

Index to Publications
of the
North East Coast Institution
of
Engineers and Shipbuilders
1884 - 1993

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CONTENTS

Section 0 :	Introduction	1
Section 1 :	Chronological Index	3
Section 2 :	Corporate Name Index	52
Section 3 :	Personal Name Index	62
Section 4 :	Subject Index	80

SECTION 0: INTRODUCTION

History

This Index has been compiled as the final and complete record of the publications, nearly 1400 papers and 1200 biographies and obituaries, of the North East Coast Institution of Engineers and Shipbuilders (NECIES). It is the final publication of the Institution and it complements the Institution's Centenary History published in 1984.

The Institution was founded in 1864 and based in Newcastle upon Tyne. It served the professional interests of its members, mainly shipbuilders, engineers, and shipowners. Members came predominantly from the North East of England but with many from other regions and nations.

The Institution, in its heyday, played a leading role in the academic, industrial and economic development of both the region and the nation. The prestigious work of its members generated both wealth, prosperity, and international renown for the region and its people.

However, the momentous and continual changes in world politics and economics have drastically changed the role and need for a regional Institution. Thus with both regret and pride, the Institution was transformed in July 1992 into the North East Coast Engineering Trust (NECET), so relinquishing its learned society role after an illustrious lifespan of 128 years.

This Index is dedicated to the former Institution members, their families, and their friends for their work which has so greatly benefited and enriched our lives.

Who Should Use the Index?

The Index is designed primarily as a bibliographic tool for the professional researcher, be they engineer, shipbuilder, librarian, or historian. Casual enquirers may also find the Index of use.

Which Publications are Included in the Index?

The following publications are indexed:

1. "Transactions of the North East Coast Institution of Engineers and Shipbuilders", v 1 - v 108, ISSN 029-260X.
2. "Conferences" and "Books" published by the Institution.

The following details are indexed: Technical papers and their associated discussion and their subjects; authors; authors' affiliation; Obituaries and biographies; Visits to industries; Presidential and Secretarial addresses.

The following details are not indexed: Discussions of the technical papers; Minutes of Proceedings; Reports of the Council; Lists of Members; Constitution and Bye-Laws; Library Additions to Stock; Awards of Prizes; Student and Graduate Section Papers not published in the Transactions; Institution Notes; Representatives of the Institution; Past Presidents, Councils and Officers of the Institution.

How to Use the Index

The layout of the Index is a compromise between production costs and usability. Thus the text is rather cramped but with many access points through the four indexes:

SECTION 1: CHRONOLOGICAL INDEX. A list of all publications arranged in date order. Only this Section contains the complete bibliographic information to locate each publication.

SECTION 2: CORPORATE NAME INDEX. An alphabetical list of the names of organisations, usually the author's affiliation where known, but also companies.

SECTION 3: PERSONAL NAME INDEX. An alphabetical list of the names of authors, members' obituaries, biographies, and other persons.

SECTION 4: SUBJECT INDEX. An alphabetical list of the subjects of papers.

About 95% of the Institution's publications are numbered annual bound volumes of the Transactions. However the individual papers contained within them are not numbered. Thus for the purpose of this Index it has been necessary to assign to each paper, an Index Number, which is based upon the Volume Number of the Transactions in which that paper is to be found and also the first Page Number of that paper, e.g. 001:003, which means volume 1, page 2.

Conferences and other publications, which have been published separately to the Transactions, have been assigned a volume number which corresponds with the Transactions of the same year, e.g. 1984 Centenary Conference papers, indexed as 100:X00, published in the same year as the Transactions volume 100, 1984, indexed as 100:000.

SECTIONS 2-4 each contain detailed cross-references to assist the user, and the Index Numbers refer the user to Section 1 for the full bibliographic record.

Example entry in SECTION 1 CHRONOLOGICAL INDEX:-

001:003 Transactions NECIES, v 1, 1864-85. [7] ppv, xv, 184 p, xxi pl.

001:003 Inaugural address by the President. (on engineering; shipbuilding; education & training). By W. Boyd (Wallsend Shipway & Engineering Co). Read, 28 Nov 1864. Note: Ibid. p 3-20.

The titles of bound volumes and their constituent technical papers, obituaries, and similar, are "emboldened" for emphasis. Each entry has the following layout:

<Index Number>. <Title of Publication>. <Authors and their Affiliations>. <Date and Place of Presentation>. <Title of Source Publication>. <Publication Date>. <Pagination>

Thus in the second example given above:

<Index Number> = 001:003

<Title of Publication> = Inaugural address by the President. (on engineering, shipbuilding, education & training).

<Authors and their Affiliations> = By W. Boyd (Wallsend Shipway & Engineering).

<Date and Place of Presentation> = Read, 28 Nov 1864, Note, i.e. lecture in Newcastle.

<Title of Source Publication>. <Publication Date> = Ibid.

<Pagination> = p 3-20.

Where 001:003 = volume number 1, page number 3. The 1st page of the paper within bound volume number 1. Ibid = in the same bibliographic reference as the previous entry but with different pagination, i.e. in this example, Transactions NECIES, v 1, 1864-85, p 3-20.

Volume numbers 1-58 were originally numbered in Roman Numerals but have been changed to "Anglican" numbers for

SECTION 0: INTRODUCTION

clarity in this index. Some Page Numbers were in Roman Numerals and have been left unchanged, except for when they are used as part of an Index Number in this index, eg. v. 10 p. xxxii -> 003:MC33, where M indicates page number changed to English.

Note that some chronicles and personal notes have been grouped together under a single Index Number, thus obituaries and personal notes may not be on the precise page number implied by the Index Number.

Key to Abbreviations

SN: = Scope Note = additional explanation about this term, eg SN: continues 1963- as Univ of Newcastle.

UP: = Use For = use this term instead of the other term listed here, eg Austin, S.P. UP: Wear Dock Co.

USE: = Use instead of = use the alternative term given, eg Boats. USE: Small craft.

BT: = Broader Term = see also the broader term given, eg Cargo ships. BT: Merchant ships.

NT: = Narrower Term = see also the narrower term given, eg Merchant ships. NT: Cargo ships.

RT: = Related Term = see also the related term given, eg Merchant ships. RT: Naval vessels.

Ibid = the same bibliographic reference as the previous entry but with different pagination.

j = an annotation which has been inferred and added by the Compiler to clarify an author's meaning, eg L.C. Rurrill (King's Coll. Note), the author's affiliation was unstated by the author but is believed to be King's College, Newcastle.

