOINING CHANNELS.

ICEBREAKER MACKINAW

MACKINAW ICEBREAKER

ICEBREAKERS, OPERATION

OPERATION, ICEBREAKERS

55028

WAAS, H.

EFFICIENCY OF MECHANICAL PITCHING PLANTS INSTALLED IN ICEBREAKERS.=

SCHIFFBAUTECHNISCHE GESELLSCHAFT, NOV 1958, PP 2-17

THIS IS A MANUSCRIPT OF A LECTURE BY THE AUTHOR ON PITCHING EQUIPMENT FOR ICEBREAKERS (C.F. 12054). IT DESCRIBES EXTENSIVELY THE FAVORABLE EXPERIENCE WITH PITCHING EQUIPMENT ON ICEBREAKERS WISENT (BUILT IN 1952), LMSHORN (1955/56), EISFUCHS (1957) AND SEIDENSTEIN. ALTHOUGH THOSE ARE ONLY SMALL ICEBREAKERS (300 TONS, 1000 HP), THE EXPERIENCE SHOWS THAT THEY WERE CAPABLE OF PERFORMING LIKE VESSELS OF TWICE THAT SIZE. HENCE, IT IS NECESSARY TO EQUIP SUCH ICEBREAKERS WITH STRONGER HULLS.

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THE LECTURE FURTHER DISCUSSES THE THEORETICAL ASPECTS OF SHIP DESIGN WITH RESPECT TO PITCHING EQUIPMENT (VIBRATION ANALYSIS, OPTIMUM FREQUENCY AND AMPLITUDE, ETC.). IT IS EXPECTED THAT EVEN LARGE ICEBREAKERS MAY BE EQUIPPED WITH PITCHING EQUIPMENT.

THEORY OF ICEBREAKING IS BRIEFLY DISCUSSED, AND IT IS SHOWN THAT DYNAMICAL FORCES PRODUCED BY PITCHING EQUIPMENT ARE MORE EFFICIENT IN ICE BREAKING, CAPABLE OF BREAKING THICKER ICE AND OF PRODUCING SMALLER FLOES. RESULTS OF FIELD AND LABORATORY EXPERIMENTS ARE DISCUSSED.

FINALLY, EFFECTS ON CREW ARE DISCUSSED AND CONSIDERED AS NEGLIGIBLE. THE LECTURE SHOULD CONTAIN 15 FIGURES AND THREE MOVIES. NONE OF THESE IS ATTACHED TO THE MANUSCRIPT. IN ENGLISH.

ICEBREAKERS, PITCHING EQUIPMENT

PITCHING EQUIPMENT, ICEBREAKERS

GERMAN ICEBREAKERS

ICEBREAKING, THEORY

THEORY, ICEBREAKING

ICEBREAKERS, GERMAN

55029

ANONYMOUS

ICEBREAKER JOHN A. MACDONALD.=

SUDOSTROENIE, 27, JUL 1961, PP. 76-77

THIS IS A SHORT ABSTRACT ON THE TITLE SHIP. IT

GIVES BASIC DATA (15 000 HP, 3200 TONS, 95 METERS LONG, 21 METERS WIDE, MAX. 16 KNOTS, CRUISING RADIUS 10 000 MILES AT 10 KNOTS) AND BRIEF DESCRIPTION OF THE PROPULSION AND OTHER SYSTEMS. FOR ORIGINAL REFERENCE, SEE MARINE ENGINEERING (LOG, XII, VOL. XV, NO. 13, 1960 AND CANADIAN SHIPBUILDING XI, VOL. 32, NO. 2, 1960.

ICEBREAKER JOHN A. MACDONALD

JOHN A. MACDONALD ICEBREAKER

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

55030

SHIMANSKIY, JU.A.

MAKSIMADZHI, A.I.

KOROTKIN, JA.I.

NEW RULES FOR CLASSIFICATION AND CONSTRUCTION OF STEEL SEA SHIPS OF THE SEA REGISTER OF USSR.=

SUDOSTROENIE, 23, JAN 1957, PP. 4-10

THIS IS AN EXPERT CRITICAL EVALUATION OF THE NEW RULES OF 1956 WHICH WERE TO REPLACE THE 1940 ISSUE. IT CONTAINS MANY COMMENTS, SOME OF THEM BEING VERY CRITICAL. OBJECTIONS ARE CONCENTRATED MAINLY ON PROBLEMS OF HULL DESIGN, AND

CONSIDERABLE ATTENTION IS GIVEN TO USE OF STEELS WITH HIGHER MECHANICAL PROPERTIES. HERE THE RATIO OF ULTIMATE STRENGTH TO YIELD STRENGTH IS INTRODUCED IN THE RULES FOR USE IN DESIGN

FORMULAE. NATURALLY IN THE RULES THIS OBSCURE RECOMMENDATION IS SEVERELY CRITICIZED, ALSO BECAUSE IT WOULD DISCOURAGE FROM USE OF BETTER

STEELS. THERE ARE MANY OTHER COMMENTS WHICH INDICATE THAT THE RULES CONTAIN BOTH MODERN AND

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D OBSOLETE RECOMMENDATIONS.

SHIPS; SPECIFICATIONS

SPECIFICATIONS, SHIPS

REGISTER, RUSSIA

RUSSIA, REGISTER

SHIPS, DESIGN

DESIGN, SHIPS

55031

ANONYMOUS

ON THE NUCLEAR ICEBREAKER LENIN.=

SUDOSTROENIE, 25, NOV 1959, PP. 69-71

THIS IS A SHORT NOTE CONTAINING 8 PHOTOGRAPHS

OF THE ICEBREAKER, 5 OF THEM SHOW INTERIORS.

ICEBREAKER LENIN

LENIN ICEBREAKER

55032

TKACHUK, G.N.

FORMULAE FOR RESISTANCE COMPUTATION OF NICHE
S AND HOLES IN SHIP HULL.=

SUDOSTROENIE, 25, OCT 1959, PP. 9-13

THIS IS A DESCRIPTION OF EXPERIMENTAL AND THEO-
RETICAL STUDIES WHICH YIELD ROUGHNESS COEFFICI-
ENTS FOR COMPUTATION OF SHIP RESISTANCE. IN PA-
RTICULAR, VARIOUS NICHES OF RECTANGULAR SHAPES
ARE CONSIDERED.

RESISTANCE, FLUID DYNAMICS

FLUID DYNAMICS, RESISTANCE

55033

BREGMAN, V.I.

NUMERICAL INTEGRATION FORMULAE FOR USE IN CA-
LCULATIONS OF SHIP STRUCTURES ON COMPUTERS.=

SUDOSTROENIE, 25, FEB 1959, PP. 12-14

AFTER A SHORT SUMMARY OF PRESENT FORMULAE FOR
NUMERICAL INTEGRATION, THE ARTICLE NOTES SPECI-
AL REQUIREMENTS FOR INTEGRATION OF CERTAIN FUN-
CTIONS OF THE SHIP SURFACE ALONG THE SHIP LENG-
TH. THOSE REQUIREMENTS INCLUDE A SUFFICIENT
ACCURACY WITHOUT ADDITIONAL ORDINATES, LOCATIO-
N OF ORDINATES ON THEORETICAL FRAME AXES WHEN
20 SECTIONS ARE CONSIDERED. THE NUMBER OF ORD-
INATES SHOULD BE MINIMUM.

A SERIES FORMULA (2) IS GIVEN WITH COEFFICIENT
S WHICH ARE OBTAINED AS SOLUTIONS OF A SYSTEM
OF LINEAR ALGEBRAIC EQUATIONS (3). ALL DETAIL
S ARE GIVEN. AS AN EXAMPLE, AREAS AND CENTERS
OF GRAVITY ARE EVALUATED FOR A SET OF ALGEBRA-
IC CURVES. ALTOGETHER 7 FORMULAE WITH VARIOUS
NUMBER OF ORDINATES ARE COMPARED. THOSE DEVE-
LOPED IN THIS ARTICLE SHOW BEST ACCURACY WITH
THE LOWEST NUMBER OF ORDINATES. TRANSLATION O-
PTIONAL.

MATHEMATICAL METHODS

METHODS, MATHEMATICAL

COMPUTERS, USE

SHIPS, DESIGN

DESIGN, SHIPS

55034

SMOLJAKOV, B.N.

DETERMINATION OF MINIMUM THICKNESS OF HULL S-
HELL MADE OF A HIGHER-STRENGTH STEEL.=

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SUDOSTROENIE, 29, FEB 1962, PP. 7-12
 THIS ARTICLE CONTAINS RECOMMENDATIONS AND TABLES FOR SELECTION OF SHEET THICKNESS FOR VARIOUS PARTS OF HULL STRUCTURE OF RIVER AND SEA CARGO SHIPS RESPECTIVELY. WHILE ATTENTION IS PAID TO RULES OF THE SHIPPING REGISTER OF U.S.S.R. (AND AN OBSOLETE FORMULA FOR THICKNESS REDUCTION IS CONSIDERED, C.F. 55030) DEVIATIONS ARE ALLOWED WITH RESPECT TO CORROSION RESISTANCE, ETC.

HIGH STRENGTH STEELS
 STEELS, HIGH STRENGTH
 SHIPS, DESIGN
 DESIGN, SHIPS

55035

STARSHINOV, V.A.

EXPERIENCE OBTAINED FROM APPLICATION OF RUBBER TUG BUMPERS ON ICEBREAKERS.=

SUDOSTROENIE, 28, FEB 1962, PP. 57-59

THIS IS A SHORT BUT REASONABLY DETAILED DESCRIPTION OF THE TITLE TOPIC. IT IS RECOGNIZED THAT DURING TOWING AND ICEBREAKING OPERATIONS, THERE IS A DANGER OF COLLISION OF SHIPS. HENCE, ICEBREAKERS HAVE TO BE EQUIPPED WITH SUITABLE SAFETY EQUIPMENT. RUBBER BUMPERS WHICH ARE USUALLY USED ON TUGS MAY SERVE FOR THAT PURPOSE. SOME ADJUSTMENTS ARE NECESSARY FOR USE ON ICEBREAKERS. THOSE ARE DESCRIBED (INCLUDING DIMENSIONS) AND A GENERAL DRAWING IS SHOWN. IT IS REPORTED THAT SUCH BUMPERS WERE SUCCESSFULLY USED ON ICEBREAKER LENIN. TRANSLATION OPTIONAL.

ICEBREAKERS, FENDERS
 FENDERS, ICEBREAKERS
 SHIPS, SAFETY EQUIPMENT
 SAFETY EQUIPMENT, SHIPS
 ICEBREAKER LENIN
 LENIN ICEBREAKER

55036

GUNDORIN, A.A.

ICEBREAKER SIBIR IN THE ARCTIC.=

SUDOSTROENIE, 28, APR 1962, P. 81

THIS IS A VERY BRIEF NOTE ON THE TITLE ICEBREAKER. IT WAS COMPLETELY REBUILT IN 1959. CONSIDERABLE PORTION OF STRUCTURAL PARTS (3000 TONS) WAS REPLACED, AND THE ORIGINAL COAL WAS CHANGED TO A LIQUID FUEL. THE ICEBREAKER HAS NOW 12 000 HP. 8326 TONS DISPLACEMENT, SPEED 13.9 KNOTS AND PERIOD OF INDEPENDENT OPERATION HAS BEEN INCREASED FROM 25 TO 52 WEEKS.

ICEBREAKER SIBIR
 SIBIR ICEBREAKER
 ICEBREAKERS, MODERNIZATION
 MODERNIZATION, ICEBREAKERS

55037

NOGID, L.M.

DUBROVIN, D.V.

ON VISCOUS RESISTANCE OF ICEBREAKERS.=

SUDOSTROENIE, 28, JUN 1962, PP. 10-14

THIS IS AN EXTENSIVE AND DETAILED DESCRIPTION

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OF EXPERIMENTS WHICH WERE PERFORMED IN THE LOM
INGRAD SHIPBUILDING INSTITUTE. COALED MODELS
FROM 1/100 TO 1/25 OF THE ICEBREAKER SIBIR WER
E TESTED IN A TANK BOTH IN CLEAN WATER AND IN
ICE MADE OF PARAFFINE. THE RESULTS HAVE SHOWN
THAT FOR SIZES FROM 1/60 TO 1/25, THE RESULTS
ARE CONSISTENT. RESISTANCE COEFFICIENTS AND O
THER DATA HAVE BEEN MEASURED AND GENERALIZED.

TRANSLATION RECOMMENDED.

ICEBREAKERS, MODELS

MODELS, ICEBREAKERS

ICEBREAKER SIBIR

SIBIR ICEBREAKER

RESISTANCE, FLUID DYNAMICS

FLUID DYNAMICS, RESISTANCE

55038

ANONYMOUS

AN ICEBREAKING SHIP FOR LAYING AND REPAIRING
OF UNDERWATER CABLES.=

SUDOSTROENIE, 28, NOV 1962, PP. 74-75

THIS IS A SHORT SUMMARY OF AN ENGLISH ARTICLE
ON THE TITLE SHIP BUILT IN CANADA. FOR ORIGIN
AL REFERENCE, SEE SHIPBUILDING AND SHIPPING R
ECORD, 99, NO. 14, 1962.

ICE-GOING SHIPS

SHIPS, ICE-GOING

55039

RUBJAKIN, A.A.

DETERMINATION OF THE DIAMETER OF A RUDDER SH
AFT FOR ICEBREAKERS AND ICEBREAKING SHIPS.=

SUDOSTROENIE, 23, DEC 1962, PP. 13-15

THIS IS A SHORT BUT DETAILED ARTICLE. IT IS R
ECOGNIZED THAT RUDDER SHAFTS ARE OFTEN BENT WH
EN INTERACTING WITH ICE. HENCE, DESIGN MUST I
NCLUDE SUFFICIENT SAFETY AGAINST BENDING. SIM
PLE FORMULAE FOR DESIGN ARE GIVEN AND A NUMBER
K DETERMINING THE RELATIVE STRENGTH IS DERIVE
D. IT IS SHOWN THAT ICEBREAKERS WITH K 6 SU
FFERED SHAFT DAMAGE. A TABLE THEN SHOWS COMPA
RATIVE DATA (SHAFT DIAMETER AND YIELD STRENGTH
, AREA, AND CENTER OF GRAVITY OF THE RUDDER, S
PEED, NUMBER OF SHAFTS AND K) FOR 17 CLASSES O
F RUSSIAN ICEBREAKERS AND ICEBREAKING SHIPS.
10 OF THEM HAVE K 6. TRANSLATION RECOMMENDE
D.

ICEBREAKERS, RUDDERS

RUDDERS, ICEBREAKERS

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

55040

SMOLJAKOV, V.N.

REDUCTION IN WEIGHT OF SHIP HULLS AS A FUNCT
ION OF YIELD STRENGTH OF USED STEELS.=

SUDOSTROENIE, 23, APR 1957, PP. 1-4

THIS IS A RATHER DETAILED ANALYSIS OF THE TITL
E SUBJECT. IT IS RECOGNIZED TH REDUCTION IN
WEIGHT CANNOT BE PROPORTIONAL TO INCREASE IN
YIELD STRENGTH SINCE VARIOUS OTHER FACTORS MUS
T BE CONSIDERED IN DETERMINATION OF PROFILE DI
MENSIONS. WEIGHT ESTIMATES ARE MADE FOR HYPOT

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NETICAL SHIPS OF A GIVEN STRUCTURAL ARRANGEMENT. IT IS SHOWN THAT FOR RIVER CARGO SHIPS, REASONABLE WEIGHT REDUCTIONS ARE ACHIEVED WHEN YIELD STRENGTH IS RAISED FROM 25 TO 50 KG/MM² (25.5 TO 51 KSI). THE RELATIVE REDUCTION DEPENDS ON OVERALL LENGTH AND AMOUNTS TO 5 PER CENT FOR L = 40 M, 15 PER CENT FOR L = 60 M, AND 25 PER CENT FOR L =

SHIPS, DESIGN

DESIGN, SHIPS

MATERIALS, SELECTION

SELECTION, MATERIALS

HULL DESIGN

DESIGN, HULL

55041

REJNOV, M.N.