< > = a generic name.

eg Prevention. USE: specific subjects, eg Corrosion.

ante p = before page = the preceding page.

discn = discussion.

jnt = joint.

j = junior.

mtg = meeting.

n = number.

opp p = opposite page = the following page

p = page.

pl = plate, (usually a fold-out; diagram or photograph)

ppr = paper.

scr = section.

v = volume.

Acknowledgements

To the Editor, Dr Ian Boston, Reader in Marine Transport, Newcastle University, who has taken a special interest in maritime libraries as sources of information for current technical material and for historical research related to marine technology, author of a number of maritime books and papers. He was also the Institution's last President.

To the Compiler, Richard Carter, Information Assistant, Newcastle University, whose interests are technical library and information services for engineers. He also typed the Index.

To Brian Newman, Research Associate, British Shipbuilding History Project, Newcastle University, for advice and contributions. He has worked in the marine industries and has a keen interest in the shipbuilding history of the North East.

To the Department of Marine Technology, Newcastle University for use of computing and library facilities.

To the Engineering Design Centre, Newcastle University for use of computing facilities. Bill Hills, Director and especially Dr Praveer K. Chawdhry, Senior Research Associate, for advice on text processing, and laser printing on their Sun Network.

To Joe P. Clarke, now retired from Newcastle Polytechnic, for advice and contributions. He wrote the Institution's History published in 1984 and continues a busy research programme into the maritime history of the North East.

To Elaine Carter for her diligent proof reading.

The Index has been prepared using the database package dBaseIV on an IBM PS2/50 computer; and text-processing package TROFF and OpenWindows-3 on a Sun computer network.

Libraries Which Hold MECIES Publications

The following are a selection of known holdings, checked December 1992, of Transactions in the United Kingdom. Numbers indicate volume numbers held, where 1-108 = continuous or nearly continuous run; 1-108 = substantial but incomplete run. Note that holdings of Conferences are much less common, and have not been checked.

North East:-

BMT Centre plc Library, Wallsend (commercial, formerly BSRA Library), 1-108; Cleveland Public Library, Middlesbrough, 53-82; Gateshead Public Library, none; Literary & Philosophical Society Library, Newcastle, 1-27; Museum of Science and Engineering, Newcastle, 1-108; Newcastle Central Public Library, 1-108; Univ of Durham, none; Univ of Newcastle upon Tyne, Marie Tech Library, 1-108; Univ of Newcastle upon Tyne, Robinson Library, 1-108; Univ of Northumbria at Newcastle (formerly Newcastle Polytechnic), 1-52, 56-108; South Tyneside Coll, S. Shields (formerly S. Shields Marine & Tech Coll), 1-108; South Tyneside Public Library, S. Shields, 2-82; Sunderland Public Library & Museum, 1-89; Sunderland Univ (formerly Polytechnic), 1-108; North Tyneside Public Library, N. Shields, 46-108; Northumberland County Public Library, Morpeth, 69-79, 81-86.

North West:-

Merseyside Maritime Museum, Liverpool, 61-98; University of Liverpool, 25-108

London:-

Institute of Marine Engineers, 1-106; National Maritime Museum, Greenwich, 1-96; Royal Institution of Naval Architects, 1-106; Science Museum Lib, 1-108; Institution of Mechanical Engineers, 1-108; Institute of Civil Engineers, 1-96;

South West:-

Department of Transport, Marine Library, Southampton, 97-108; Plymouth Univ (formerly Polytechnic), 65-108; Univ of Southampton, Boaty Library, 65-97, 102-108.

Scotland:

Institution of Engineers & Shipbuilders in Scotland, none; Mitchell Public Library, Glasgow, 1-46; National Library of Scotland, Edinburgh, 1-108; Univ of Glasgow, 1-75; Univ of Strathclyde, Glasgow, 1-108;

UK:-

British Library Document Supply Centre, Boston Spa, Yorkshire, (for Inter-Library Loans), 1-108.

SECTION I: CHRONOLOGICAL INDEX

How to Use the Chronological Index

A list of publications, arranged in chronological order of publication date, and then by page number or paper number within each publication.

e.g. 001:0000; 001:0005; 001:0021; ...

e.g. 100:X011; 100:X012; 100:Y002; 101:0000; ...

Entries are in the form -

<index number> <title of publication>, <authors> (<author affiliations>), <date & place presented>, <title of source publication>, <publication date>, <pagination>.

Find your publications in this Section I: Chronological Index, or find them by using the three indexes in the following Sections, 2: Corporate Name Index; 3: Personal Name Index; 4: Subject Index.

Key:

D = discussion pages numbered D in the Institution, usually following the main text, e.g. 048:D006.

M = pages numbered M by the Compiler, to indicate pages numbered using Roman Numerals by the Institution, usually preceding the main text, e.g. 203:M025.

S, SD = pages numbered S or SD by the Institution

T = pages numbered T by the Compiler, to indicate an appendix following the main text.

X, Y = conference or other publications numbered by the Compiler, published in the same year as, but separately from, a particular volume of Transactions, e.g. 100:X060.

Publications:

001:0000 Transactions NECTES, v 1, 1884-5, [7] pps, xv, 184 p, xvii pl

001:0003 Inaugural address by the President [on engineering; shipbuilding; education & training], By W. Boyd ([Wallend Slipway & Engineering Co]) Read, 28 Nov 1884, Nels. Ind. v 3:20

001:0021 On the speed trials of steam ships. By W.H. White ([Armstrong, Mitchell & Co. Elswick]) Read, 22 Dec 1884, Nels. Ind. p 21-26 & p. i-vi opp.

001:0037 On the forging of crank shafts in iron and steel [for steam reciprocating engines]. By H. Fowles ([Tyne Forge Co., Nels]). Read, 26 Jan 1885, Sunderland. Ind. p 27-32 & p. iii-xi opp

001:0053 On approximate curves of stability for ships. By A.E. Long ([Palmer's Shipbuilding & Iron Co]), Read, 18 Feb 1885, Nels. Ind. p 53-72 & p. xii-xi opp.

001:0075 On marine boiler construction [structural design] and [corrosion] preservation. By J.A. Rowe ([affiliation not known]). Read, 18 Mar 1885, Sunderland. Ind. p 73-106 & pl xv-xvi opp.

001:0077 On triple expansion [steam reciprocating] engines. By A. Taylor ([correction]). Read, 1 Apr 1885, Nels. Ind. p 107-129 inc pl xvii-xx opp p 116

001:0083 On twisting moments on crank shafts of different engines [steam reciprocating engines for ships]. By K. Sinclair ([Wallend Slipway & Engineering Co]). Read, 29 Apr 1885, Sunderland. Ind. p 131-152 inc pl xix-xxi opp p 144

002:0000 Transactions NECTES, v 2, 1885-6, [9] pps, xv, 340 p, lvi pl

002:0007 Inaugural address by the president [on costs; production; steel; strength; ships]. By W. Lloyd ([Wallend Slipway & Engineering Co]) Read, 14 Oct 1885, Nels. Ind. p 7-30

002:0035 On the manufacture of large forgings for marine purposes [crankshafts]. By H. Cameron ([affiliation not known]). Read, 11 Nov 1885, Nels. Ind. p 35-56 & pl xviii opp.

002:0059 On some considerations regarding the trussboard of merchant ships. By J. Mavor ([Melroye & Co]), T. Miller (R. & W. Hawthorn, Leslie & Co., Heston), Read, 10 Dec 1885, Nels. Ind. p 59-88 & pl xviii opp

002:0091 On the application of hydraulic pressure to the driving of machines [inc. riveting]. By R.H. Tweedell ([Felsing & Pat]), Read, 14 Jan 1886, Nels. Ind. p 91-128 & pl xiv-xx opp

002:0131 On the construction [structural design] and fittings of salvage steamers. By O. Ulston ([Compton Ulston]). Read, 19 Feb 1886, Sunderland. Ind. p 131-156, pl xxx-xviii opp p 172

002:0157 On the stiffening of collision bulkheads [of ships]. By M.C. Jones (R. & W. Hawthorn, Leslie & Co., Heston), Read, 10 Feb 1886, Sunderland. Ind. p 157-172 & pl xxv-xxvii opp.

002:0175 Forced draught [in boiler furnaces]. By J. Patterson, M. Sandison ([Sir W. G. Armstrong, Mitchell & Co]). Read, 5 Mar 1886, Nels. Ind. p 173-214 & pl xxvii-xxxvii opp, p 239-284 & pl xlv li.

002:0217 On some points of interest in the designing of racing yachts. By A.E. Long, W.E. Peon ([Palmer's Shipbuilding & Iron Co]) Read, 23 Mar 1886, Sunderland. Ind. p 217-258 & pl xxxviii-xxxvii opp

002:0287 On high speed [marine steam reciprocating] engines. By F.C. Marshal, R.L. Weighon (R. & W. Hawthorn, Leslie & Co.). Read, 21 Apr 1886, Nels. Ind. p 267-309, p. li-vii opp p 340.

100:Y003 Transactions NECTES, v 3, 1886-87, [14] pps, lv, 330 p.

100:M023 Memoir: Ivan Mavor, c1860-1886. W.J. Clark, 1847-1887. John Brockar, 1838-1887. [Inc. p xviii-xxv, xxxi; xxvii into p 1 [pages not numbered M].

100:0009 President's inaugural address [on economic depression; shipbuilding; steam reciprocating engines]. By W.T. Daxford ([William Daxford & Sons]). Read, 13 Oct 1886, Nels. Ind. p 9-24.

002:0027 On the use and transport of liquid fuel [fuel oil combustion; by tankers] By B.O. Nieme ([St Andrews Iron Works]) & Cravel ([Barron Verms]) Read, 10 Nov 1886, Nels. Ind. p 27-52, pl 1-12 opp p 38.

002:0055 On the plan and construction of marine engine works. By T. Muir ([Central Marine Engine Works, W. Hardymot]). Read, 8 Dec 1886, Sunderland. Ind. p 55-76, pl 12-17 opp p 64

002:0077 On the principle of work in relation to the strength of structures and the fallacy of the accepted theory of the strength of hullow shafting. By H. Foster ([Newham Steel Works, Nels]). Read, 3 Feb 1887, Nels. Ind. p 77-137, pl 18-24 opp p 116

002:0099 Some notes on the launching of vessels. By H.G. Gamble ([Sir W. G. Armstrong, Mitchell & Co]) Read, 9 Feb 1887, Nels. Ind. p 149-166.

002:0107 On technical education for engineers and shipbuilders. By [the late] I. Mavor (R. & W. Hawthorn, Leslie & Co.). Read, 9 Feb 1887, Nels. Ind. p 167-175.

002:0179 On the reaction and efficiency of the screw propeller [inc. model tests]. By A. Blechynsen ([Basson Shipbuilding Co]) Read, 9 Mar 1887, Nels. Ind. p 179-223, pl 27-37 opp p 258

002:0229 On compound v. triple expansion [steam reciprocating] engines, from a shipowner's point of view. By J.P. Hall ([Palmer's Shipbuilding & Iron Co]) Read, 20 Apr 1887, Nels. Ind. p 229-274, pl 38-42 opp p 246.

002:0229 Institution of Naval Architects, Meeting/Summer Session, 26-29 Jul 1887, Newcastle-upon-Tyne & Sunderland, General programme & proceedings [papers & visits], visits to Nels Royal Mining, Engineering & Industrial Expts, Palmer's Shipbuilding & Iron Co; Coquet Har & Sued Works, Elswick Ship yard. Ind. p 279-316. [pprs listed as 001:050-063:0291]

SECTION 1: CHRONOLOGICAL INDEX.

003-0290 Recent developments in marine engineering. By F.C. Marshall (R. & W. Hawthorn, Leslie & Co, St. Peter's) Summer Mtg, 26 Jul 1887, Nels. Announced, *ibid.*, p 290. In: Trans INA, v 29, 1888, p 26-56, pl xiv-xv opp p 410 [see also next ppr. same Index No.].

003-0290 On the application of hydraulic pressure to naval gunnery. By Lord [W. G.] Armstrong; J. Vavassour (Sir W. C. Armstrong, Mitchell & Co); Summer Mtg, 26 Jul 1887, Nels. Announced, *ibid.*, p 290. In: Trans INA, v 29, 1888, p # 25, pl x xi opp p 410. [see also previous ppr. same Index No.].