THE USE OF COMPUTERS IN SHIP STATICS CALCULATIONS.=

SUDOSTROENIE, 23, MAY 1957, PP. 49-52

THIS IS AN EXPOSITORY ARTICLE CONTAINING SOME EXAMPLES OF GENERAL NATURE. THE EXPLANATIONS AND METHODS USED ARE ELEMENTARY. EXAMPLES INCLUDE VOLUME DETERMINATION FROM CROSS-SECTION SHAPES, CENTERS OF GRAVITY, SHIP STABILITY PROBLEMS, ETC. NO DETAILS OR NUMERICAL RESULTS ARE SHOWN.

COMPUTERS, USE

SHIPS, DESIGN

DESIGN, SHIPS

55042

NAVROCKIJ, D.I.

STRENGTH COMPARISON OF WELDED AND RIVETED JOINTS UNDER DYNAMIC LOADING.=

SUDOSTROENIE, 23, AUG 1957, PP. 7-11

THIS IS A DESCRIPTION OF EXTENSIVE EXPERIMENTS PERFORMED ON STRUCTURAL JOINTS OF ACTUAL SIZE. COMPARISON OF TYPICAL SHAPES AND ARRANGEMENTS SHOWS THAT RIVETED JOINTS OF EQUAL WEIGHT AS WELDED ONES HAVE ONLY ABOUT 40% OF STRENGTH OF THE LATTER.

THIS ARTICLE IS A PART OF EXTENSIVE WORK OF THE AUTHOR WHO IS WELL KNOWN FOR HIS STUDIES IN STRENGTH OF WELDMENTS.

METALS, WELDING

WELDING, METALS

METALS, JOINING

JOINING, METALS

55043

ANONYMOUS

A CLASS OF ICEBREAKING SHIPS.=

SUDOSTROENIE, 28, NOV 1962, P. 77

THIS IS A SHORT ACCOUNT OF PAPERS WHICH HAVE APPEARED IN HOLLAND SHIPBUILDING, 10, JULY 1961, AND 11, MAR 1962, RESPECTIVELY.

ICEBREAKING CARGO SHIPS RITVA DAN AND ERITA DAN ARE DESCRIBED. DATA: LENGTH 98.5 M, BREADTH 14 M, DEPTH FROM UPPER DECK 8 M, DRAUGHT UNDER LOAD 6.6 M, DEAD WEIGHT 2750 TONS, SPEED 14.5 KNOTS, SKIN THICKNESS AT WATERLINE 25 MM (1 IN.) AT STERN AND 18 MM (0.7 IN.) SIDES. A MAI

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IC-600 SHIP DATA
IC-600 SHIP GOING SHIP
IC-600 SHIP DATA
IC-600 SHIP GOING SHIP
IC-600 SHIP DESIGN
IC-600 SHIP DESIGN
IC-600 SHIP

LENKO, G. E.

SUDOSINOMER, 23, JAN - 1957, PP. 3-51

SHIPS, LOADING

LOADING, SHIPS

SHIPS, DESIGN

DESIGN SHIPS

55045

SCHEIDT, O.

JULIUS D. A. MARXEN AND ADOLPH A. H. FOKKES,
ANOTHER TWO DIESEL-ELECTRICAL PILOT BOATS IN
THE HAMBURG HARBOR.

SCHIFF UND HAFEN, NOV 1957, 4 PP.

THIS IS A DETAILED DESCRIPTION OF TWO IDENTICAL PILOT BOATS. THEY ARE 21 M LONG, BREADTH 5.2 M, DEPTH 2.75 M, DRAUGHT 2.35, 260 HP AT 180 R/MIN, 10.7 KNOTS. SCHEMATIC DRAWINGS, PHOTOGRAPHS AND TABLES ARE INCLUDED. SPECIAL ATTENTION IS PAID TO PROPULSION SYSTEM PRODUCED BY THE AEG COMPANY.

BOATES, DESIGN.

DESIGN, BOATS

BOATS, PROPULSION SYSTEMS

PROPULSION SYSTEMS, BOATS

55046

JUNG, H.

JUNG, H.
HARBOR AND SEA TUGS MICHEL AND W. TH. STRATM
ANN. =

AAA. =
SCHIFF UND WAFEN, JAN 1956, 11 PP.

THIS IS A VERY DETAILED AND EXTENSIVE DESCRIPTION OF THE TWO TUGS WHICH WERE THE FIRST ONES EQUIPPED WITH A DIESEL-ELECTRIC PROPULSION IN HAMBURG AND GERMANY. DATA: LENGTH 28.9 M, BREADTH 7.50 M, DEPTH 2.90, DRAUGHT 3.25 M, 1000 HP AT 180 RPM, DISPLACEMENT 342 TONS. PULL UP TO 25 TONS. THE ARTICLE CONTAINS MANY DETAILED DRAWINGS, PHOTOGRAPHS AND TABLES. THE POWER EQUIPMENT AND PROPULSION ARE DESCRIBED WITH SPECIAL CARE.

TUGS, DESIGN

55043	700
55043	701
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1.00, PROPULSION SYSTEMS
PROPULSION SYSTEMS, 1.00
55047

RUMYANSKIY, O. A.

A HARBOR ICE-BREAKING FERRY. =

SUDOSTROENIE, 31, AUG 1965, PP. 3-6

THIS IS A DESCRIPTION OF AN ICE-BREAKING FERRY
FOR PASSENGERS AND VEHICLES TRANSPORTATION IN
HARBORS. ITS NAME IS KAMONEREC AND THE DATA I
S AS FOLLOWS CLASS 00 * P 4/1 S OF THE USSR R
EGISTER, LENGTH 40M, BREADTH 10M, DEPTH 4.2 M,
DRAUGHT 2.5 M, DISPLACEMENT (WITH LOAD) 516 T
ONS, LOAD CAPACITY 65 TONS (64 PASSENGERS). D
IESEL-ELECTRIC PROPULSION, TWO PROPELLER ENGIN
ES (FORWARD AND AFT) GIVE 312 KW AT 420 RPM.
MANY DETAILS ARE GIVEN AND DRAWINGS ARE INCLUD
ED. TRANSLATION OPTIONAL.

ICE-BREAKER KAMONEREC

KAMONEREC ICE-BREAKER

ICE-BREAKERS, DESIGN

DESIGN, ICE-BREAKERS

55048

ANONYMOUS

A NEW ICE-BREAKING STEAMER MAGGA DAN. =

MORSKOJ FLOT, 17, JUL 1957, PP. 26-30

A DETAILED DESCRIPTION OF THE STEAMER IS GIVEN
. IT HAS BEEN BUILT IN AND FOR DENMARK. IT M
EETS ICE-BREAKING REQUIREMENTS OF THE ENGLISH L
LOYD AND OF THE FINNISH AL ICE CLASS (I.E. THE
SKIN MUST BE OVER 1 IN. THICK). IT CAN CARRY
36 PASSENGERS AND HENCE MEETS ALL SAFETY REQU
IREMENTS FOR PASSENGER SHIPS. DATA LENGTH 75
M, BREADTH 13.7 M, LOAD CAPACITY 62 500 CUBIC
FEET, SPEED 12 KNOTS. IT HAS SOME INTERESTIN
G FEATURES AND EQUIPMENT. ITS COLOR IS BRIGHT
RED. IT HAS SOPHISTICATED NAVIGATION EQUIPME
NT, TWO INDEPENDENT RADARS, AUTOMATIC SMOKE SI
GNALIZATION SYSTEM. MANY PARTS OF EQUIPMENT A
RE DOUBLED.

ICE-BREAKERS MAGGA DAN

MAGGA DAN ICE-BREAKER

ICE-BREAKERS, DESIGN

DESIGN, ICE-BREAKERS

55049

CHASHKOV, M. T.

KPEJMER, I. D.

SHIP-BUILDING COMPUTATIONS ON COMPUTERS. =

SUDOSTROENIE, 31, FEB 1965, PP. 79-80

THIS IS AN EXTENSIVE AND DETAILED REVIEW OF A
RECENT BOOK BY PEJNOV, M. N., BREGMAN, V. I.,
MOSKALENKO, V. M., NAKHIMOVICH, E. M., PETROV,
E. JU, MOSHENSKIY, N. L. AND AKSENOV, E. M.

THE BOOK APPEARED UNDER THE TITLE NAME AND WAS
EDITED BY PEJNOV, M. N. IN THE PUBLISHING HOU
SE SUDOSTROENIE IN 1964. THE ACCOUNT INDICATE
S THAT THE BOOK IS MODERN, WELL WRITTEN, CONTA
INS MANY EXAMPLES AND DEALS WITH IMPORTANT TOP
ICS. TRANSLATION RECOMMENDED.

COMPUTERS, USE

55046	702
55046	703
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55049	701

COMPUTERS, PROGRAMMING, COMPUTER.
55050
ENG, G.

ICEBREAKERS OF HIGHER CAPACITY ARE NEEDED FOR FAR EAST AND NORTH.=

MORSKOJ FLOT, 25, FEB 1965, P. 44

THE INTERESTING PART OF THIS ARTICLE IS THAT IT GIVES SOME DATA OF A LEDOKOL (ICEBREAKER) CLASS OF ICEBREAKERS WHICH HAS APPEARED ONLY ON PHOTOGRAPHS IN SUDOSTROENIE JOURNAL. AS OF THE DATE OF THIS ARTICLE, 6 SUCH ICEBREAKERS HAVE BEEN BUILT PROBABLY BY THE ADMIRALTEJSKIY SHIPYARD IN Leningrad. FURTHER SHIPS WILL BE BUILT. PRINCIPAL DATA: LENGTH 67.63M, BREADTH MAX. 18.06 M, DISPLACEMENT 2000 TONS, CAPACITY ON AFT PROPELLERS 4800 HP, SPEED 14.8 KNOTS. DIESEL-ELECTRIC PROPULSION. THE ARTICLE WAS WRITTEN BY A CREW MEMBER (ELECTROTECHNICIAN) WHO SERVED ON LEDOKOL 1 AND LEDOKOL 3. HE STATES THAT THE LEDOKOL CLASS HAS NOT SUFFICIENT CAPACITY FOR EFFECTIVE ICE-BREAKING OPERATIONS ESPECIALLY IN WINTER. HE SAYS THAT TWO CLASSES SHOULD BE CONSTRUCTED, ONE 5400 HP WHICH COULD BE USED IN HARBORS DURING WINTER AND A 7200 HP CLASS FOR REGULAR WINTER USE ON THE NORTHERN SEA WAY. THEN HE CRITICIZES SOME DESIGN FEATURES OF THE LEDOKOL CLASS, PARTICULARLY THE FORWARD PROPELLER. TRANSLATION RECOMMENDED.

LEDOKOL CLASS

ICEBREAKERS, OPERATION

OPERATION, ICEBREAKERS

55051

TARCHIS, M.K.

ICE LOADS SUPPORTED BY A SHIP.=

RECHNOJ TRANSPORT, 16, DEC 1957, PP. 19-22

THIS IS A RATHER DETAILED STUDY WHICH ANALYSES FORCE ACTION ON A SHIP DURING A) IMPACT LOADS GENERATED BY ICE FLOES OR BY COMPACT FLAT ICE FIELD AND B) COMPRESSION LOADS. BOTH CASES ARE EXPLAINED AND SOLVED IN DETAIL. ENERGY BALANCE METHODS ARE USED THROUGHOUT. A NUMERICAL EXAMPLE IS INCLUDED. TRANSLATION RECOMMENDED

HULL DESIGN

DESIGN, HULL

ICEBREAKERS, LOADING

LOADING, ICEBREAKERS

55052

MAKSIMADZHI, A.

NOVIKOV, O.

SOKOLOV, L.

ON THICKNESS ADDITIONS FOR WEAR AND CORROSION IN DESIGN OF CARCO SHIP HULLS OF LOW-ALLOY STEEL.=

MORSKOJ FLOT, 19, MAR 1959, PP. 12-16

THE TITLE TOPIC IS CONSIDERED FROM THE VIEWPOINT OF OVERALL ECONOMY OF THE SHIP. COMPARISONS OF EQUALLY STRONG SHIPS MADE OF A MILD STEEL AND OF A 50 KSI STEEL, RESPECTIVELY, ARE USED

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THE UNITED STATES OF AMERICA
DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

FULL CROWN
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 RUSTON, FULL
 LO ALLOY STEELS
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5117, EV, A.

RYMLIN, A.

ON CALCULATIONS OF ICE-RESISTANCE IN
FINELY BROKEN ICE. =

MOSSKOV FLOT, 21, AUG 1961, PP. 36-38

THE TERM FINELY BROKEN ICE REFERS TO ICE COVER AGE CONSISTING OF FLOES SMALLER THAN 20 METERS IN HORIZONTAL DIRECTION. ARCTIC ICEBREAKERS DO NOT BREAK SUCH ICE BUT ONLY PUSH IT APART.

EMPIRICAL FORMULAE HAVE BEEN DEVELOPED FOR TWO DENSITIES OF FINELY BROKEN ICE. THEY GIVE A RESISTANT COEFFICIENT AND SHOW REASONABLE AGREEMENT WITH ACTUAL MEASUREMENTS ON ICEBREAKERS

TRANSLATION RECOMMENDED.

ICE-PEAKS, MODELS

VOCELS, ACCENTUATORS

ICE CHARACTERISTICS

RESISTANCE, ICE

ICF. RESISTANCE

55054

LAVROV, V.

POZYNAK, I.

PRINCIPLES OF ICE FORMATION IN RESERVOIRS OF COOLING WATER.=

MORSKOJ FLOT, 23, JUN 1963, PP. 21-22

THIS IS A DETAILED DESCRIPTION OF THE TITLE TO
PIC WITH SPECIAL ATTENTION TO SHIPS NAVIGATING
IN ICE. SOME THERMODYNAMICAL CONSIDERATIONS
ARE INCLUDED, AND MEASURES FOR PREVENTION ARE
GIVEN QUANTITATIVELY. TRANSLATION OPTIONAL.

ICE CHARACTERISTICS

ICE-GOING SHIPS, DESIGN

DESIGN, ICE-GOING SHIPS

55055

SUPFLN, L.A.

A METHOD FOR DESIGN OF ELECTRO-CHEMICAL CORROSION PROTECTION OF SUBMERGED PARTS OF SHIP HULLS. =

SUDOSTROENIE, 27, APR 1961, PP. 5-9

IT GIVES THE ENTIRE COMPUTATION SCHEME FOR ELECTRO-CHEMICAL PROTECTION OF HULLS WITH REGARD TO USE OF SPECIAL COATINGS AND PAINTS WHICH CONTRIBUTE FAVORABLY TO UNIFORM POTENTIAL DISTRIBUTION. THE PROCEDURE IS OUTLINED AND EXPLAINED IN ALL DETAIL, AND AN EXAMPLE IS WORKED OUT. CHEMICAL COMPOSITION, TREATMENT AND PROPERTIES OF PROTECTIVE PAINTS ARE ALSO INCLUDED.

TRANSLATION OPTIONAL.

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1. A SIMPLIFIED METHOD FOR COMPUTATION OF WIND
 VELOCITY WHICH A SHIP CAN RESIST.=
 SUPOSTROENIE, 24, FEB 1961, PP. 1-5
 THIS IS A DETAILED EXPLANATION OF A SIMPLIFIED
 APPROACH TO COMPUTATION OF A MAXIMUM ANGLE OF
 INCLINATION AND OF THE LIMITING VALUE OF THE
 WIND FORCE. THE METHOD IS BASED ON CONPARISON
 OF A DIAGRAM OF THE INCLINATION MOMENT WITH
 A DIAGRAM OF MOMENTS OF STATIC STABILITY. GRAPHS,
 FORMULAS, AND AN ILLUSTRATIVE EXAMPLES ARE
 GIVEN.
 SHIPS, DESIGN
 DESIGN, SHIPS
 SHIPS, LOADING
 LOADING, SHIPS
 55060
 DEVNIN, S.I.
 RAKHMANOV, I.V.