003-0291 On the present position occupied by basic steel for shipbuilding. By B. Martel (Lloyd's Register of British & Foreign Shipping). Summer Mtg, 27 Jul 1887, Sunderland. Announced, *ibid.*, p 291. In: Trans INA, v 29, 1888, p 80-117. [see also next 2 pprs. same Index No.].

003-0291 On some recent experiments with basic steel [used in warships]. By W.H. White (Director of Naval Construction). Summer Mtg, 27 Jul 1887, Sunderland. Announced, *ibid.*, p 291. In: Trans INA, v 29, 1888, p 59-79, 100-117 [see also next & previous pprs.].

003-0291 Description of the improvements of the River Tyne. By P.J. Messen (Tyne Improvement Commissioners). Summer Mtg, 28 Jul 1887, Nels. Announced, *ibid.*, p 292. In: Trans INA, v 29, 1888, p 122-135, pl xvi xvii opp p 410. [see also previous 2 pprs. same Index No.].

004-0000 Transactions NECES, v 4, 1887-88, [12] pprs, lv, 344 p. lu pl.

004-0013 Inaugural address by the president [on triple expansion steam reciprocating engines; conversions; shipping]. By W.C. Duxford (William Duxford & Sons) Read, 19 Oct 1887, Nels. *ibid.*, p 13-36.

004-0027 Notes on steamship speed calculations [on resistance & propulsion]. By G.N. Aronson, Jr. (affiliation not known). Read, 16 Nov 1887, Sunderland. *ibid.*, p 37-64.

004-0065 The influence of coal consumption on the commercial efficiency and the design of cargo steamers [inc. economies; trials; hull forms]. By R. Thompson (C. I. Thompson & Co). Read, 16 Nov 1887, Sunderland. *ibid.*, p 65-78 inc pl iv, 81-96.

004-0097 Improvements in the construction [structural design] of large stern frames, rudders and keels. By E.F. Wales (H. Bucknall & Co, London). Read, 7 Dec 1887, Nels. *ibid.*, p 97-129 inc pl v-x.

004-0127 The compound steam turbine and its theory as applied to the working of dynamic-electric machines. By C.A. Parsons (Clarke, Chapman & Co). Read, 19 Dec 1887, Nels. *ibid.*, p 127-149 inc pl x-xii.

004-0151 The combustion of coal, and some evaporative experiments with natural and forced draught [of boiler furnaces]. By W.G. Spruce (R. & W. Hawthorn, Leslie & Co). Read, 11 Jan 1888, Nels. *ibid.*, p 151-203 inc pl xiv-xv.

004-0205 On the results of some experiments on an improved boiler joint [riveting]. By J. Patterson (affiliation not known). Read, 8 Feb 1888, Nels. *ibid.*, p 205-243 inc pl xxv.

004-0245 Slide valve gears [for steam reciprocating engines]. By J.T. Melton (Lloyd's Register of Shipping). Read, 22 Feb 1888, Nels. *ibid.*, p 245-266 inc pl xxvii-xxviii, p 301-303 inc pl xxxv.

004-0267 Stockless anchors and fittings. By G.W. Snowright (E. Wilby & Co). Read, 14 Mar 1888, Sunderland. *ibid.*, p 267-285 inc pl xxxv-xxxvii, p 291-300.

004-0305 Pontoon and floating docks [inc. design & construction]. By A. Taylor (consultant). Read, 11 Apr 1888, Nels. *ibid.*, p 305-319 inc pl xl-xlvii.

004-0335 Report of the Council on the horse power of marine [steam reciprocating] engines. By the Council of the NECES. [reported c1888]. *ibid.*, p 335-341.

004-0341 Report of the Council on the statistics of shipbuilding during the last twenty-five years. By the Council of the NECES. [reported c1888]. *ibid.*, p 343-344 & pl xlix-lxi opp.

005-0000 Transactions NECES, v 5, 1888-89, [9] pprs, lv, 364 p. xli pl.

005-0002 Memoir: G. H. Garrett, 1848-89. *ibid.*, p xli ante p 1 [page not numbered M].

005-0015 President's inaugural address [on shipbuilding, education & training]. By F.C. Marshall (R. & W. Hawthorn, Leslie & Co). Read, 3 Oct 1888, Nels. *ibid.*, p 13-42.

005-0045 The use of machinery in construction [shipbuilding]. By J. Price (Parsons Shipbuilding & Iron Co) Read, 20 Oct 1888, W. Hartlepool. *ibid.*, p 43-60.

005-0061 Visit to the Hartlepoons, 20 Oct 1888. Short description of the shipyards, engineering works, and docks. *ibid.*, p 37-42, 61-71 inc pl i-v. Map Hartlepool and p i.

005-0075 A new system of shipbuilding to facilitate the application of machine riveting to shell plating. By J. Johnson (J. L. Thompson & Co). Read, 23 Nov 1888, Sunderland. *ibid.*, p 73-103 inc pl v-vii opp p 78.

005-0085 A new wave-motor [for guns & warship rolling motions]. By J.A. Rowe (affiliation not known). Read, 17 Dec 1888, Nels. *ibid.*, p 105-121, 125-133, pl ix-xiii opp p 114.

005-0135 The structural strength of cargo steamers. By G. Bergstrom (affiliation not known). Read, 14 Jan 1889, Nels. *ibid.*, p 135-146 inc pl xiv-xx, p 175-182 pl xxix-xxxiv opp p 178.

005-0151 The development of the well-deck cargo steamer. By G.W. Snowright (E. Wilby & Co). Read, 13 Feb 1889, Nels. *ibid.*, p 151-174 inc p. xxi-xxv, p 182-194.

005-0195 Corrosion and pitting in marine boilers. By H. Pinder (affiliation not known). Read, 15 Mar 1889, Sunderland. *ibid.*, p 195-200, 207-216.

005-0217 The proper capacity of air pumps. By J.H. Hamilton (Nottingham Engine Works). Read, 8 Apr 1889, Nels. *ibid.*, p 217-241 inc pl xxxv, xxxvi, p 245-256 inc pl xl-xi.

005-0000 Transactions NECES, v 6, 1889-90, [8] pprs, lvv, 298 p, xxxv pl.

005-0042 Memoir: William Clarke, 1831-1890, Alexander Hepburn, 1848-1889, Thomas Wilson, 1843-1890. *ibid.*, p xlii, xlii-xliii, xlii and p 1 [pages not numbered N].

005-0061 Notes on the surveying and classification of shipping. By G.E. Mearns (Clapton Steamship Co). Read, 1 Oct 1889, Nels. *ibid.*, p 13-36, 39-59, pl i-ii opp p 66.

005-0058 The strength of boilers. By J.C. Spence (Tyre Boiler Works Co, Nels). Read, 8 Nov 1889, Sunderland. *ibid.*, p 59-98, pl iii-iv opp p 66, pl v opp p 130.

005-0097 The construction of marine boilers with a view to the use of higher pressures. By C.B. Casbourne (affiliation not known). Read, 16 Dec 1889, Nels. *ibid.*, p 97-104, 109-114, pl vi opp p 130.

006-0115 High speed [steam reciprocating] engines for cargo boats. By E. Hall-Brown (T. Richardson & Sons Marine Engine Works). Read, 13 Jan 1890, Nels. *ibid.*, p 115-130 & p v-i-iv opp, 133-149.

006-0151 Boiler furnaces [for ships]. By W. Kilmington (North Eastern Marine Engineering), A. Taylor (consultant). Read, 14 Feb 1890, Sunderland. *ibid.*, p 151-166, 159-173, pl xvi-xvii opp p 204.

006-0175 The normal indicated horse-power of marine [steam reciprocating] engines. By R.L. Wighton (R. & W. Hawthorn, Leslie & Co). Read, 13 Mar 1890, Nels. *ibid.*, p 175-224 & pl xvi-xxii opp p 204, 227-249.

006-0215 The structural strength, etc., of cargo steamers of different types. By G. Bergstrom (affiliation not known). Read, 24 Mar 1890, Nels. *ibid.*, p 215-224 & pl xxx-xxxvii opp, 247-252, 267-280.

SECTION 1: CHRONOLOGICAL INDEX.

006:0253 The weight of machinery in the mercantile marine [economics of steam reciprocating engines]. By W. Fryd ([Waltend Shipway & Engineering Co.]. Read, 12 Apr 1890. W. Hartlepool. Ibid. p 252-264 & pl xxiv-xxv app. 281-295

007:009 Transactions NECIES, v 7, 1890-91. [13] pprs. 1cc. 442 p. iv pl.

007:0014 Memoir: W. H. Birtleson, ?-1891. Richard John Kapler, 1859-1891. Thomas Richardson, 1821-1890. Ibid. p xlix; xlix-l; l; all ante p 1 [pages not numbered M].

007:0017 President's inaugural address [on engineering]. By T.W. Richardson ([J. Wigham Richardson & Co, Neptune Works, Walker]). Read, 13 Oct 1890. Ncle. Ibid. p 17-42.

007:0017 Increased boiler pressure and increased piston speed for marine [steam reciprocating] engines. By W.R. Cummins ([J. Wigham Richardson & Co.]. Read, 21 Nov 1890. Sunderland. Ibid. p 47-71, 77-86, 148-168, pl i-iv app p 442.

007:0067 The unsinkability of cargo-carrying vessels [on subdivision & damaged stability]. [1st lecture]. By W. Hoek ([J. Lang & Co. Sunderland]). Read, 15 Dec 1890. Ncle. Ibid. p 87-111, 139-147, 169-175, pl vii-xii app p 442.

007:0113 Main steam pipes [iron & steel, & copper in ships]. By M. Sanderson ([Sir W. G. Armstrong, Mitchell & Co Ltd, Elswick Shipyard, Ncle.]). Read, 15 Dec 1890. Ncle. Ibid. p 113-124, 175-178, pl xii-xiv & xv app p 442.

007:0127 Mechanical aid to the investigation of experimental curves [inc. calculating instruments for ship calculations]. By L. Dezhnev-Young ([North Eastern Marine Engineering Co.]). Read, 10 Jan 1891. W. Hartlepool. Ibid. p 127-136, pl xv-xvii app p 442.

007:0179 Screw propellers: the influence of the relative dimensions and proportions of the screw propeller on the vessel's performance. By A. Eleynden ([Barrow Shipbuilding Co.]). Read, 2 Feb 1891. Ncle. Ibid. p 179-195, 199-203, 239-247, p. xx-xxxi app p 442.

007:0205 The strength of short flat-ended cylindrical boilers. By J.C. Nicolson ([Univ of Cambridge]). Read, 21 Feb 1891. Sunderland. Ibid. p 205-218, 248-265, pl xvii app p 442.

007:0219 Results of experiments on the strength of boilers. By J.C. Spence ([Tyne Boiler Works Co, Ncle.]). Read, 20 Feb 1891. Sunderland. Ibid. p 219-226, pl xvi-xxvi app p 442.

007:0266 Electrical engineering, with special reference to electric lighting. By W.C. Morrison ([E. Scott & Co, Ncle.]). Read, 23 Mar 1891. Ncle. Ibid. p 269-313, 317-333, pl xxxv-xxxix app p 442.

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008:0019 Proposed improvements in the construction of the bottoms of ships and steamers [structural design]. By E.F. Wailes ([consultant]). Read, 26 Oct 1891. Ncle. Ibid. p 15-34, 49-56, 89-93, pl i-ii & an app p 306.

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008:0351 Visit to the Atlas Steel and Iron Works, Sheffield. Ibid. p 307-309, pl xlii app p 306.

008:0326 Memoir: Bryce Gray Nichol, ?-1892. Ibid. p 305-305

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009:0011 President's inaugural address [inc. ship design]. By R. Thompson ([J.L. Thompson & Co. North Sands Shipyard, Sunderland]). Read, 10 Oct 1892. Ncle. Ibid. p 11-39 & pl i-ii app.

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009:0390 Visit to the Leeds Forge [25 Jul 1893]. Ibid. p 395-402, p. lvi-vii app p 407.

010:000 Transactions NECIES, v 10, 1893-94. [9] pprs. 1cc.

SECTION I: CHRONOLOGICAL INDEX.

338 p, xxx pl.

010:0014 Opening remarks by the President [on specific subject]. By R. Thompson ([J.L. Thompson & Co. North Sands Shipyards, Sunderland]). Read, 7 Nov 1890, Nete Ibid. p 14-19.

010:0021 On a method of comparing steamship performances and of estimating powers and speeds of ships. By W. Hok ([J. Laing & Co. Sunderland]). Read, 7 Nov 1890, Nete Ibid. p 21-42. 47-65, 85-93, 125-148, pl i-xiii & xv opp p 338

010:0067 The dangerous working heat of mild steel and the effect of annealing and air cooling [inc. structural strength of boilers]. By I. Nodder ([John Brown & Co]). Read, 25 Nov 1890, W. Hartlepool. Ibid. p 67-82, 97-102.