2. RATIONAL ARRANGEMENT OF A RUDDER IN A STREAM
 OF A HEAVILY LOADED PROPELLER.=
 SUPOSTROENIE, 27, JUL 1961, PP. 13-15
 THIS IS A SHORT BUT DETAILED THEORETICAL STUDY
 ON THE TITLE TOPIC. IT IS CONCLUDED THAT THE
 RUDDER SHOULD BE LOCATED AS CLOSELY AS POSSIBLE
 TO THE PROPELLER. A METHOD FOR EVALUATION
 OF THE LIFTING FORCE OF A RUDDER IS OUTLINED IN
 DETAIL.

SHIPS, RUDDERS
 RUDDERS, SHIPS
 PROPELLERS
 55061

3. EXPERIMENTAL INVESTIGATION OF WATER RESISTANCE
 DURING ROLL OF A SHIP.=
 SUPOSTROENIE, 23, JUN 1957, PP. 9-11
 THIS IS BOTH AN EXPERIMENTAL AND THEORETICAL INVESTIGATION
 ON THE TITLE SUBJECT. THE LAW OF
 WATER RESISTANCE AS FUNCTION OF ANGULAR VELOCITY
 OF ROLL IS EXPRESSED IN FORM OF A QUADRATIC
 BINOMIAL. A PROCEDURE IS OUTLINED WHICH EN-
 ABLES TO COMPUTE THE TOTAL RESISTANCE MOMENT OF
 A STRANDING SHIP DURING THE ROLLING MOTION IN
 CALM WATER. THE METHOD SHOWS REASONABLE AGREE-
 MENT WITH EXPERIMENTS AND IS APPLICABLE TO A VARIETY
 OF CROSS-SECTIONS.

RESISTANCE, FLUID DYNAMICS
 55062

4. A SIMPLIFIED METHOD FOR COMPUTATION OF WIND
 VELOCITY WHICH A SHIP CAN RESIST.=
 SUPOSTROENIE, 24, FEB 1961, PP. 1-5
 THIS IS A DETAILED EXPLANATION OF A SIMPLIFIED
 APPROACH TO COMPUTATION OF A MAXIMUM ANGLE OF
 INCLINATION AND OF THE LIMITING VALUE OF THE
 WIND FORCE. THE METHOD IS BASED ON CONPARISON
 OF A DIAGRAM OF THE INCLINATION MOMENT WITH
 A DIAGRAM OF MOMENTS OF STATIC STABILITY. GRAPHS,
 FORMULAS, AND AN ILLUSTRATIVE EXAMPLES ARE
 GIVEN.
 SHIPS, DESIGN
 DESIGN, SHIPS
 SHIPS, LOADING
 LOADING, SHIPS
 55061
 DEVNIN, S.I.
 RAKHMANOV, I.V.

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24005	24005	010
ARISTOV, V.S.	24005	101
KUDINOV, E.D.	24005	102
SERBIN, N.G.	24005	103
WELDABILITY INVESTIGATION OF THERMALLY-STRENGTHENED CARBON STEEL 20 C.=	24005	201
SUDOSTROENIE, 29, JAN 1963, PP. 51-54	24005	202
THIS ARTICLE DESCRIBES TESTS WHICH ARE TO CHARACTERIZE WELDABILITY OF THE MENTIONED STEEL.	24005	251
THE THERMALLY-STRENGTHENED CARBON STEEL 20 C IS CONSIDERED AS A SUBSTITUTE FOR MORE EXPENSIVE LOW-ALLOY STEELS WITH YIELD LIMIT LARGER THAN 35 KG/MM ² (I.E. 50KSI). THE STEEL ITSELF IS NOT DESCRIBED.	24005	501
BOTH AUTOMATIC AND MANUAL WELDING WAS USED ON PLATES 10 AND 32 MM (I.E. 0.4 AND 1.25 IN.). ONLY EMPIRICAL TESTING METHODS ARE USED BENDING TESTS OF SPECIMENS WITH WELDS AND SURFACE WELD-BEADS, IMPACT ROUND NOTCH TESTS, DROP-WEIGHT TESTS ON 4 WELDED BEAMS. IN ADDITION, LIMITED METALLOGRAPHIC STUDIES OF THE WELD WERE MADE. THE RESULTS SHOW THAT THE TESTED WELDMENTS ARE SAFE AGAINST BRITTLE FRACTURE AT -25 DEGREES C AND THAT THE ORIGINAL STRENGTHENING WAS NOT IMPAIRED BY SUBSEQUENT WELDING.	24005	502
HOWEVER, SUCH CONCLUSIONS ARE NOT FULLY JUSTIFIED SINCE THE METHODS USED ARE OBSOLETE AND UNRELIABLE.	24005	503
STEELS, CARBON	24005	504
CARBON STEELS	24005	505
STEEL, ECONOMY	24005	506
ECONOMY, STEEL	24005	507
STEELS, HEAT TREATED	24005	508
HEAT TREATED STEELS	24005	509
METALS, WELDING	24005	510
WELDING, METALS	24005	511
24006	24005	512
KACMAN, F.M.	24005	513
MATERIAL SELECTION FOR FABRICATION OF PROPELLER SCREWS OF SEA SHIPS.=	24005	514
SUDOSTROENIE, 24, MAR 1958, PP. 50-53	24005	515
THIS IS A DETAILED ARTICLE DEALING WITH MATERIALS WHICH COULD REPLACE THE DEFICIENT BRASS AS A MATERIAL FOR PROPELLERS. CARBON STEELS, STAINLESS STEELS, AND CAST IRONS ARE CONSIDERED AND COMPARED FROM THE CORROSION AND CAVITATION VIEWPOINT.	24005	516
MATERIALS, SELECTION	24005	517
SELECTION, MATERIALS	24005	518
SHIPS, PROPELLERS	24005	519
PROPELLERS, SHIPS	24005	520
24007	24005	521
MAKSIMADZHI, A.I.	24005	701
NOVIKOV, O.A.	24005	702
SOKOLOV, L.G.	24005	703
TECHNICAL AND ECONOMICAL EFFICIENCY OF LOW-ALLOY STEELS ON DRY CARGO SHIPS.=	24005	704
SUDOSTROENIE, 22, OCT 1956, PP. 27-30	24005	705
THIS ARTICLE COMPARES ECONOMICAL AND TECHNICAL FACTORS OF DRY CARGO SHIPS WHICH HAVE 1000, 3	24005	706
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	24006	708
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FLUID DYNAMICS, RESISTANCE
SHIPS, DESIGN
DESIGN, SHIPS
55063
ANONYMOUS.

A MODEL OF THE NUCLEAR ICEBREAKER LENIN.=
SUDOSTROENIE, 24, APR 1958, P. 72
THIS IS A NOTE ON A 1 TO 50 SCALED MODEL OF THE
NUCLEAR ICEBREAKER WHICH WAS DISPLAYED AT THE
WORLD FAIR IN BRUSSELS IN 1958. OBVIOUSLY,
IT WAS A VERY SOPHISTICATED AND LARGE MODEL, 9
FT. LONG AND CONSISTING OF 15,000 JOINTS AND
OF 50,000 PARTS. 30 PEOPLE, INCLUDING SOME NOTED
ARTISTS, TOOK PART IN CONSTRUCTION. TWO
PHOTOGRAPHS ARE SHOWN.

ICEBREAKER LENIN
LENIN ICEBREAKER
ICEBREAKERS, MODELS
MODELS, ICEBREAKERS
55064

VOEVUDIN, N.F.

A GRAPHO-ANALYTICAL METHOD FOR DETERMINATION
OF THE NECESSARY BALLAST AND OF INCREMENTS IN
STABILITY PARAMETERS OF A SHIP.=

SUDOSTROENIE, 27, MAY 1961, PP. 11-14

THIS IS A DETAILED THEORETICAL STUDY ON THE TITLE
TOPIC. IT DEALS WITH DYNAMICAL STABILITY,
INCLINATION MOMENTS IN ROLL, STATIC STABILITY
AND WITH METACENTRICAL DEPTH. TRANSLATION OP
TIONAL.

SHIPS, STABILITY
STABILITY, SHIPS

55061	701
55062	702
55062	704
55063	510
55063	201
55063	201
55063	251
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55064	251
55064	501
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55064	504
55064	505
55064	701
55064	702

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S. TRAOV, V. I.

PREDICTIONS OF ICEBREAKER VELOCITY IN UNBROKEN
IN ICE.

PROBLEMY ARKTIKI I ANTARKTIKI 5, 1960, P. 27-3

0

THIS IS A SHORT DESCRIPTION OF AN APPROXIMATIVE
METHOD OF VELOCITY DETERMINATION OF AN ICEBR
EAKER IN SOLID ICE. IT IS NECESSARY TO KNOW I
CE THICKNESS AND ITS ULTIMATE BENDING STRENGTH

THE METHOD MAY BE ALSO USED FOR BROKEN ICE,
WHEN THE DENSITY EXCEEDS 10 AND WHEN NO ICE P
RESSURE EFFECTS ARE INVOLVED. TRANSLATION OPT
IONAL.

ICE CONDITIONS, FORECAST

FORECAST, ICE CONDITIONS

ICEBREAKERS, MOTION

MOTION, ICEBREAKERS

RESISTANCE, ICE

ICE RESISTANCE

55066

KHEJSIN, D. E.

DETERMINATION OF LOADS WHICH ACT ON SHIP HUL
L DURING ICE COMPRESSION.

PROBLEMY ARKTIKI I ANTARKTIKI 7, 1961, PP. 25-
31

THIS IS AN APPROXIMATE BUT REASONABLY DETAILED
ACCOUNT OF THE TITLE TOPIC. TWO PROBLEMS ARE
CONSIDERED (1) DETERMINATION OF DESIGN LOADS
FOR ICEBREAKERS AND ICE-GOING SHIPS WITH TILT
ED SIDES AND (2) DETERMINATION OF DESIGN LOADS
FOR CARGO SHIPS WITH VERTICAL SIDES. IN BOTH
CASES, THE FRACTURE LOAD OF ICE IS COMPUTED.

FORMULAE ARE DERIVED AND THEIR USE IS ILLUSTR
ATED ON EXAMPLES FROM REAL SHIPS. TRANSLATION
RECOMMENDED.

HULL, DESIGN

DESIGN, HULL

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

ICE-GOING SHIPS, DESIGN

DESIGN, ICE-GOING SHIPS

ICEBREAKING, THEORY

THEORY, ICEBREAKING

55067

KHEJSIN, D. E.

CONTACT PRESSURES RESULTING FROM IMPACT OF T
HE ICE KNIFE ON ICE.

PROBLEMY ARKTIKI I ANTARKTIKI 8, 1961, P. 67-7
4

THIS IS A DETAILED THEORETICAL ARTICLE ON THE
TITLE TOPIC. THE METHOD DERIVED PERMITS ULTER
MINATION OF CONTACT PRESSURES IN THE ICE KNIFE
CAUSED BY IMPACT AGAINST AN INFINITE ICE FILL

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[illegible]

ICEBREAKING, THEORY
THEORY, ICEBREAKING
ICEBREAKERS, DESIGN
DESIGN, ICEBREAKERS
ICEBREAKERS, MOTION
MOTION, ICEBREAKERS

55066

PAVSKIJ, E. I.

LOSS IN OPERATION TIME OF ICEBREAKERS DUE TO
MAINTENANCE AND A METHOD OF ITS DETERMINATION

PROBLEMY ARKTIKI I ANTARKTIKI. 14, 1966, P. 35-39

THIS IS A RATHER DETAILED STUDY ON ECONOMY OF ICEBREAKER OPERATION. MANY USEFUL TABLES ARE GIVEN AND AN EXAMPLE IS SHOWN, REFERRING TO ICEBREAKER SIBIR. TRANSLATION OPTIONAL.

ICE-BREAKERS, OPERATION
OPERATION, ICE-BREAKERS

55062

KOROTKIN, JA. I.

MSK SIMADZHI, A. I.

STRENGTH COMPUTATION PROCEDURE OF SEA CARGO SHIPS.=

TRUDY CON.1.1. MORSKOGO FLOTA 17, 1958, P. 1-1
28

THIS IS AN EXTENSIVE DESCRIPTION OF THE RUSSIAN RECOMMENDED PRACTICE FOR DESIGN OF SEA CARGO SHIPS. HEADING OF MAIN PARTS READ AS FOLLOWS: DETERMINATION OF BENDING MOMENTS AND OF SHEARING FORCES DUE TO GENERAL BENDING OF A SHIP. VERIFICATION OF THE GENERAL STRENGTH OF THE SHIP AND SUMMATION OF STRESSES. COMPUTATION OF LOCAL STRENGTH OF DRY CARGO SHIPS. COMPUTATION OF LOCAL STRENGTH OF TANKERS. A TOTAL OF 23 PARAGRAPHS, 55 TABLES AND 31 REFERENCES ARE INCLUDED. NOTE: BECAUSE OF UNUSUAL LENGTH OF THE ARTICLE, ONLY THE TABLE OF CONTENTS, INTRODUCTION, LIST OF TABLES AND REFERENCES WERE COPIED.

SHIPS, DESIGN

DESIGN SHIPS

CARGO SHIPS, DESIGN

DESIGN, CARGO SHIPS

TANKERS, DESIGN

DESIGN TANKERS

SHIPS, SPECIFICATIONS

SPECIFICATIONS, SHIPS

5507

NGG L. L. R.

ON IMPACT OF A SHIP ON A FLOOR

TRUDY Leningrad Korallistr. Inst. 26, 1962, p.

[illegible]

1. *Phragmites australis* (Cav.) Trin. ex Steud.

519-15

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PTC 10-1001

55076

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ON CONSTRUCTION OF L. S. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839

SCHIFF UND HAFEN, JAN. 1967, S. 21-22.

THIS IS A SUMMARY OF AN INVESTIGATION OF THE
D FOR THE GERMAN LLOYD AT THE DRIVE CITY OF
MURBURG. IT PROVIDES A DETAILED DESCRIPTION OF
A RECOMMENDED PROCEDURE FOR EVALUATION OF LONG
ITUDINAL BENDING MOMENTS OF SHEETS FOR ANY COM-
INATION OF LOAD AND BALLAST DISTRIBUTION. MANY
GRAPHS AND TABLES SIMPLIFY THE PROCEDURE AND
MAKE IT EASY FOR THE DESIGNER.

SHIPS, DESIGN

DESIGN, SHIPS

MULL • DESIGN

DESIGN, HULL

53074

KONDRIKOV, C.V.

CHE TYRKIN, N. V.

USE OF STATISTICAL METHODS FOR SHIP STRENGTH
EVALUATION BASED ON EXPERIMENTAL RESULTS. =

TRUDY C.N.I.I. MORSKOBO FLOTA 41, 1962, P. 3-2

THIS IS A DESCRIPTION OF EXPERIMENTS WHICH WERE PERFORMED ON THE TANKER INZHENER A. POSTUSHKIN DURING NAVIGATION ON HEAVY SEAS. THE SHIP IS CONSIDERED AS A STATIONARY DYNAMIC SYSTEM WHICH IS SUBJECTED TO A RANDOM INFLUENCE OF THE WAVE PROFILE AT A POINT OF SEA SURFACE. THIS INPUT (EXCITATION) PROCESS IS CONSIDERED STATIONARY AND ERGODIC. THE OUTPUT (RESPONSE) IS ALSO STATIONARY AND ERGODIC AND REPRESENTS THE TIME CHANGE OF THE BENDING MOMENT IN A CROSS-SECTION OF THE SHIP. ALL DETAILS OF THE EXPERIMENTAL PROGRAM, PROCESSING OF RESULTS AND THEIR ANALYSIS AND OTHER FEATURES OF THE PROJECT ARE DESCRIBED. TRANSLATION OPTIONAL.

STATISTICAL ANALYSIS

MATHEMATICAL METHODS

METHODS, MATHEMATICAL

SHIPS, DESIGN

DESIGN. SHIPS

SHIPS. LOADING

LOADING, SHIPS

SHIPS. TESTING

TESTING, SHIPS

15075

MAKSIMADZHI, A. I.

ON STANDARDIZATION OF STRENGTH OF LONGITUDINAL BILGE CONNECTIONS OF CARGO SHIPS WITH DOUBLE BOTTOM. =

TRUDY C.N.I.I. MORSKOGO FLOTA 41, 1962, P. 43-
66

THIS IS A VERY DETAILED ANALYSIS OF STRUCTURAL PROBLEMS CONNECTED WITH LONGITUDINAL AND TRANSVERSE GILGE STRUCTURES. STRESSES ACTING ON C

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1. *Journal of the American Medical Association*, 1997; 278: 1039-1044.

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1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971) using a Shimadzu 1601 UV-Visible Spectrophotometer. The concentration of chlorophyll was expressed in $\mu\text{g mL}^{-1}$.

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55077	702
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 MATHEMATICAL METHODS
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STATISTICAL ANALYSIS
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 TESTING, SHIPS

1999

LOGIC, L.H.

ICE RESISTANCE OF ICEBREAKER MODELS IN BROKEN
 ICE, AS INVESTIGATED FROM 1949 TO 1951.=
 TRUDY Leningrad. KORABLISTR. INST. 29, 1959, P.
 . 53-69

THIS IS A DESCRIPTION OF EXPERIMENTS WHICH WERE
 PERFORMED IN THE Leningrad SHIPBUILDING INSTI-
 TUTE WITH A SET OF SCALED MODELS OF THE ICEBR-
 EAKER I. STALIN. PARAFFIN ICE WAS USED WITH O-
 FACITY RANGING FROM 4 TO 10. THE RESULTS ARE
 EVALUATED IN FORM OF COEFFICIENTS OF SPECIFIC
 RESISTANCE WHICH ARE FUNCTIONS OF THE FROUDE N-
 UMBER. FORMULAE ARE SHOWN AND COMPARED WITH E-
 XPERIMENTS. C.F. REF. 55067. TRANSLATION REC-
 OMENDED.

ICE CHARACTERISTICS
 ICE BREAKERS, MODELS
 MODELS, ICEBREAKERS
 ICEBREAKERS, MOTION
 MOTION, ICEBREAKERS
 RESISTANCE, ICE
 ICE RESISTANCE

55068

POZNUK, I.I.

POPOV, JU.N.

SUKHORUKOV, A.JA.

RESEARCH IN THE FIELD OF ICEBREAKERS.=

PROBLEMY ARKTIKI I ANTARKTIKI 4, 1960, P. 130-
 138

THIS IS A RATHER GENERAL ARTICLE SUMMARIZING B-
 RIEFLY THE HISTORY OF PAST AND RECENT RESEARCH
 ACTIVITIES IN THE FIELD OF ICEBREAKERS WHICH
 WAS PERFORMED BY THE ARCTIC INSTITUTE. NO REF-
 ERENCES ARE GIVEN. THE FOLLOWING TOPICS ARE D-
 ISCUSSED. ICE RESISTANCE OF BROKEN AND SOLID
 ICE, PROPELLERS AND SHAFTS, HULL STRENGTH, MEC-
 HANICAL SYSTEMS, SPECIFICATIONS AND RECOMMENDA-
 TIONS. TRANSLATION RECOMMENDED.

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 DESIGN, ICEBREAKERS
 ICE RESISTANCE
 RESISTANCE, ICE
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HISTORY: ICEBREAKERS
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 RUSSIAN ICEBREAKERS
 ICEBREAKERS, RUSSIAN

55084

HORRS, H.

SPECIAL APPLICATION OF ELECTROMAGNETIC SLIPPING CLUTCHES FOR SUCTION PUMPS OF DREDGES AND FOR PITCHING EQUIPMENT OF ICEBREAKERS.

SCHIFF UND HAFEN 14, MAR 1962, P. 233-235

ONLY A VERY BRIEF ATTENTION IS GIVEN TO PITCHING EQUIPMENT APPLICATIONS (P. 235 ONLY). A SIMPLE SCHEMATIC IS SHOWN. TRANSLATION OPTIONAL

ICEBREAKERS, PITCHING EQUIPMENT
 PITCHING EQUIPMENT, ICEBREAKERS

55085

WOICIN, G.

THE INFLUENCE OF TORSIONAL IMPULSE IN SHIP COLLISION WITH REGARD TO SAFETY OF NUCLEAR SHIPS.

SCHIFF UND HAFEN 14, JUL 1962, P. 577-581

THIS IS A SIMPLIFIED ENERGY BALANCE APPROACH TO THE TITLE TOPIC, BASED ON VARIOUS VALUES OF SHIP PARAMETERS.

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SHIPS, COLLISION

COLLISION, SHIPS

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55084	701
55084	702
55085	010
55085	101
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AUTOMATIC WELDING, FEB 1962, P. 1-10	55089	251
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WORK OF PITCHING EQUIPMENT ON ICEBREAKERS.-	55090	201
SCHIFF UND HAFEN, DEC 1958, P. 1048-1050	55090	251
THIS IS A SHORT DESCRIPTION OF THE ARRANGEMENT AND PERFORMANCE OF PITCHING EQUIPMENT ON THREE GERMAN ICEBREAKERS. FOR MORE DETAILED TREAT MENT SEE REFERENCE 55072.	55090	502
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THIS IS A VERY SHORT DESCRIPTION OF THE TITLE ICEBREAKER. FOR MORE DETAILED REPORT SEE REFERENCE 55092.	55091	501
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ICEBREAKER MURTAJA	55091	701
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FINNISH ICEBREAKER "MURTAJA".-	55092	201
SCHIFF UND HAFEN, NOV 1959, P. 1017-1023	55092	251
THIS IS A DETAILED DESCRIPTION OF THE TITLE ICE BREAKER. IT IS A SISTER SHIP OF ICEBREAKER K ARHU (REF. 55004). MAIN CHARACTERISTICS LENGTH 74.1 M, BREADTH 17.4 M, DEPTH 8.8 M, DRAUGHT 5.8 M, MAXIMUM POWER 7500 HP, 3370T. THE ART ICLE PAYS CONSIDERABLE ATTENTION TO THE PROPEL SION EQUIPMENT AND ASSOCIATED ELECTRIC SYSTEMS . TRANSLATION OPTIONAL.	55092	501
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COLLECTED WORKS ON STRUCTURAL MECHANICS OF SHIPS, VOL. 1.	55096	704
SUDPRONGIZ, Leningrad 1962, 573 pp.	55097	001
THE FIRST OF FOUR VOLUMES OF THIS EXTENSIVE BOOK IS ENTITLED "BENDING OF BEAMS AND OF RECTANGULAR FRAMES". IT GIVES AN EXCELLENT EXPOSITION OF THE THEORY OF BEAMS AND FRAMES. IT INCLUDES TREATMENT OF BEAMS ON ELASTIC FOUNDATIONS, SHELLS AND MENTIONS ALSO TEMPERATURE EFFECTS IN BEAMS AND FRAMES. THE COPY INCLUDES AN EXTENSIVE BIOGRAPHY OF THE AUTHOR, WHO HAS EARNED INTERNATIONAL RECOGNITION. THEN, THE FOREWORD AND TABLE OF CONTENTS ARE INCLUDED. ALL FOUR VOLUMES ARE AVAILABLE IN THE LIBRARY OF CONGRESS, CALL NUMBER VN 156 P 32	55097	101
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COLLECTED WORKS ON STRUCTURAL MECHANICS OF SHIPS, VOL. 2.	55097	505
SUDPRONGIZ, Leningrad, 1962, 624 pp.	55097	506
THIS IS THE CONTINUATION OF REFERENCE 55097. THE SECOND VOLUME IS ENTITLED "BENDING OF CURVILINEAR FRAMES AND GRILLAGES". TITLE PAGES AND THE TABLE OF CONTENTS ARE COPIED. PARTICULAR ATTENTION IS GIVEN TO CURVILINEAR FRAMES, TO CLOSED CIRCULAR FRAMES AND TO THEIR STABILITY, TO DEFORMATIONS IN TRANSVERSE DIRECTION. THE SECOND HALF OF THE BOOK IS DEVOTED TO DETAILED TREATMENT OF A NUMBER OF CASES IN THE THEORY OF GRILLAGES.	55097	507
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SUDPRONGIZ, Leningrad, 1962, 521 pp.	55097	704
THIS IS THE CONTINUATION OF REFERENCE 55097 AND 55098. IT IS ENTITLED "COMBINED BENDING OF BARS AND BENDING OF PLATES." TABLE PAGES AND TABLE OF CONTENTS ARE COPIED. COMBINED BENDING	55097	705
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	55099	001
	55099	101
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●	G OF SLIGHTLY CURVILINEAR BARS IS DISCUSSED IN GREAT DETAIL. THEORY OF PLATES IS THEN DEVELOPED AND APPLIED TO VARIOUS CASES OF RECTANGULAR AND CURVILINEAR PLATES. COMBINED BENDING OF RECTANGULAR PLATES IS ILLUSTRATED ON PARTICULAR EXAMPLES.	55099	505
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●	COLLECTED WORKS ON STRUCTURAL MECHANICS OF SHIPS, VOL. 4. =	55099	703
●	SUDPRONGIZ, LENINGRAD 1963, 545 PP.	55099	704
●	THIS IS THE FINAL VOLUME OF THE COLLECTION DESCRIBED IN REFERENCES 55097, 55098, 55099 AND HERE. IT IS ENTITLED "STABILITY OF BARS, GRILLAGES AND PLATES." TITLE PAGES AND THE TABLE OF CONTENTS ARE COPIED. AN EXTENSIVE TREATMENT OF THE TITLE TOPIC IS PRESENTED BOTH GENERAL THEORY AND IN A NUMBER OF PARTICULAR EXAMPLES AND APPLICATIONS TO SHIPBUILDING.	55100	705
●	SHIPS DESIGN	55100	001
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●	SHIPS, STRUCTURAL COMPONENTS	55100	201
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●	THE STATIC STRENGTH OF WELDED STRUCTURES. =	55100	503
●	AUTOMATIC WELDING, OCT 1960, P. 1-8	55100	504
●	THIS IS A USEFUL ARTICLE ON BOTH DESIGN PHILOSOPHY OF WELDED STRUCTURES AND ON DESIGN OF JOINTS AND OTHER STRUCTURAL DETAILS FROM THE VIEWPOINT OF SAFETY AGAINST LOW STRESS BRITTLE FRACTURE. IN ENGLISH.	55100	505
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●	STRUCTURES	55100	508
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●	AUTOMATIC WELDING, JUN 1962, P. 5-10	55101	201
●	THIS IS A GENERAL ARTICLE ON THE PHILOSOPHY OF DESIGN OF WELDED STRUCTURES. SPECIAL ATTENTION IS PAID TO THE INTERRELATION BETWEEN WELDING TECHNIQUES USED IN THE FABRICATION PROCESS AND DESIGN. IN ENGLISH.	55101	251
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●		55101	705
●		55101	706
●		55101	707
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THIS IS A DETAILED THEORETICAL STUDY ON THE FORCES WHICH ACT ON THE ICEBREAKER IN A NARROW CHANNEL IN ICE. THE WEDGING CONDITIONS ARE ANALYZED AND THE WEDGING FORCES ARE RELATED TO THE MAGNITUDE OF EMERGENCE OF THE ICEBREAKER HULL AFTER IMPACT, WHICH IS FOUND AS A FUNCTION OF SHIP VELOCITY BEFORE IMPACT, AND OF ICE THICKNESS. HENCE, THE WEDGING FORCES CAN BE RELATED TO SHIP VELOCITY AND TO PARTICULAR ICE CONDITIONS. A SHORT EXAMPLE IS WORKED OUT. TRANSLATION RECOMMENDED.	55127	509
ICEBREAKERS, MOTION	55127	510
MOTION, ICEBREAKERS	55127	511
ICEBREAKING THEORY	55127	512
THEORY, ICEBREAKING	55127	513
ICEBREAKERS, LOADING	55127	514
LOADING, ICEBREAKERS	55127	701
55129	55127	702
BOGDANOVA, Z. V.	55127	703
MIROSHNICHENKO, I. P.	55127	704
SHEBALOV, A. I.	55127	705
MALOVA, V. P.	55127	706
IMPROVEMENT OF NAVIGATION PROPERTIES OF SHIPS THROUGH PERFECTION OF HULL CONTOURS.=	55129	011
	55129	101
	55129	102
	55129	103
	55129	104
	55129	201
	55129	202

TRUDY, C.N.I.I. MORSKOGO FLOTA, 78, 1967, P. 7 9-102	55129	251
	55129	252
THIS IS AN EXTENSIVE REPORT ON EXPERIMENTS WHICH WERE PERFORMED IN THE LENINGRAD SHIPBUILDING INSTITUTE. IN PARTICULAR, THE DOME-SHAPED FORMS OF BOW AND STERN CONTOURS WERE INVESTIGATED. IT WAS FOUND THAT THE SHIP SPEED CAN BE INCREASED BY 0.40 TO 0.85 KNOTS, FOR A GIVEN PROPUSSION CAPACITY. OR, THE CAPACITY OF THE MAIN ENGINE MAY BE REDUCED BY 8 TO 14 PERCENT AND THE SPEED MAINTAINED.	55129	501
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SHIPS, DESIGN	55129	701
DESIGN, SHIPS	55129	702
HULL DESIGN	55129	703
DESIGN, HULL	55129	704
SHIPS MOTION	55129	705
MOTION, SHIPS	55129	706
55130	55130	011
MINEVICH, A. JA.	55130	101
ON THE PROSPECTS OF THE USE OF AIR-CUSHION VEHICLES IN THE POLAR REGIONS.=	55130	201
	55130	202
BUJULETEN SOV. ANTARKT. EKSPEDICII, 62, 1967, P. 91-92	55130	251
	55130	252
THIS IS A SHORT REVIEW ON SOME RECENT MEETINGS WHICH WERE DEALING WITH THE TITLE TOPIC.	55130	501
	55130	502
ARCTIC RESEARCH	55130	701
55131	55131	011
POPOV, JU. N.	55131	101
RYVLIN, A. JA.	55131	102
ON THE PROBLEM OF BOW HULL CONTOURS OF ICE-GOING CARGO SHIPS.=	55131	201
	55131	202
PROBLEMY ARKT. I ANTARKT, 26, 1967, P. 108-109	55131	251
THIS IS A SHORT REVIEW OF DEVELOPMENT OF A NEW ANGUENA CLASS OF SOVIET CARGO SHIPS FOR SERVICE IN ARCTIC REGIONS. THE FIRST SHIP WAS CONSTRUCTED IN 1962. LENGTH 133 M, BREADTH 18.9 M, DISPLACEMENT 11,640 TONS, CAPACITY 5,000 TONS, 7,200 HP. THIS SHIP IS INTENDED TO REPLACE THE OLDER LENA CLASS. THE ARTICLE DISCUSSES THE CHANGES IN HULL CONTOUR WHICH RESULTED FROM EXPERIENCE WITH THE LENA CLASS. FOR DETAILS SEE 55016.	55131	501
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ANGUENA CLASS	55131	701
ICEBREAKING CARGO SHIPS	55131	702
CARGO SHIPS, ICEBREAKING	55131	703
ICE-GOING SHIPS	55131	704
SHIPS-ICE GOING	55131	705

65001
CHIRVON, M.V.
EXPERIENCE IN CONSTRUCTION OF THE NUCLEAR
ICEBREAKER LENIN.=
SUDOSTROENIE, 27, AUG 1961, PP. 45-46
THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER
OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN ONLY.
IT CONTAINS AN EXTENSIVE DISCUSSION OF VARIOUS
TECHNOLOGICAL PROBLEMS WHICH WERE CONNECTED WITH
CONSTRUCTION OF THE ICEBREAKER. INDIVIDUAL
ELEMENTS OF THE ASSEMBLY ARE DESCRIBED IN DETAIL.
L. TRANSLATION OPTIONAL.
ICEBREAKER LENIN
LENIN ICEBREAKER
ICEBREAKERS, CONSTRUCTION
CONSTRUCTION, ICEBREAKERS
ICEBREAKERS, ASSEMBLY
ASSEMBLY, SHIPS
65002
ANDRIANOV, R.D.
METAL WORKING AND ASSEMBLING OF HULL AND DECK
SECTIONS OF THE ICEBREAKER LENIN.=
SUDOSTROENIE, 27, AUG 1961, PP. 46-48
THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER
OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN ONLY.
IT DESCRIBES BRIEFLY SOME OF THE TECHNOLOGICAL
OPERATIONS CONNECTED WITH ASSEMBLY OF THE ICE
BREAKER. TRANSLATION OPTIONAL.
ICEBREAKER LENIN
LENIN ICEBREAKER
ICEBREAKERS, ASSEMBLY
ASSEMBLY, ICEBREAKERS
65003
GAUSENOK, A.A.
GLOZMAN, M.K.
HULL ASSEMBLING AND LAUNCHING OF THE ICEBREAKER
LENIN.=
SUDOSTROENIE, 27, AUG 1961, PP. 48-53
THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER
OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN ONLY.
IT DESCRIBES THE PROBLEMS ENCOUNTERED DURING AND
THE PROCEDURE OF HULL ASSEMBLY OF THE ICEBREAKER.
LOCATION, ORDER, SIZE AND WEIGHT OF INDIVIDUAL
SECTIONS ARE MENTIONED. SEVERAL PHOTOGRAPHS AND
SKETCHES ARE INCLUDED. THE LAUNCHING EQUIPMENT IS
BRIEFLY DISCUSSED. EXCEPT FOR THIS INFORMATION,
THE ARTICLE DEALS WITH COMMON TECHNOLOGICAL PROBLEMS
WHICH USUALLY APPEAR DURING ASSEMBLY OF HULLS OF
SIMILAR SIZE.
ICEBREAKER LENIN
LENIN ICEBREAKER
ICEBREAKERS, ASSEMBLY
ASSEMBLY, ICEBREAKERS
65004
MACOV, V.V.
WELDING IN CONSTRUCTION OF THE NUCLEAR ICEBREAKER
LENIN.=

65001 010
65001 101
65002 201
65001 202
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65002 201
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65004 101
65004 201
65004 202

SUDOSTROENIE, 27, APR 1961, PP. 52-56
THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER
OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LENIN
ONLY.