010:0103 On certain principles of motion as taught by the pendulum, and as illustrated by the resistance of ships and other bodies moving through fluids. By E. Caws ([consultant]). Read, 20 Dec 1893 Sunderland Ibid. p 102-121, 205-217, 237-243, pl xv, xx-xxi opp p 338.

010:0149 Mercantile marine engineers [inc. education & training]. By J.R. Bethgeil ([affiliation not known]). Read, 18 Jan 1894, Nete Ibid. p 149-181, 185-202, 269-270

010:0219 On a new system of construction for large vessels of cellular type [merchant ship design]. By W. Bell ([affiliation not known]). Read, 13 Feb 1894, Nete Ibid. p 219-234, 245-255, 275-282, pl xvi-xix opp p 338.

010:0257 Oil engines [for ships]. By W. Stanford ([Robert Stephenson & Co]). Read, 17 Mar 1894, W. Hartlepool. Ibid. p 257-267, 285-286, pl xxii-xxviii opp p 338.

010:0287 Bases for classification of vessels proportioned to their strength to resist bending and vibration. By A.R. Liddle ([Lloyd's Register of Shipping]). Read, 11 Apr 1894, Sunderland. Ibid. p 287-305, 309-321, pl xxix opp p 338.

010:0327 Visit to the Consett Ironworks [19 Jul 1894]. Ibid. p 327-332, pl xxx opp p 338

011:0000 NECIES Transactions, v 11, 1894-95, [7] ppix, lxxi, 347 p

011:0013 President's inaugural address [on generators; shipbuilding]. By T. Richardson ([T. Richardson & Sons Marine Engine Works]). Read, 16 Oct 1894, Nete Ibid. p 13-31, 35-56, 79-80, pl xviii opp p 33.

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011:0113 The design and efficiency of plants for the transmission of power by electricity. By W.C. Mountain ([Ernest Scott & Mountain]). Read, 5 Jan 1895, Nete Ibid. p 113-132, 147-163, 187-201, pl xv-xxv opp p 132

011:0165 On the application of the electric arc to machinery and boiler repairs, etc. By B. Foster ([Spenser Newburn Steel Works]). Read, 12 Feb 1895, Nete Ibid. p 165-183, 203-208, 226-305-321, pl xvi-xxv opp p 182.

011:0209 Turned-deck cargo steamers. By S.O. Kendall ([Lloyd's Register of Shipping]). Read, 12 Mar 1895, Sunderland Ibid. p 209-231, 237-279, 311-331, pl li-xvii opp p 231, lxxv & lxxvii opp p 334.

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012:0027 The surface condensing plant at the Newcastle and District Company's electric light works, Forth Banks, Newcastle-upon-Tyne [power station]. By W. Cross ([Newcastle & District Electric Lighting Co]). Read, 25 Oct 1895, Nete Ibid. p 21-28, 74, pl i-iv opp p 258.

012:0051 The application of the law of similarity to marine propellers. By J. Denholm-Young ([consultant]). Read, 15 Nov 1895, W. Hartlepool. Ibid. p 31-44, 50-51, 55-58, pl v-viii opp p 258.

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012:0093 Countersinking [for riveting] in the shipyard. By R.H. Muir ([C. S. Swan & Hunter & Co]). Read, 17 Jan 1896, Nete Ibid. p 93-101, 105-109, pl xxi opp p 258.

012:0111 Some structural details of modern ships. By M.C. James ([Merchants Dry Dock]). Read, 14 Feb 1896, Nete Ibid. p 111-132, 135-159, 159-160, 167-171, pl xxii-xxix opp p 258.

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013:0105 The resistance areas of transverse sections [mechanical strength of ships]. By A.E. Sharp ([F. & O. Co]). Read, 20 Jan 1897, Nete Ibid. p 105-112, 125-129, 273-275, pl xiv-xxii

SECTION 1: CHRONOLOGICAL INDEX.

opp p 112.

013:0131 Lighter fuel [inc. fuel oils for ships]. By R. Wallis ([Wallis & Slipway & Engineering Co]). Read, 10 Feb 1897, S. Shields. *Ibid.*, p 131-148, 151-159, pl xx-xxvii opp p 148.

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013:0221 Gravitation stamp mills for quartz crushing. By D.B. Morrison ([T. Richardson & Sons Marine Engine Works, Hartlepool]). Read, 30 Apr 1897, Nels. *Ibid.*, p 221-233, pl l-xxv opp p 235.

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015:0013 President's inaugural address [on industrial relations]. By H.C. Browne ([R. & W. Foreman, Leeds & Co]). Read, 14 Oct 1898, Nels. *Ibid.*, p 12-27.

015:0031 On some features of the repairs and construction of iron and steel ships [structural design]. By M.W. Aislab (affiliation not known). Read, 18 Nov 1898, Nels. *Ibid.*, p 31-46, 61-66, 83-85, pl i opp p 257.

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015:0078 The visit to the Central Marine Engine Works, West Hartlepool, [21 Jan 1899]. By [author not known]. *Ibid.*, p 77-80.

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015:0161 Remarks on the increasing frequency of failure of propeller shafts. By F. Caws (consultant). Read, 24 Mar 1899, Nels. *Ibid.*, p 161-172, 179-199, 203-220, 243-254, pl vi-vii opp p 267.

015:0221 Shop and general establishment charges in engineering works and their relation to costs and estimates. By W.E. Cowens ([John Abbot & Co, Gateshead]). Read, 3 May 1899, Nels. *Ibid.*, p 221-232, 253-256.

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SECTION I: CHRONOLOGICAL INDEX.

015:0227 Memoir: William Stafford, (c1860)-1898. Ibid. p. 127.

017:0000 Transactions NECIES, v. 17, 1900-1901. (2) ppis. lxxix. 265 p. xxi pl.

017:0001 Visit to the works of the Wallsend Slipway and Engineering Co., Wallsend. October 27th, 1900. Ibid. p. 1-4

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018:0275 Workshop records: a review and comparison of existing methods, with special reference to the use of cards and files instead of books [inc. cost esting, mangl]. By G. Parker (affiliation not known). Read, 21 Mar 1902, S. Shields. Ibid. p. 275-295, 305-309, 323-327, p. xxix-xxx opp p 262.