IT DESCRIBES WITHOUT MUCH DETAIL THE USE OF MAN-
UAL AND AUTOMATIC WELDING AND CUTTING DURING
ASSEMBLY OF THE HULL STRUCTURE. SPECIAL PROBL-
EMS RESULTING FROM WELDING AND CUTTING OF STAI-
NLESS-STEEL PARTS OF THE HULL ARE MENTIONED, B-
UT VIRTUALLY NO SPECIFIC INFORMATION IS DISCLO-
SED. SIMILAR ATTENTION IS GIVEN TO WELDING OF
STERN AND STERN STRUCTURES AND TO WELDING OF
PIPELINES.

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, CONSTRUCTION

CONSTRUCTION, ICEBREAKERS

ICEBREAKERS, ASSEMBLY

ASSEMBLY, ICEBREAKERS

WELDING TECHNIQUES

65005

ANDREEVA, N.A.

REPNACKIJ, G.V.

ALEKSEENKO, A.P.

SPECIAL DRILLING EQUIPMENT USED IN CONSTRUCT-
ION OF THE NUCLEAR ICEBREAKER LENIN.=

SUDOSTROENIE, 26, APR 1960, PP. 52-56

VARIOUS SPECIAL DRILLING MACHINES WHICH HAVE B-
EEN USED FOR MACHINING DIRECTLY ON THE SHIP AR-
E DESCRIBED. THIS APPEARED NECESSARY IN CASE
OF LARGE-SIZE PARTS. PROPELLER SHAFTS, STERN
STRUCTURE, AND SUPPORTS OF SHIP EQUIPMENT ARE
DISCUSSED IN PARTICULAR. THE ARTICLE DESCRIBE
S THE TOPIC IN CONSIDERABLE DETAIL, INCLUDING
MANY TECHNICAL DATA, TECHNOLOGY AND DRILLING O-
PERATIONS PERFORMED.

LENIN ICEBREAKER

ICEBREAKER LENIN

ICEBREAKERS, ASSEMBLY

ASSEMBLY, ICEBREAKERS

65006

ANONYMOUS

A SHIP FOR POLAR REGIONS.=

MOTOR BOATS FOR ICEBREAKERS.=

SUDOSTROENIE, 26, JAN 1960, P. 78

THESE ARE TWO SHORT ABSTRACTS OF ARTICLES WHIC-
H HAVE APPEARED ELSEWHERE.

THE FIRST ONE REFERS TO A GERMAN CARGO SHIP DE-
SIGNATED FOR NAVIGATION IN ICE. FOR ORIGINAL
REFERENCE, SEE HANSA 7, NO. 30/31, 1959.

THE SECOND ONE DESCRIBES LIGHT BOATS MADE OF R-
EINFORCED PLASTICS AND USED ON U.S. ICEBREAKER
S. ORIGINAL REFERENCE IS BUREAU OF SHIPS JOUR-
NAL, VI, VOL. 8, NO. 2, 1959.

ICE-GOING SHIPS

SHIPS, ICE-GOING

ICEBREAKERS, BOATS

BOATS, ICEBREAKERS

65007

KLOPOTOV, B.E.

65004	251
65004	301
65004	302
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FROM RAILWAYS TO THE NUCLEAR ICEBREAKER (FR
ON THE HISTORY OF THE ADMIRALTEUSKIY SHIPYARD)

•=
SUDDOSTROENIE, 23, JAN. 1961, PP. 41-45
A SHORT HISTORY OF THE ADJUST SHIPYARD IN Lening
RAD SINCE 1713 IS GIVEN. SOME ATTENTION IS PA
ID TO THE CONSTRUCTION OF ICEBREAKER LENIN, SO
ME OF THE NEWLY DEVELOPED TECHNIQUES ARE MENTI
ONED AND NAMES OF MANY PERSONS PARTICIPATING I
N THIS PROJECT ARE GIVEN.

ICEBREAKERS, HISTORY
HISTORY, ICEBREAKERS
ADMIRALTEUSKIY SHIPYARD
SHIPYARD, ADMIRALTEUSKIY
65004
ANONYMOUS

ICEBREAKERS OF M. O. BRITNEV.=
SUDDOSTROENIE, 26, JAN 1960, P. 25
A SHORT HISTORY OF RUSSIAN ICEBREAKER DESIGN I
S GIVEN. PRIORITY IS ATTRIBUTED TO THE PIONEER
WORK OF M. O. BRITNEV OF KRONOSHTAT WHO C
ONSTRUCTED THE FIRST ICEBREAKER PAULOT IN 1862
BY REMODELING A PECULIAR HARBOR STEAMER. 13 R
EFERENCES TO HISTORY OF RUSSIAN ICEBREAKERS AR
E GIVEN.

RUSSIAN ICEBREAKERS
ICEBREAKERS, HISTORY
HISTORY, ICEBREAKERS
ICEBREAKERS, RUSSIAN
65009
ANONYMOUS

CONSTRUCTION OF THE NUCLEAR ICEBREAKER.=
SUDDOSTROENIE, 23, JAN 1957, PP. 11-14
THIS IS A PRELIMINARY ARTICLE DESCRIBING MAIN
CONSIDERATIONS AND STRUCTURAL FEATURES OF THE
LENIN ICEBREAKER.
THE ADVANTAGE OF THE NUCLEAR PROPULSION LIES B
OTH IN THE LENGTH OF INDEPENDENT NAVIGATION AN
D IN MAINTAINING THE RATIO OF POWER CAPACITY T
O WATER DISPLACEMENT. THIS RATIO (44 000 HP.
TO 16 000 TONS = 2.8) IS PROPORTIONAL TO THE
ICEBREAKING CAPACITY AND WAS LOWER THAN ONE ON
OLD STEAM ICEBREAKERS. COMPARATIVE NAVIGATIO
N PERIOD OF A DIESEL-ELECTRIC ICEBREAKER OF TH
E SAME SIZE WOULD BE ONLY 16 WEEKS AND THE POW
ER CAPACITY WOULD BE ONLY 30 000 HP. HENCE, T
HE ABOVE MENTIONED RATIO WOULD BE 1.9.
SOME STRUCTURAL DETAILS, GENERAL ASSEMBLY AND
WELDING PROCEDURES ARE MENTIONED. TRANSLATION
RECOMMENDED.

ICEBREAKER LENIN
LENIN ICEBREAKER
ICEBREAKERS, CONSTRUCTION
CONSTRUCTION, ICEBREAKERS
65010
GUNDORIN, A.A.

STABILITY OF MODERNIZED, RE-EQUIPPED SHIPS.=
SUDDOSTROENIE, 29, JAN 1963, PP. 62-64
THE INTERESTING PART OF THIS ARTICLE IS THAT D
EALING WITH THE ICEBREAKER SIBIR WHICH IS COV

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PLATELY REBUILT IN 1959. ITS DISPLACEMENT IS
 6491 TONS. NO OTHER DATA IS GIVEN.
 ICEBREAKER OF THE
 SIBIR ICE-BREAKERS
 ICEBREAKERS, MODERNIZATION
 MODERNIZATION, ICEBREAKERS
 65011
 ANONYMOUS
 NEW CANADIAN ICEBREAKERS.=
 SUDOSTROENIE, 26, JUN 1960, PP. 56-59
 THIS IS A SHORT SUMMARY OF TWO ENGLISH ARTICLES
 ON NEW CANADIAN ICEBREAKERS.
 THE FIRST ONE DEALS WITH A 4250 HP ICEBREAKER
 CAMSELL. ORIGINAL REFERENCE CANADIAN SHIPPING
 AND MARINE ENGR. NEWS XII, 1959.
 THE SECOND ONE DESCRIBES A 15 000 HP ICEBREAKER,
 JOHN A. MACDONALD. THIS WAS THE LARGEST CANADIAN
 ICEBREAKER AS OF 1960. ORIGINAL REFERENCE
 SHIPPING REGISTER AND SHIPBUILDER, VOL. X
 LII, NO. 12, 1959.
 CANADIAN ICEBREAKERS
 ICEBREAKER CAMSELL
 CAMSELL ICEBREAKER
 ICEBREAKER JOHN A. MACDONALD
 JOHN A. MACDONALD ICEBREAKER
 ICEBREAKERS, CANADIAN
 65012
 KASSELL, B.M.
 RUSSIA S ICEBREAKERS.=
 REFERENCE UNKNOWN, PP. 137-152
 THIS IS AN EXTENSIVE SURVEY ARTICLE WHICH COVERS
 THE HISTORY OF DEVELOPMENT OF ICEBREAKERS
 OPERATED AND PARTLY BUILT IN RUSSIA BETWEEN 1900
 AND 1950. EQUAL CONSIDERATION IS GIVEN TO
 TECHNICAL DATA AND TO POLITICAL AND ECONOMICAL
 BACKGROUND. IN ENGLISH.
 RUSSIAN ICEBREAKERS
 ICEBREAKERS, HISTORY
 HISTORY, ICEBREAKERS
 ICEBREAKERS, RUSSIAN
 65013
 MORLEY, J.P.
 ICEBREAKERS, THEIR CONSTRUCTION AND USE.=
 REFERENCE UNKNOWN, PP. 6-12
 THIS ARTICLE DESCRIBES SHORTLY THE HISTORY OF
 ICEBREAKING SHIPS AND MODERN TRENDS OF DEVELOPMENT.
 THEN DETAILED INFORMATION IS GIVEN ON THE
 MOSKVA CLASS ICEBREAKER. IN ENGLISH.
 ICEBREAKERS, HISTORY
 HISTORY, ICEBREAKERS
 MOSKVA CLASS
 65014
 KASSELL, B.M.
 MARINE ENGINEERING NOTES FROM THE SOVIET UNION.=
 J. AMER. SOC. NAVAL ENGRS., AUG 1962, PP. 571-580
 THIS ARTICLE CONTAINS SHORT SUMMARIES FROM SOVIET
 SERIALS. A LARGE VARIETY OF TOPICS IS INCLUDED.
 ALSO A SHORT GENERAL PARAGRAPH ON ICEB

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[illegible]

ALICE A. JOHNSON

101-0100 SHIPS

S-IPS, YCE-GOING

ICEFEARERS, RUSSIAN.

65, 1966, p. 103.

SACRELL, D. J.

MARINE ENGINEERING NOTES FROM THE SOVIET PRE
SS.

J. AMER. SOC. NAVAL ENGRS., FEB 1962. PP. 71-82

THIS IS ANOTHER ARTICLE OF THE AUTHOR BASED ON SUMMARIES FROM SOVIET SERIALS. AGAIN, ALMOST NO REFERENCES ARE GIVEN. A VARIETY OF TOPICS IS TREATED, INCLUDING VERY SHORT NOTES ON DAMAGE TO SEVEN CLASS ICE-STRENGTHENED SHIPS BUILT IN FINLAND IN 1945. THEN THERE IS A SHORT DESCRIPTION OF A CLASS OF OCEANOGRAPHIC SHIPS BUILT IN FINLAND IN 1968 FOR USE IN THE ARCTIC.

THOSE, HOWEVER, ARE VERY SMALL (400 HP, 810 TONS) SHIPS WITH WOODEN HULLS.

2. SS LAB TECHNICIANS

CH-35AK-1RS. DAMAGE

2. PAGE: ICEBREAKERS

ICE-BREAKERS, RUSSIAN

65016

GERYAK, E.

NORTH TO THE PASSAGE. =

STEELEWAYS, REFERENCE UNKNOWN, PP. 2-5

THIS SHORT ARTICLE DESCRIBES SOME RECENT DEVELOPMENT OF CANADIAN ICEBREAKERS. IT MENTIONS CONSTRUCTION OF A NEW 24 000 HP TRIPLE SCREW STEAM TURBO-ELECTRIC ICEBREAKER WHICH SHALL BE 366 FEET LONG AND HAVE 13 300 TONS. NO DETAILS ARE GIVEN. NEEDS FOR ICEBREAKING IN CANADA ARE REVIEWED.

CANADIAN ICEBREAKERS

ICE-PEAKERS, CANADIAN

6307

PAVLOV, A. I.

GLUING OF SHIP METALLIC STRUCTURES. =

SUPPOSTBOENME, 25, DEC 1959, PP. 36-41

THIS IS AN EXPOSITORY ARTICLE ON GLUING OF METALS. SOME TYPICAL JOINTS ARE SHOWN AND RELEVANT FORMULAE FOR STRENGTH COMPUTATION LISTED. MAIN ATTENTION IS GIVEN TO EPOXY RESINS AND SOME APPLICATIONS ARE NOTED.

METALS, GLUING

GLUING, METALS

65070

VAGILEV, L. G.

FOREIGN DESIGN AND CONSTRUCTION OF MILITARY
AND CARGO SHIPS WITH NUCLEAR POWER PLANTS.=

SLDOOSTROV, E, 23, MAY 1957, PP. 59-62

THIS IS A SUMMARY OF ABOUT 200 HISTORY, REFINANCING ON THE TITLE TOPIC. IT INCLUDES U. S. HIGH SEAS SURVEY, INVESTIGATING AND SEARCHING, AND OTHER SURVEY AND SEARCH SHIPS. OTHER MILITARY AND CIVILIAN VESSELS AND OTHER HIGH SEAS CONSIDERED OR ACTUALLY CONSTRUCTED IN 1956 IN ENGLAND, FRANCE, GERMANY, SCANDINAVIA AND IN JAPAN.

SHIPS, POWER PLANTS
POWER PLANTS, SHIPS
PROPULSION, NUCLEAR
NUCLEAR, PROPULSION

65019

SAFONOV, A. I.

EXPERIENCE WITH USE OF AUTOMATIC WELDING FOR VERTICAL SITE WELDS OF SHIP HULLS.=

SUDOSTROENIE, 23, NOV 1957, PP. 31-34

THIS IS A PRACTICAL ACCOUNT OF APPLICATION OF AUTOMATIC WELDING TECHNIQUES FOR VERTICAL JOINTS. THE PROCEDURE IS DESCRIBED IN DETAIL THE

APPARATUS IS NOT. IT IS CONCLUDED THAT BOTH ARC AND SUBMERGED ARC WELDING IS APPLICABLE AND RESULTING PROPERTIES OF JOINTS MEET THE REQUIREMENTS OF THE USSR REGISTER. THE MAIN EFFECT IN LABOR-SAVING RESULTS FROM THE FACT THAT NO STRAIGHTENING OF WELDED PARTS OF HULL SHELL IS NECESSARY.

WELDING, AUTOMATIC
AUTOMATIC, WELDING
HULL, CONSTRUCTION
CONSTRUCTION, HULL
METALS, WELDING
WELDING, METALS

6' ~ 20

Z, 30 TIN, V.F.

VYCHEGZHANIN, A. A.

AUTOMATIC VERTICAL WELDING IN TANKER CONSTRUCTION.

SUDOSTROENIE, 22, NOV 1956, PP. 28-30

THIS IS A PRACTICAL ACCOUNT OF THE TITLE TOPIC

• IT IS SHOWN THAT AN AUTOMATIC WELDING MACHINE A-433, WHICH WAS DEVELOPED BY THE E. O. PATON (WELDING RESEARCH) INSTITUTE OF THE UKRAINIAN ACADEMY OF SCIENCES, IN 1955 MAY BE SUCCESSFULLY USED. THE E. O. PATON INSTITUTE HAS A CONSIDERABLE REPUTATION IN THE FIELD OF WELDING

TECHNICAL DATA OF A-433 AND ITS PERFORMANCE ARE DESCRIBED. IT IS CONCLUDED THAT ITS USE FOR VERTICAL WELDING OF 3/4 IN. PLATES IS SATISFACTORY AND SAVES LABOR CONSIDERABLY. WELDING OF BOTH CARBON AND LOW-ALLOY STEELS WAS TRIED OUT. HOWEVER, A FORMER TYPE (A 411) OF A SIMILAR MACHINE RATED AS POOR.

WELDING, AUTOMATIC
AUTOMATIC, WELDING
WELDING EQUIPMENT

65021

DUBRAVIN, A. I.

AN OUTSTANDING POLAR EXPEDITION.=

SUDOSTROENIE, 31, SEP 1965, PP. 68-74

[illegible]

508

ST-71
THE ICE-...
ICEBREAKER...
HISTORY, ICEBREAKERS

65026

ZYLEV, B.

THE FIRST ICEBREAKER.=

MORSKOU FLOT, 24, DEC 1914, PP. 34-35

THIS IS AN HISTORICAL ACCOUNT MARKING THE 100TH ANNIVERSARY OF CONSTRUCTION OF THE FIRST ICEBREAKER PAJLOT. IT WAS ACTUALLY AN ICE-STRONG THINNED STEELER, CONSTRUCTED BY BRISTOL (26 M LONG, DRAUGHT 2.5 M, 85 HP). THE DEVELOPMENT IS FOLLOWED UP TO ERMAK (1898) AND IS FINISHED BY MENTIONING LENIN.

ICEBREAKER PAJLOT

PAJLOT ICEBREAKER

ICEBREAKERS, HISTORY

HISTORY, ICEBREAKERS

65027

ANONYMOUS

HARBOR ICEBREAKER DOBRYNJJA NIKITICH.=

SUDOSTROENIE, 31, SEP 1964, 2 PP.

THIS IS RATHER AN ADVERTISEMENT BUT IT GIVES THE FOLLOWING TECHNICAL DATA OF THE ICEBREAKER

MAX. LENGTH 67.7 M, LENGTH AT WATERLINE 62.5 M, BREADTH MAXIMUM 18.1 M, AT WATERLINE 17.5 M, DRAUGHT 5.5 M, DEPTH 8.3 M, WATER DISPLACEMENT 2700 TONS, SPEED 14 KNOTS. IT MAY BE SEEN THAT THIS DATA IS IDENTICAL WITH THOSE GIVEN IN REFERENCES 55014, 75015 AND 55050, RESPECTIVELY. THERE THE ICEBREAKER WAS NOT IDENTIFIED (55014, 75015) OR DESCRIBED AS LEDOKOL CLASS.

INDEED, THIS DESIGNATION APPEARS ON ONE OF THE PHOTOGRAPHS WHICH SHOWS AN ICEBREAKER OF THE SAME CLASS AS THE DOBRYNJJA NIKITICH.

LEDOKOL CLASS

ICEBREAKER DOBRYNJJA NIKITICH

DOBRYNJJA NIKITICH ICEBREAKER

ICEBREAKERS, DESIGN

DESIGN, ICEBREAKERS

ICEBREAKERS, CONSTRUCTION

CONSTRUCTION, ICEBREAKERS

HARBOR, ICEBREAKERS

ICEBREAKERS, HARBOR

RUSSIAN ICEBREAKERS

65028

MELESHKO, V.

ICEBREAKING OPERATIONS IN THE GULF OF FINLAND.=

MORSKOU FLOT, 23, FEB 1963, PP. 22-23

THIS IS A SHORT BUT RATHER DETAILED ANALYSIS OF THE TITLE TOPIC DURING WINTERS 1960-1961 AND 1961-1962. ICEBREAKING PERFORMANCE OF ICEBREAKERS LENINGRAD, KAPITAN MORONIN AND SIBIRJAKO V. IS EVALUATED. IT IS SHOWN THAT THE WORKING PERIOD OF THOSE ICEBREAKERS HAD AMOUNTED TO 82 PER CENT OF THE TOTAL OPERATION TIME.

MOVING SPEEDS OF CARAVANS FOLLOWING THOSE ICEBREAKERS ARE ALSO LISTED AS A FUNCTION OF THE

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N (EXPERIENCE FROM THE ICEBREAKER MOSKVA). =
 MORSKOJ FLOT, 22, JAN 1965, PP. 35-36
 THIS IS A BRIEF ACCOUNT OF THE AUTHORS EXPERIENCE ON VARIOUS ICEBREAKERS, MOST RECENTLY AS CAPTAIN OF THE ICEBREAKER MOSKVA. IT DESCRIBES ICEBREAKING PERFORMANCE OF ICEBREAKERS OF THE 7000-8000 HP CLASS AND REQUIREMENTS ON THE FOLLOWING SHIPS. THEN THERE IS A VERY BRIEF NOTE ON THE PERFORMANCE OF THE MOSKVA ICEBREAKER AND ON THE GREAT USEFULNESS OF ICE-STRENGTHENED CARGO SHIPS OF LENA CLASS. TRANSLATION AVAILABLE DDC, D PHYS. R(G), REPT. MISC., G. 12, OTTAWA, JAN 1963.
 ICEBREAKERS, OPERATION
 OPERATION, ICEBREAKERS
 MOSKVA CLASS
 LENA CLASS
 65032
 POMERANEC, K.S.
 A NEW RESEARCH SHIP. =
 PROBLEMY ARKTIKI I ANTARKTIKI 9, 1961, P. 96-98
 THIS IS A SHORT DESCRIPTION OF THE RESEARCH SHIP AZIMUT WHICH WAS BUILT IN FINLAND IN 1958 AND ASSIGNED TO OCEANOGRAPHIC STUDIES IN ARCTIC SEAS. IT IS A ONE-PROPELLER DIESEL-ELECTRIC SHIP WITH WOODEN STRUCTURE. DISPLACEMENT 810, LENGTH 40 M, BREADTH 9 M, 400 H.P. MAX. SPEED 10.5 KNOTS. THE SHIP IS WELL EQUIPPED AND SATISFIES ICEBREAKER CLASS REQUIREMENTS.
 ICEBREAKER AZIMUT
 AZIMUT ICEBREAKER
 ARCTIC RESEARCH
 65033
 EITNER, W.
 TIMM, E.
 STATISTICAL EVALUATION OF TECHNICAL FAILURES DURING 1960. =
 SCHIFFRAUTECHNIK II, OCT 1961, P. 525-526
 THIS IS A RATHER INTERESTING SUMMARY OF SHIP FAILURES. IT APPEARS THAT 55% ARE DAMAGES OF VARIOUS MACHINES, AND ABOUT 20% DAMAGES OF PROPULSION SYSTEMS.
 SIX MODES OF BASIC FAILURE REASONS ARE SUBDIVIDED INTO A TOTAL OF 35 ITEMS AND EVALUATED IN PER CENTS.
 FAILURE
 SHIPS, DAMAGE

65031	202
65031	251
65031	501
65031	502
65031	503
65031	504
65031	505
65031	506
65031	507
65031	508
65031	509
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65032	703
65033	010
65033	101
65033	102
65033	201
65033	202
65033	251
65033	501
65033	502
65033	503
65033	504
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65033	506
65033	507
65033	701
65033	702

SHIPS, ICE-GOING	65037	702
CHICAGO CARGO SHIP	65037	703
CARGO SHIP, CHICAGO	65037	704
CLEVELAND CARGO SHIP	65037	705
CARGO SHIP, CLEVELAND	65037	706
65038	65038	011
ANONYMOUS	65038	101
A MODERN HARBOR TUG WITH DIESEL-ELECTRIC SCR	65038	201
EW PROPELLER AND WITH A NOZZLE BUDDER.=	65038	202
SCHIFF UND HAFEN, NOV 1959, P. 1015-1016	65038	251
THIS IS A SHORT DESCRIPTION OF THE MICHEL CLAS	65038	501
S TUGS FOR SERVICE IN THE HAMBURG HARBOR. LEN	65038	502
GTH 26.6 M, BREADTH 7.20 M, DRAUGHT 3.60 M, 67	65038	503
5 HP, ABOUT 11 TONS OF PULLING FORCE.	65038	504
HARBOR TUGS	65038	701
TUGS, HARBOR	65038	702
MICHEL CLASS	65038	703
65039	65039	011
TOKONOGOV, L. B.	65039	101
THE ELECTROSLAG WELDING OF PARTS OF SHIPS.=	65039	201
AUTOMATIC WELDING, APR 1962, P. 49-54	65039	251
THIS IS A DESCRIPTIVE ARTICLE ON AUTOMATIC ELE	65039	501
CTROSLAG WELDING OF SHIP PARTS OF LARGE CROSSE	65039	502
CTIONS. THE WELDING TECHNOLOGY IS MORE ECONOM	65039	503
ICAL THAN MANUFACTURING OF LARGE CASTINGS. VA	65039	504
RIOUS APPLICATIONS ARE DESCRIBED IN DETAIL. I	65039	505
N ENGLISH.	65039	506
WELDING TECHNIQUES	65039	701
WELDING, MANUAL	65039	702
WELDING, AUTOMATIC	65039	703
SHIPS, CONSTRUCTION	65039	704
CONSTRUCTION, SHIPS	65039	705
65040	65040	011
SHAERMAN, M. R.	65040	101
A PROCEDURE FOR DETERMINING THE LEVEL OF MEC	65040	201
HANIZATION OF WELDING OPERATIONS IN SHIPBUILDI	65040	202
NG.=	65040	203
AUTOMATIC WELDING, JUL 1964, P. 72-78	65040	251
THIS IS AN ECONOMY STUDY ON THE DESIRABLE LEVE	65040	501
L OF MECHANIZATION OF WELDING OPERATION ON SHI	65040	502
PBUILDING. IN ENGLISH.	65040	503
SHIPS CONSTRUCTION	65040	701
CONSTRUCTION SHIPS	65040	702
65041	65041	011
OKERBLOM, N. O.	65041	101
RATIONAL PLANNING OF TECHNOLOGICAL PROCESSES	65041	201
FOR THE FABRICATION OF WELDED STRUCTURES.=	65041	202
AUTOMATIC WELDING, 1960, P. 5-8	65041	251
THIS IS A DESCRIPTIVE ARTICLE ON THE ROLE OF T	65041	501
ECHNOLOGICAL DESIGN OF WELDING STRUCTURES. IN	65041	502
PARTICULAR, THE PROBLEM OF RIGIDITY OF THE ST	65041	503
RUCTURE IS EXAMINED FROM THE VIEWPOINT OF WELD	65041	504
ING STRESSES.	65041	505
WELDING TECHNIQUES	65041	701
SHIPS CONSTRUCTION	65041	702
CONSTRUCTION SHIPS	65041	703
65042	65042	011
HARMS, H.	65042	101
U. S. NAVY ICEBREAKER GLACIER.=	65042	201

DAMAGE, SHIPS

65034

ANONYMOUS

TUGS AND ICEBREAKERS OF 540 H.P.=

JAHRBUCH DER SCHIFFFAHRT, 1961, P. 132-135

THIS IS A BRIEF DESCRIPTION OF SIX TUGS AND SEVEN ICEBREAKERS WHICH ARE IN USE IN EAST GERMANY.

HARBOR, TUGS

TUGS, HARBOR

ICEBREAKERS, HARBOR

HARBOR ICEBREAKERS

GERMAN ICEBREAKERS

ICEBREAKERS, GERMAN

65035

ANONYMOUS

ICEBREAKER TOR.=

JAHRBUCH DER SCHIFFFAHRT, 1966, P. 121

THIS IS A BRIEF DESCRIPTION OF THE TITLE ICEBREAKER WHICH WAS BUILT IN FINLAND IN 1962-1964.

THERE IS AN IDENTICAL ONE CALLED TARMO. DAT

A LENGTH 85.4 M, BREADTH 21.2 M, DEPTH 9.5 M,

DRAUGHT MAX. 6.50 M, DISPLACEMENT 5230 TONS,

12 000 H.P. (4 MAIN DIESEL ENGINES, 8 CYLINDER

WARTSILA SULZER PER 3455 H.P.).

ICEBREAKER TOR

TOR ICEBREAKER

ICEBREAKER TARMO

TARMO ICEBREAKER

65036

ANONYMOUS

NUCLEAR ICEBREAKER LENIN.=

JAHRBUCH DER SCHIFFFAHRT, 1963, P. 98-99

A SCHEMATIC DRAWING OF THE PROPULSION SYSTEM OF THE ICEBREAKER IS SHOWN.

ICEBREAKER LENIN

LENIN ICEBREAKER

65037

HARMS, H.

MS CHICAGO FOR SERVICE ON THE GREAT LAKES.=

SCHIFF UND HAFEN, AUG 1959, P. 729-730

THIS IS A SHORT DESCRIPTION OF THE TITLE SHIP.

IT IS AN ICE STRENGTHENED CARGO SHIP, ITS SI-
STER SHIP IS CLEVELAND. IT WAS BUILT IN FRANC

E AND BELONGS TO THE FRENCH LINE. LENGTH 137.

20 M, BREADTH 19.00 M, DEPTH 7.60 M, DRAUGHT 7

.20 M, DISPLACEMENT 12230 TONS, 7000 HP, 1515

KNOTS, LOAD SPACE 13580 CUBIC M.

ICE-GOING SHIPS

65033	701
65034	101
65034	101
65034	201
65034	251
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65036	701
65036	702
65037	011
65037	101
65037	201
65037	251
65037	501
65037	502
65037	503
65037	504
65037	505
65037	506
65037	507
65037	701

SCHIFF UND HAFEN 8, FEB 1958, P. 128-129	65042	251
THIS IS A SHORT DESCRIPTION OF THE TITLE ICERR	65042	501
EAKER.	65042	502
ICEBREAKER GLACIER	65042	701
GLACIER ICEBREAKER	65042	702
65043	65043	011
HARMS, H.	65043	101
MOTOR SHIP MAGGA DAN.=	65043	201
SCHIFF UND HAFEN, 8, NOV 1956, P. 941-942	65043	251
THIS IS A SHORT DESCRIPTION OF THE TITLE SHIP.	65043	501
IT IS A CARGO AND PASSENGER SHIP WITH ICE-ST	65043	502
RENGTHENING. LENGTH 73.13 M, BREADTH 13.7 M,	65043	503
DEPTH 7.30 M, DRAUGHT 6127 M, CAPACITY 1855 TO	65043	504
NS, 2020 HP, 12.5 KNOTS.	65043	505
MAGGA DAN CARGO SHIP	65043	701
CARGO SHIP, MAGGA DAN	65043	702
ICE GOING SHIPS	65043	703
SHIPS, ICE GOING	65043	704

75001
BRANDAUS, A.I.
JUDOVIN, B.S.
POWER PLANT ON THE NUCLEAR ICEBREAKER LENIN.

SUDOSTROENIE, 27, AUG 1961, PP. 21-29
THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER
OF SUDOSTROENIE WHICH REFERS TO ICEBREAKER LEN
IN ONLY.