018:0311 Co-operation and mechanical aids to workshop cost-keeping [inc. management & industrial relations]. By R.P. Link (affiliation not known). Read, 18 Apr 1902, Sunderland. Ibid. p. 311-321, 339-340.

018:0353 Extracts from the history of the firm of Messrs. Charles Cammell & Co., Limited [1837-1901, Sheffield, steel-makers]. Ibid. p. 353-359, pl xxxi opp p 262.

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SECTION 1: CHRONOLOGICAL INDEX.

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SECTION 1: CHRONOLOGICAL INDEX.

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 023:0157 Marine steam turbine development. By C.A. Parsons; R.J. Walker (Parsons Marine Steam Turbine Co Ltd). Read, 15 Mar. 1907. Nels. Ibid, p 157-178 & tab i opp. 183-204, pl x-xxix opp p 302.
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 023:0231 Sectional work in ship construction (shipbuilding). By J.L. Twaddell (Palmer's Shipbuilding & Iron Co Ltd). Read, 3 May 1907. Nels. Ibid, p 231-233, 241-248.
 023:0249 On some experiments on the magnetic character of vessels (& compasses; inc. Thüringen, ss cargo ship). By W. Bunting (affiliation not known). Read, 24 May 1907. Nels. Ibid, p 249-257, 269-271, pl xxvi-xxvii opp p 302.
 023:0249 Producer gas for power (gas engines). By J. Neill (North Eastern Marine Engineering Co Ltd). Graduate Sect, 24 Feb 1906. [Nels.] Ibid, p 275-294.
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 024:0021 Presidential address (on education & training of naval engineers). By W.H. Daggdale (S. P. Austin & Sons Ltd, Sunderland). Read, 29 Nov 1907. Nels. Ibid, p 21-28.
 024:0025 Notes on the effect of work and time on the properties of mild steel and iron (corrosion & fatigue in marine boilers). By J.H. Slack (Lloyd's Register of Shipping). Read, 29 Nov 1907. Nels. Ibid, p 29-34, 49-61 & tab 1-4 opp, 61-97, pl i-vi opp p 376.
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 024:0121 Floating docks (design & construction). By F.R. Jarvis (affiliation not known). Read, 10 Jun 1908. Nels. Ibid, p 121-135, 147-150, 207-213.
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 024:0225 Piston speed and steam (reciprocating) engine economy. By R.L. Wighton (Armstrong Est. Nels.). Read, 20 Mar 1908. Nels. Ibid, p 225-239, 287-288, 300-316, pl xxx-xxxvi & xlv-l opp p 376.
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 024:0403 Obituary: David Nicholas Brims, 1851-1912. John Callinarius Bull, 1859-1912. Robert Craig, 1845-1911. Graydon Hume, 1857-1911. Mark William Swinburne, 1834-1912. Ibid, p 403, 404, 434-405; 403; 405-406.

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 025:0025 President's address (on ships; shipbuilding; education & training; management). By S. Hunter (North Eastern Marine Engineering Co Ltd, Walsend). Read, 6 Nov 1908. Nels. Ibid, p 25-43.
 025:0027 The electrical equipment of cranes. By J.H. Deekit (NEICES Secretary). Read, 20 Nov 1908. Sunderland. Ibid, p 45-71, 109-123, pl i-ix opp p 329.
 025:0101 Report of Educational Committee (of Dec 1903, amended Dec 1908, on apprentices). By NEICES Educational Committee. Read, 18 Dec 1908. Nels. Ibid, p 101-103.
 025:0125 A system of control for a shipyard (in Finland). By W.J. Wilson (William Craxton & Co Ltd, Engineers & Shipbuilders, Farnold). Read, 18 Dec 1908. Nels. Ibid, p 125-136, 135-136, pl x-xv opp p 329.
 025:0135 Fatigue of copper (steam) pipes. By J.M. Allan (Cammell, Laird & Co Ltd, Birkenhead). Read, 29 Jan 1909. Nels. Ibid, p 135-134, 157-175, 201-210, pl xv-xxix opp p 329.
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SECTION 1: CHRONOLOGICAL INDEX.

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027:0183 Note on a method of calculating cross curves of stability [of ships]. By F.H. Alexander ([Armstrong Coll. Nels]). *Read.* 27 Jan 1911, Nels. *Ibid.*, p 183-190, 193-198.

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027:0303 Report of the Representatives on Lloyd's Sub-Committee [on ship classification]. By [authors not known]. [submitted c1911]. *Ibid.*, p 303.

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028:0059 Certain aspects of ship resistance as disclosed by the performance of the corrugated sided vessel *Monitoria*. By A.H. Haver ([author]). *Read.* Nov 1911, *Ibid.*, p 59-123.

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SECTION I: CHRONOLOGICAL INDEX.

029:0600 Experimental apparatus showing cavitation in screw propellers. By C.A. Parsons (C. A. Parsons & Co Ltd). (Mar 1913. *Ibid.*, p 320-302.

029:0603 The architecture of the heavens (astronomy). By D. Gill (affiliation not known). *Read*, 15 Apr 1913. *Nele. Ibid.*, p 303-326 & fig 1-25 opp.

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030:0025 Presidential address (on ships internal combustion engines, gearing, superheating). By C.A. Parsons (C. A. Parsons & Co Ltd). *Read*, 13 Oct 1913. *Nele. Ibid.*, p 25-31.

030:0033 The present position of the diesel engine chiefly in marine propulsion. By G. Carls (affiliation not known. Belgium). *Read*, 29 Nov 1913. *Nele. Ibid.*, p 33-151.

030:0152 Life saving appliances (for ships). By J.H. Biles (Univ of Glasgow). *Read*, 27 Feb 1914. *Nele. Ibid.*, p 192-198 inc pl i-iv opp p 184.

030:0199 The effects of the detonation of gun-cotton. By B. Hopkinson (Univ of Cambridge). *Read*, 26 Jan 1914. *Nele. Ibid.*, p 199-217.

030:0218 High speed bearings. By G. Sney (consultant). *Read*, 20 Mar 1914. *Nele. Ibid.*, p 218-258 & pl v-vi opp.

030:0259 Wireless telegraphy (for ships). By H. Fothergill (affiliation not known). *Read*, 23 Apr 1914. *Nele. Ibid.*, p 259-298.