IT DESCRIBES IN DETAIL BASIC PRINCIPLES OF THE
NUCLEAR POWER PLANT DESIGN, THE STRUCTURE OF
RELATED ELECTRIC POWER PRODUCTION FACILITIES (
THERMOELECTRIC GENERATORS, SPARE AND EMERGENCY
DIESEL-ELECTRIC GENERATORS, ETC.), THE STEAM
GENERATION AND CONDENSATION CIRCUIT, CONTROL E
QUIPMENT AND ALSO BRIEF RESULTS OF TESTING OF
THE POWER EQUIPMENT. SEVEN SCHEMATIC DRAWINGS
ARE INCLUDED. TRANSLATION AVAILABLE OTS 62-
11-111, JPRS12183, 29 JAN 1962.

ICEBREAKER LENIN
LENIN ICEBREAKER
ICEBREAKERS, POWER PLANTS
POWER PLANTS, ICEBREAKERS
PROPULSION, NUCLEAR
NUCLEAR, PROPULSION

75002
KHAJIKIN, A.B.
JAGODKIN, V.JA.

CALCULATION OF STATICAL CHARACTERISTICS OF P
ROPELLER-ELECTRIC FACILITIES OF ICEBREAKING SH
IPS.

SUDOSTROENIE, 32, JAN 1966, PP. 57-60
CALCULATION OF FORCES AND MOMENTS FOR VARIOUS
WORKING CONDITIONS OF PROPELLERS ON ICEBREAKER
S ARE OUTLINED.

SPECIAL ATTENTION IS GIVEN TO THE INFLUENCE OF
INTERACTION OF THE PROPELLER WITH A FLOE. TH
E PROCEDURE IS APPROXIMATE AND VERY SIMPLE. A
S A RESULT, PLOTS OF TOTAL MOMENTS ACTING ON A
PROPELLER SHAFT VS. SPEED OF ROTATION ARE OBT
AINED. ILLUSTRATIVE EXAMPLES ARE GIVEN FOR IC
EBREAKERS KAPITAN VORONIN, MOSKVA, LENINGRAD A
ND LENIN. IN SOME CASES, ACTUAL MEASUREMENTS

75001	010
75001	101
75001	102
75001	201
75001	202
75001	251
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75001	706
75002	010
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75002	251
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75002	511

ARTICLE 2. THE CALCULATION OF THE CAPACITY OF
SHIP POWER PLANTS BY THE METHOD OF STATISTICAL MODELING. TRANSLATION OPTIONAL

STATISTICAL ANALYSIS

SHIPS, POWER PLANTS

POWER PLANTS, SHIPS

COMPUTERS, SHIPS

COMPUTERS, ICEBREAKERS

COMPUTERS, ICEBREAKERS

COMPUTERS, LENIN

COMPUTERS, ICEBREAKER

ICEBREAKER KAPITA VOONIN

ICEBREAKER VOONIN ICEBREAKER

LENIN

S. P. G. F.

LENIN, N. A.

CAPACITY CALCULATION OF SHIP POWER PLANTS BY
THE METHOD OF STATISTICAL MODELING ON DIGITAL
COMPUTERS.=

SUDOSTROIE. 30, 13 1966, PP. 17-41

IT IS PROPOSED TO DETERMINE THE CAPACITY REQUIREMENTS OF A SHIP POWER PLANT FROM PROBABILITY CHARACTERISTICS WHICH ARE OBTAINED BY MEANS OF STATISTICAL MODELING ON COMPUTERS AND WHICH ARE BASED ON WORKING FEATURES OF PARTICULAR APPLIANCES AND OF ITS GROUPS. IN THIS WAY, THE RANDOM CHARACTER OF THE REQUIRED CAPACITY, IS DESCRIBED BY MATHEMATICAL PROBABILITY, MEAN SQUARE DERIVATION AND BY A DISTRIBUTION LAW. THE LATTER IS WELL APPROXIMATED BY NORMAL DISTRIBUTION LAW WHEN THE KOLMOGOROV CRITERION IS USED. THE STATISTICAL MODELING METHOD AND ITS PROGRAMMING IS DESCRIBED IN DETAIL.

STATISTICAL ANALYSIS

SHIPS, POWER PLANTS

POWER PLANTS, SHIPS

COMPUTERS USE

7500

GERCHEN, J. S.

THE EXPERIENCE OBTAINED DURING ASSEMBLY OF TURBO GENERATORS ON THE ICEBREAKER LENIN.=

SUDOSTROIE. 27, AUG 1961, PP. 56-58

THIS ARTICLE HAS APPEARED IN A SPECIAL NUMBER OF SUDOSTROIE WHICH REFERS TO ICEBREAKER LENIN ONLY.

TECHNOLOGICAL DETAILS OF THE PROCEDURE MENTIONED IN THE TITLE ARE DISCUSSED. THOSE AGAIN MAY BE CONSIDERED AS COMMON IN EQUIPMENTS OF SIMILAR SIZE. MORE ATTENTION IS GIVEN TO THE DESCRIPTION OF PARTICULAR PROCEDURES THAN TO GENERAL COMMENTS. TRANSLATION OPTIONAL.

LENIN ICEBREAKER

ICEBREAKER LENIN

ICEBREAKERS, ASSEMBLY

ASSEMBLY, ICEBREAKERS

ICEBREAKERS, POWER EQUIPMENT

POWER EQUIPMENT, ICEBREAKERS

75005

FLISTRATOV, F. M.

HIGH-CAPACITY SHIP ENGINES.=

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SUDOSTROENIE, 27, SEP 1961, PP. 64-74.
THIS IS AN EXTENSIVE REVIEW ARTICLE ON THE
RIGIDS OF CANDID BARKS. IT TALKS ABOUT 100
P ENGINES WITH CAPACITY FROM 1000 TO 20,000
HP. FIVE OF THE SIX RIVEN DEPENDENTS HAVE APP
EARED IN ENGLISH BETWEEN 1958 AND 1961.

SHIPS, ENGINES

ENGINES, SHIPS

75006

CHUKHRIN, L.A.

KUZMINA, T.M.

BRITTLE FRACTURES OF SHIP BOILERS PARTS.=

SUDOSTROENIE, 27, SEP 1961, PP. 61-61

A VERY BRIEF DESCRIPTION OF STEAM BOILER FAILU
RES INDUCED BY INTERCRYSTALLINE CORROSION IS G
IVEN. SOME CASES OF SUCH DAMAGE ARE MENTIONED

AND PROTECTIVE MEASURES ARE SUGGESTED. THE LA
TTER ONES CONSISTING MAINLY OF WATER TREATMENT
BY SODIUM NITRATE.

FAILURE

CORROSION

SHIPS, POWER EQUIPMENT

POWER EQUIPMENT, SHIPS

75007

MALISHEVSKIY, V.E.

SPECIAL WORKING FEATURES OF PROPELLERS POWER
EQUIPMENT OF ICEBREAKERS DURING IMPACT OR WED
GING OF BLADES IN ICE.=

SUDOSTROENIE, 27, MAY 1961, PP. 30-33

MAIN RISKS AND POSSIBLE DAMAGES TO POWER EQUIP
MENT AND TO PROPELLERS RESULTING FROM INTERACT
ION OF A PROPELLER WITH ICE ARE LISTED. IN OR
DER TO REDUCE SUCH DANGERS, EXCITING SETS MUST

BE EMPLOYED SO THAT A MORE UNIFORM PERFORMANC
E OF POWER EQUIPMENT COULD BE OBTAINED. SUCH
SETS AND OTHER PROTECTIVE MEASURES AND THEIR P
ERFORMANCE ON THE ICEBREAKER KAPITAL MELEKHOV
ARE DESCRIBED.

THE ARTICLE IS WELL WRITTEN AND GIVES A DETAILED
ACCOUNT OF THE TOPIC. TRANSLATION RECOMMEN
DED.

ICEBREAKERS, PROPELLERS

PROPELLERS, ICEBREAKERS

ICEBREAKERS, POWER EQUIPMENT

POWER EQUIPMENT, ICEBREAKERS

75008

MAKEDON, JU.A.

ON STRENGTH CALCULATION OF SHAFTS OF SHIPS A
VIGATING IN ICE.=

SUDOSTROENIE, 23, JAN 1957, PP. 14-18

THIS ARTICLE EVALUATES CONSTANTS IN A FORMULA
FOR STRENGTH CALCULATION OF PROPELLER SHAFTS W
HICH IS GIVEN IN THE 1956 DIRECTIONS FOR CLASS
IFICATION AND CONSTRUCTION OF SEA STEEL SHIPS
OF THE SEA REGISTER OF USSR.

A MORE ACCURATE ESTIMATE OF THESE CONSTANTS IS

GIVEN FOR THE CASE OF ICEBREAKING SHIPS. VAR
IOUS WAYS OF SHAFT LOADING, RESULTING FROM INT
ERACTION OF THE PROPELLER WITH ICE, ARE CONSID
ERED. SAMPLE CALCULATIONS ARE PRESENTED FOR I

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THIS IS A DETAILED STUDY OF THE PROBLEM OF THE
 SHAFTS OF ICEBREAKERS. THE STUDY IS DEDICATED TO
 BALANCING AND OPTIMIZING THE SHAFTS OF ICE-
 BREAKERS. THE EXPERIMENTAL DATA IS USED TO
 ASSESS THE ASSEMBLY OF THE SHAFTS OF ICE-
 BREAKERS. TRANSLATION OPTIONAL.

LENIN ICEBREAKER
 ICEBREAKER LENIN
 ICEBREAKERS, PROPELLERS
 PROPELLERS, ICEBREAKERS
 ICEBREAKERS, POWER PLANTS
 POWER PLANTS, ICEBREAKERS

75012

SHIFRIN, M. Sh.

CURRENT STATE AND WAYS OF DEVELOPMENT OF COM-
 PLEX AUTOMATION OF SHIP POWER PLANTS. =

SUDOSTROINIE, 23, JAN 1957, PP. 27-33

THIS IS AN EXTENSIVE TREATMENT OF THE TITLE TO
 PIC, RATHER OLD-FASHIONED TODAY. THE ONLY INTER-
 ESTING PART IS A DESCRIPTION AND A PRINCIPAL
 SCHEME OF AN AUTOMATED STEAM POWER PLANT OF A
 N ICEBREAKER. NO DATA OR NAME OF THE ICEBREAK-
 ER ARE MENTIONED. THE ENTIRE DESCRIPTION OF THE
 POWER PLANT APPEARS ON PP. 29 AND 30.

POWER PLANTS, AUTOMATION
 AUTOMATION, POWER PLANTS

75013

ZAICEV, I. A.

ON THE PROBLEM OF SELECTION OF POWER PLANT TYPE
 FOR SHIPS NAVIGATING IN ICE. =

SUDOSTROINIE, 25, OCT 1959, PP. 23-26

THIS IS A DESCRIPTION OF VARIOUS HYDRAULIC SYS-
 TEMS WHICH CAN TRANSFORM EFFECTIVELY THE TORSI-
 ON MOMENT OF A DIESEL ENGINE TO A PROPELLER SH-
 AFT. IT IS SHOWN THAT SUCH REPLACEMENT OF ELE-
 CTRIC TRANSFORMING UNITS IS VERY ADVANTAGEOUS
 ON ICEBREAKERS AND OTHER SHIPS WHICH NAVIGATE
 IN ICE SINCE THE HYDRAULIC TRANSFORMATION IS A
 MORE SUITABLE FOR OPERATING CONDITIONS DURING N-
 AVIGATION IN ICE. TRANSLATION OPTIONAL.

POWER PLANTS, SELECTION
 SELECTION, POWER PLANTS
 ICEBREAKERS, POWER PLANTS
 POWER PLANTS, ICEBREAKERS

75014

IGNATEV, M. A.

SIZE DETERMINATION OF PROPELLER SHAFTS FOR S-
 HIPS NAVIGATING IN ICE. =

SUDOSTROINIE, 25, JAN 1959, PP. 34-37

THIS IS A DETAILED STUDY OF PROPELLER SHAFT DE-
 SIGN FOR ICEBREAKERS. IT INCLUDES SOME DATA ON
 DAMAGE OF SHAFTS SUFFERED BY RUSSIAN ICEBREAK-
 KERS. VALUABLE TABLES ARE INCLUDED. TRANSLAT-
 ION RECOMMENDED.

ICEBREAKERS, DESIGN
 DESIGN, ICEBREAKERS
 PROPELLERS, ICEBREAKERS
 ICEBREAKERS, PROPELLERS
 ICEBREAKERS, DAMAGE

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 75012 400
 75013 400
 75014 400
 75015 400
 75016 400
 75017 400
 75018 400
 75019 400
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ICE BLOCKING OF COOLING SYSTEMS BY ICE. VARIOUS
WAYS ARE DISCUSSED. THEY INCLUDE SPECIAL
GRIDS, RECIRCULATION SYSTEMS, COOLING UNIT LO-
CATED AT HULL SHELL SIDES, ELECTROSTATIC PROTE-
CTION, ETC. TRANSLATION RECOMMENDED.

POWER PLANTS, COOLING SYSTEMS
COOLING SYSTEMS, POWER PLANTS

ICE-BREAKERS, POWER PLANTS
POWER PLANTS, ICE-BREAKERS
HARBOR ICE-BREAKERS
ICE-BREAKERS, HARBOR

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POWER PLANTS, PERFORMANCE TESTS
PERFORMANCE TESTS, POWER PLANTS
ICE-BREAKERS, POWER PLANTS
POWER PLANTS, ICE-BREAKERS
HARBOR ICE-BREAKERS
ICE-BREAKERS, HARBOR

75016

WAYS TO PERFECTION OF COOLING SYSTEMS OF ICE
BREAKERS POWER PLANTS.=

SUDOSTROE, 31, JAN 1965, PP. 26-29
THE MAIN PROBLEM CONSIDERED HERE IS HOW TO AVOID
ICE BLOCKING OF COOLING SYSTEMS BY ICE. VARIOUS
WAYS ARE DISCUSSED. THEY INCLUDE SPECIAL
GRIDS, RECIRCULATION SYSTEMS, COOLING UNIT LO-
CATED AT HULL SHELL SIDES, ELECTROSTATIC PROTE-
CTION, ETC. TRANSLATION RECOMMENDED.

POWER PLANTS, COOLING SYSTEMS
COOLING SYSTEMS, POWER PLANTS
ICE-BREAKERS, POWER PLANTS
POWER PLANTS, ICE-BREAKERS

75017

NICEVICH, A.K.
INVESTIGATION OF ECONOMICAL EFFECTIVENESS OF
SEA CARGO VESSELS WITH NUCLEAR POWER PLANTS I
N THE U.S.A..=

SUDOSTROE, 26, APR 1962, PP. 67-70
THIS IS AN EXTENSIVE AND DETAILED REVIEW OF THE
TITLE SUBJECT BASED MAINLY ON AMERICAN SOURCES,
WHICH ARE LISTED SEPARATELY. THE FOLLOWING
TOPICS ARE DISCUSSED DEVELOPMENT OF VARIOUS
TYPES OF LARGE CARGO SHIPS, THEIR MAIN TECHNICAL
CHARACTERISTICS, NUCLEAR REACTORS, THEIR WEIGHT,
PRICE, MAINTENANCE EXPENSES AND GENERAL CON-
CLUSIONS ON EFFECTIVENESS OF VARIOUS CARGO
SHIPS WITH NUCLEAR PROPULSION. COMPARISONS WITH
STANDARD PROPULSION SHIPS IS MADE FOR THE
FUTURE, NAMELY FOR 1965-7

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FOR THE PURPOSES OF THE
PROPELLERS, ICE-
BLADES, PROPELLERS

75025

DEJURIN, A.

PROTECTION AGAINST DAMAGE TO SHIPS NAVIGATING IN ICE.

MORSKOU FLOT, 19, JUL 1961, PP. 21-2

THE AUTHOR IS A NAVY CAPTAIN, 1940-1947, CAV.

EXPERIENCE WITH ICE-NAVIGATION, 1947-1957

THIS ARTICLE DESCRIBES THE EXPERIENCE OF THE

CHARLES WITH THE PROPELLERS AND BLADES

ED TO FORCES OF PROPELLERS AND BLADES

A. PROPER MANEUVERS AND THE USE OF ICE

D MINIMIZE THE DAMAGE TO THE PROPELLERS

THIS LAST SUBJECT IS DISCUSSED IN THE

WITH REGARD TO EXPERIENCE OBTAINED WITH THE

ICEBREAKER KAPITAN VILINOV.

PROPELLERS, DAMAGE

DAMAGE, PROPELLERS

ICEBREAKERS, PROPELLERS

PROPELLERS, ICEBREAKERS

75026

OVSOJANNIKOV, V.

TESTS OF MAIN DIESELS OF THE ICEBREAKER MOSKVA.

MORSKOU FLOT, 21, JUL 1961, PP. 25-27

THIS ARTICLE IS RATHER SIMILAR TO THAT DESCRIBED

ED IN 75030. SOME STAYINGS APPLY AGAIN. BUT

THIS ONE IS MUCH MORE DETAILED AND CONTAINS NO

RE DATA. THE DIESEL-ELECTRIC POWER PLANT IS

DESCRIBED IN DETAIL AND MUCH TECHNICAL DATA IS

INCLUDED. THEN ITS PERFORMANCE DURING STAYING

D TESTS IS DESCRIBED AND EVALUATED. DEFECTS

DISCOVERED AFTER TEST NAVIGATION ARE MENTIONED.

TRANSLATION RECOMMENDED.

MOSKVA ICEBREAKER

ICEBREAKER MOSKVA

POWER PLANTS, PERFORMANCE TESTS

PERFORMANCE TESTS, POWER PLANTS

ICE-REAKERS, POWER PLANTS

POWER PLANTS, ICE-REAKERS

75027

IGNATY, N. A.

STRENGTH CALCULATION OF PROPELLER BLADES OF

ICEBREAKERS AND SHIPS NAVIGATING IN ICE.

SUDOSTROJNIE, 33, JUL 1961, PP. 3-7

THIS IS A BRIEF ARTICLE ON THE TITLE TOPIC.

IT USES USUAL ASSUMPTIONS OF LOAD DISTRIBUTION

ON THE BLADE AND DERIVED FORMULAE FOR DESIGN

N. THE RESULTS ARE APPLIED TO 6 SHIPS ALREADY

IN OPERATION. TRANSLATION RECOMMENDED.

PROPELLERS, BLADES

BLADES, PROPELLERS

ICE-REAKERS, PROPELLERS

PROPELLERS, ICE-REAKERS

75028

KRAKOVIN, A. T.

MATHEMATICAL MODELING OF THE INTERACTION OF
A PROPELLER WITH ICE.=

SUDOSTROENIE, 30, MAR 1964, PP. 32-36

THIS IS A DETAILED AND ADVANCED STUDY ON MODEL
ING AND COMPUTER ANALYSIS OF AN ICEBREAKERS PO
WER PLANT PERFORMANCE HISTORY DURING INTERACTI
ON OF THE PROPELLER WITH ICE. IT IS CONCLUDED
THAT FAST ACTING EXCITATION EQUIPMENT SHOULD
BE USED FOR ICEBREAKERS POWER PLANTS, WHICH WO
ULD OPERATE ONLY DURING THE INTERACTION PERIOD
. SUCH EQUIPMENT MINIMIZES CHANCES OF WEDGING
OF BLADES IN ICE AND GENERALLY REDUCES THE PR
OBABILITY OF DAMAGE. THE INFLUENCE OF VARIOUS
PARAMETERS OF THE POWER PLANT ON THE WEDGING
REGIME IS ANALYZED AND FULLY EXPLAINED. A PRO
GRAMMING PROCEDURE IS DESCRIBED, WHICH MAY BE
USED TO CALCULATE OPTIMAL PARAMETERS OF A POWE
R PLANT FROM A GIVEN TIME DISTRIBUTION OF THE
ICE MOMENT. SUCH PROCEDURE SHOULD ENSURE BEST
PERFORMANCE OF THE POWER PLANT AND ITS SMOOTH
RESPONSE TO TRANSIENT EFFECTS. TRANSLATION R
ECOMMENDED.

COMPUTERS USE

ICEBREAKERS, POWER PLANTS

POWER PLANTS, ICEBREAKERS

ICEBREAKERS, POWER EQUIPMENT

POWER EQUIPMENT, ICEBREAKERS

75029

POZDEEV, A.V.

CONSTRUCTION OF NUCLEAR POWER PLANTS FOR MIL
ITARY AND COMMERCIAL VESSELS IN CAPITALIST COU
NTRIES.=

SUDOSTROENIE, 24, JAN 1958, PP. 53-66

THIS IS AN EXTENSIVE REVIEW BASED ON WESTERN (UN
LISTED) REFERENCES. IT SUMMARIZES WORK ON T
HE TITLE SUBJECT WHICH HAD BEEN DONE OR CONSID
ERED AT THAT TIME IN THE USA (ABOVE ALL), ENGL
AND, NORWAY, HOLLAND, FRANCE, SWITZERLAND, AND
IN WESTERN GERMANY.

NUCLEAR POWER PLANTS

POWER PLANTS, NUCLEAR

75030

OB, JANNIKOV, M.K.

SOME RESULTS OF TESTING OF MAIN ENGINES OF I
CEBREAKER MOSKVA.=

SUDOSTROENIE, 28, JUN 1962, PP. 45-46

THIS IS A SHORT DESCRIPTION OF PERFORMANCE TES
T RESULTS OF THE MOSKVA ICEBREAKER. A VARIETY
OF DATA IS GIVEN. PLOTS OF OUTPUT CHANGES AN
D FUEL CONSUMPTION OF MAIN ENGINES VS. SPEED O
F THE ICEBREAKER ARE SHOWN. TRANSLATION RECOM
MENDED.

MOSKVA ICEBREAKER

ICEBREAKER MOSKVA

POWER PLANTS, PERFORMANCE TESTS

PERFORMANCE TESTS, POWER PLANTS

ICEBREAKERS, POWER PLANTS

POWER PLANTS, ICEBREAKERS

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RORASHADSKI, V.L.

ELECTRIC DRIVE FOR THE SCREW OF THE ATOMIC ICEBREAKER LENIN.

ELEKTRICHESTVO 10, 1959, P. 50-56

THIS IS A DETAILED DESCRIPTION OF THE ELECTRIC POWER SYSTEM FOR THE ICEBREAKER PROPELLERS. IT INCLUDES MAIN TECHNICAL DATA ON THE ICEBREAKER, ITS MAIN CURRENT CIRCUIT DIAGRAM AND DETAILED ACCOUNT OF THE CONTROL SCHEME, INCLUDING ITS STABILIZATION, EXCITATION AND OTHER UNITS.

SCHEMATIC DRAWINGS AND GRAPHS ARE ATTACHED.

TRANSLATION AVAILABLE.

ICEBREAKER LENIN

LENIN ICEBREAKER

ICEBREAKERS, PROPULSION SYSTEMS

PROPULSION SYSTEMS, ICEBREAKERS

ICEBREAKERS, POWER EQUIPMENT

POWER EQUIPMENT, ICEBREAKERS

ICEBREAKERS, ENGINES

ENGINES, ICEBREAKERS

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BURNAZYAN, A.I.

KAMYSHENKO, I.D.

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SCHEFF, J. W. 1961, P. 10-11
THIS IS A SHORT ARTICLE CONCERNING THE DESIGN OF A
SHIP PROPULSION SYSTEM. THE DESIGN OF A
SHIP PROPULSION SYSTEM IS A COMPLEX TASK
AND THE DESIGNER MUST BE AWARE OF THE
VARIOUS FACTORS INVOLVED IN THE DESIGN.

SCHEFF, J. W. 1961, P. 10-11

GAS TURBINE

SCHEFF, J. W. 1961, P. 10-11
THIS IS A SHORT ARTICLE CONCERNING THE DESIGN OF A
SHIP PROPULSION SYSTEM. THE DESIGN OF A
SHIP PROPULSION SYSTEM IS A COMPLEX TASK
AND THE DESIGNER MUST BE AWARE OF THE
VARIOUS FACTORS INVOLVED IN THE DESIGN.

SHIPS, POWER PLANTS

POWER PLANTS, SHIPS

SHIPS, PROPULSION SYSTEMS

PROPULSION SYSTEMS, SHIPS

75034

GEROLD, A.

SHIP SAFETY PROBLEMS CONCERNING THE NUCLEAR
SHIP POWER PLANTS.

SCHEFF, J. W. 1961, P. 10-11
THIS IS A SHORT ARTICLE CONCERNING THE DESIGN OF A
SHIP PROPULSION SYSTEM. THE DESIGN OF A
SHIP PROPULSION SYSTEM IS A COMPLEX TASK
AND THE DESIGNER MUST BE AWARE OF THE
VARIOUS FACTORS INVOLVED IN THE DESIGN.

TRANSLATION OPTIONAL

SHIPS, POWER PLANTS

POWER PLANTS, SHIPS

POWER PLANTS, NUCLEAR

NUCLEAR POWER PLANTS

75037

VOECK, R.

EMERGENCY PROPULSION OF LION-ROCKET SHIPS
ACCORDING TO LAUREL PRINCIPLES.

SCHEFF, J. W. 1961, P. 10-11
THIS IS A SHORT ARTICLE CONCERNING THE DESIGN OF A
SHIP PROPULSION SYSTEM. THE DESIGN OF A
SHIP PROPULSION SYSTEM IS A COMPLEX TASK
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VARIOUS FACTORS INVOLVED IN THE DESIGN.

PRINCIPLES, TRANSLATION OPTIONAL

PROPULSION, NUCLEAR

NUCLEAR PROPULSION

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PROPULSION, STRAN

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IGNITION...

DETERMINATION OF THE LOADS WHICH ACTS ON A
MODEL OF A SHIP.

SCHEFF, J. W. 1961, P. 10-11
THIS IS A SHORT ARTICLE CONCERNING THE DESIGN OF A
SHIP PROPULSION SYSTEM. THE DESIGN OF A
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VARIOUS FACTORS INVOLVED IN THE DESIGN.

1. The first part of the report is devoted to a general description of the object of the study and the methods used. The second part contains the results of the calculations and the third part contains the conclusions.

2. The object of the study is the determination of the parameters of the motion of a projectile in a medium with a variable density. The methods used are the method of characteristics and the method of numerical integration.

3. The results of the calculations show that the parameters of the motion of a projectile in a medium with a variable density are determined by the initial conditions and the properties of the medium. The conclusions are that the method of characteristics is the most accurate method for determining the parameters of the motion of a projectile in a medium with a variable density.

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Number of hauls	<i>P. setiferus</i> (%)	<i>P. setiferus</i> + <i>P. setiferus</i> + <i>P. setiferus</i> (%)
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THIS IS A SHORT ARTICLE ON AMERICAN CONTRIBUTION TO THE TITLE TOPIC. THE WORK DONE AT P. AND D. OF INTERNATIONAL NICKEL COMPANY IS SHORTLY PRESENTED. CAVITATION RESISTANCE EXPERIMENTS ARE REPORTED, AS WELL AS MECHANICAL PROPERTIES AND TOUGHNESS AT LOW TEMPERATURES.	75053	501
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THIS IS THE SECOND PART OF THE ARTICLE. FOR THE FIRST PART SEE 75067. HERE, THE INFLUENCE OF THE PROPELLER ON SHIPS' CONTROL AND MANEUVER IS DISCUSSED. EXTENSIVE ATTENTION IS ALSO GIVEN TO THE USE OF ADJUSTMENT AS A PART OF THE REGULATION SYSTEM OF THE ENTIRE PROPULSION SYSTEM. FINALLY, POSSIBILITIES OF MANEUVER FOR SHIPS WITH ONE OR MORE ADJUSTABLE PROPELLERS IS DISCUSSED. BRIEF ATTENTION IS GIVEN TO PERFORMANCE IN ICE, WHICH IS FAVORABLE. 65, MAINLY GERMAN REFERENCES ARE GIVEN.	75068	501
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SCHIFF UND HAFEN, NOV 1957, P. 977-981	75068	510
THIS IS BOTH A THEORETICAL AND EXPERIMENTAL STUDY ON DETERMINATION OF FREE VIBRATION FREQUENCIES OF SHIP PROPELLERS. THE THEORETICAL PART INCLUDES A COMPUTATIONAL PROCEDURE WHICH IS ILLUSTRATED BY A WORKED EXAMPLE, LEADING TO DETERMINATION OF THE FREQUENCY, BOTH THE MATERIAL PROPERTIES OF THE BLADES AND THE INFLUENCE OF TOLERANCE ARE INCLUDED. FOR CONTINUATION SEE 75070.	75068	511
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THIS IS A CONTINUATION OF 75069. IT CONTAINS THE EXPERIMENTAL RESULTS OF MEASUREMENTS WHICH WERE PERFORMED ON VARIOUS PROPELLERS. THE VIBRATION MODES OF BLADES ARE SHOWN BOTH FOR BENDING AND TORSIONAL VIBRATIONS. ALSO, MEASUREMENTS WERE PERFORMED WITH PROPELLERS SUBMERGED IN VARIOUS DEPTH OF SALT WATER. THOSE ARE COMPARED WITH RESULTS OBTAINED IN AIR. A DECREASE BY 30 TO 40 PERCENT IN THE FREQUENCIES WAS OBSERVED IN WATER.	75069	251
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THIS IS A CONTINUATION OF 75069. IT CONTAINS THE EXPERIMENTAL RESULTS OF MEASUREMENTS WHICH WERE PERFORMED ON VARIOUS PROPELLERS. THE VIBRATION MODES OF BLADES ARE SHOWN BOTH FOR BENDING AND TORSIONAL VIBRATIONS. ALSO, MEASUREMENTS WERE PERFORMED WITH PROPELLERS SUBMERGED IN VARIOUS DEPTH OF SALT WATER. THOSE ARE COMPARED WITH RESULTS OBTAINED IN AIR. A DECREASE BY 30 TO 40 PERCENT IN THE FREQUENCIES WAS OBSERVED IN WATER.	75070	510
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THIS IS A DETAILED ARTICLE, COVERING BOTH THE THEORETICAL ANALYSIS AND EXPERIMENTAL RESULTS.	75071	252
IT IS CONCLUDED THAT THE USUAL ASSUMPTION WHICH REPLACES THE ACTION OF THE PROPELLER SCREW BY A SYSTEM OF DISTRIBUTED SINKS GIVES GOOD RESULTS BOTH FOR LIGHT AND FOR HEAVY LOADS OF THE PROPELLER. HENCE, THE SAME EQUATIONS MAY BE USED FOR BOTH CASES. THIS IS NOT TRUE, HOWEVER, IF THE PROPELLER IS REPRESENTED BY A UNIT SINK. TRANSLATION OPTIONAL.	75071	501
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THIS IS A VERY EXTENSIVE AND THOUGHTOUT ARTICLE ON UNCONVENTIONAL METHODS OF WATER JET PROPULSION OF SHIPS. IT COVERS RESULTS OF RESEARCH PERFORMED BY THE AUTHORS AS WELL AS A REVIEW OF AVAILABLE INFORMATION. MANY TYPES ARE CONSIDERED, BOTH OF HISTORICAL AND CURRENT SIGNIFICANCE. SOME TYPES ARE ANALYZED THEORETICALLY. THE ARTICLE CONTAINS MANY ILLUSTRATIVE DRAWINGS. EXPERIMENTAL INVESTIGATIONS WITH SOME PROPULSION TYPES ARE ALSO REPORTED AND SOME ACTUAL SMALL SHIPS WHICH ARE EQUIPPED WITH JET PROPULSION ARE DESCRIBED. ONE OF THOSE IS A 230	75073	501
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Appendix V
DOCUMENTATION

This Appendix contains bibliographical data, ~~unnotated~~ comments and key words of all references which were included in this Library Search. References are listed in numerical order within each subject category, the latter are described in Appendix II (p.7).

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10. SUMMARY			
Library search for literature in the field of icebreaker design and construction was made. The purpose of this search was to collect, review and make documentation of Russian and German literature, published between 1956 and 1966, which was pertinent to the main subject. Special reference was given to structural design, propulsion and to materials and processes used in construction as well as to physical properties of ice, to icebreaking theory and methods and to problems related to the interaction between the icebreaker and ice. Other pertinent areas, including fracture, fatigue and corrosion resistance were also included. This report describes the main features of the work, its extent, sources and results. It contains technical information on the documentation and on copyright clearance. Bibliographical data, abstracts and key words of all references included in this search are listed in numerical order within each of ten subject categories.			

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