030:0309 Aeronautics. By A.E. Herriman (affiliation not known). *Read*, 1 May 1914. *Nele. Ibid.*, p 320-329.

030:0321 INA, IESS, & NECIES summer meeting, 7-10 July 1914, Newcastle upon Tyne: Report of proceedings. *Ibid.*, p 321-376. ppix-19 ppix listed as 030:0331 030:0205.

030:0331 On the protection of battleships against submarine attack (inc. hull bulges). By J.H. Biles (Univ of Glasgow). *Summer mtg*, 7 Jul 1914. *Nele. Announcement. Ibid.*, p 251. In *Trans INA*, v 56, 1914, p 257-270. [See also next 2 ppix, same Index No.]

030:0351 Recent developments of the hydraulic transformer. By H. Pöninger (affiliation not known, Germany). *Summer mtg*, 7 Jul 1914. *Nele. Announcement. Ibid.*, p 321. In *Trans INA*, v 56, 1914, p 271-299. [See also prev 1, next 2 ppix, same Index No.]

030:0331 Shipbuilding practice of the present and future. By T.G. John (Lloyd's Register of Shipping). *Summer mtg*, 7 Jul 1914. *Nele. Announcement. Ibid.*, p 311. In *Trans INA*, v 56, 1914, p 291-312. [See also prev 2, next ppix, same Index No.]

030:0331 Some notes on the design of floats for hydroplanes. By G.H. Miller (affiliation not known). *Summer mtg*, 7 Jul 1914. *Nele. Announcement. Ibid.*, p 321. In *Trans INA*, v 56, 1914, p 313-328. [See also prev 3, same Index No.]

030:0377 Some notes on warships designed and constructed by Sir W. G. Armstrong, Whitworth & Co., Ltd. By J.R. Parrot (Sir W. G. Armstrong, Whitworth & Co Ltd). *Summer mtg*, 8 Jul 1914. *Nele. Ibid.*, p 377-411.

030:0412 A review of the progress in the marine steam (reciprocating) engine on the North-East Coast during the last 15 years. By A.C. Ross (R. & W. Hawthorn, Leslie & Co Ltd). *Summer mtg*, 8 Jul 1914. *Nele. Ibid.*, p 412-442.

030:0452 Charging of two-cycle (internal combustion) engines. By B. Hopkinson (Univ of Cambridge). *Summer mtg*, 8 Jul 1914. *Nele. Ibid.*, p 452-462.

030:0462 A new type of internal combustion engine (Fullagar oil engine). By H.F. Fullagar (Menz & Malzelan Ltd). *Summer mtg*, 8 Jul 1914. *Nele. Ibid.*, p 463-504.

030:0505 Some tests on a diesel engine. By W.S. Burn (Royal Tech Coll, Glasgow). *Summer mtg*, 10 Jul 1914. *Nele. Ibid.*, p 505-525.

030:0526 On the strength of welds made by the oxy-acetylene process. By A. Curpion; W.C. Gray (affiliations not known). *Summer mtg*, 10 Jul 1914. *Nele. Ibid.*, p 526-545.

030:0546 Influence of various temperatures on the properties of Admiralty gun-metal. By J.G. Longbottom; A. Curpion (affiliations not known). *Summer mtg*, 10 Jul 1914. *Nele. Ibid.*, p 546-581 inc pl i-xv opp p 570.

030:0582 Presentation of the Honorary Freedom of Newcastle upon Tyne to The Hon. Sir Charles Algernon Parsons, Knight, K.C.B., F.R.S., Thursday, 9th July, 1914. *Ibid.*, p 582-593.

030:0601 Report of the year ended 5 March, 1914, of the work of the Consultative Committee of the NECIES to confer with the Marine Department Board of Trade (on ship regulations). By [authors not known]. *Ibid.*, p 601-605.

030:0626 Obituary: Samuel James Pope Thearle, 1846-1913. William Cumming, 1857-1914. (Capt) Robert Tully, c1879-1914. *Ibid.*, p 606-609; 609-610; 613.

031:0000 NECIES Transactions, v 31, 1914-1915, [7] ppix, vi, 514 p, iv [appendix]

031:0002 Statement (by the President of World War I). By A. Nells (Sir W. G. Armstrong, Whitworth & Co Ltd). *Read*, 30 Oct 1914. *Nele. Ibid.*, p 2-2.

031:0023 The progress of reform in the engineer branch of H.M. Navy (inc. education & training of naval engineers). By D.E. Moran (Richardson, Wagstaff & Co Ltd). *Read*, 26 Feb 1915. *Nele. Ibid.*, p 23-58.

031:0059 Aircraft in warfare. By E. Barmann Phillips (affiliation not known). *Read*, 29 Jan 1915. *Nele. Ibid.*, p 59-90.

031:0081 Industrial locomotives (design). By J.W. Henson (R. & W. Hawthorn, Leslie & Co Ltd). *Read*, 30 Oct 1914. *Nele. Ibid.*, p 91-120.

031:0111 The future of British engineering and shipbuilding (inc. education & training, research, management). By E.W. Fraser-Smith (NECIES). *Read*, 19 Mar 1915. *Nele. Ibid.*, p 121-125.

031:0227 The remarkable failure of a consignment of steel ship plates (on metallurgy, riveting, shipbuilding). By W.H. Wilson (affiliation not known). *Read*, 23 Nov 1914. *Nele. Ibid.*, p 227-233.

031:0294 The modern aeroplane. By R.T. Glazebrook (National Physical Lab). *Read*, 30 Apr 1915. *Nele. Abridged text. Ibid.*, p 294-299.

031:0305 Obituary: (Lt) Thomas Lindsay Bainbridge, 7-1915. Robert Melvin, c1857-1915. Thomas Samuel Playle, 7-1914. William Wood, c1856-c1915. *Ibid.*, p 305; 305; 305-306; 306.

032:0000 NECIES Transactions, v 32, 1915-1916, [6] ppix, vii, 540 p, w pl. [bibliography] 50 p, book pages]

032:0005 Presidential address (on industrial production; education & training: The War). By H.B. Rowell (R. & W. Hawthorn, Leslie & Co Ltd). *Read*, [Oct 1915. *Nele. Ibid.*, p 5-21.

032:0041 Notes on model experiments (ship resistance model tests, inc. bulkheads, lines plans, ridge keels, struts). By G.S. Baker (William Beard & National Trans). *Read*, 26 Nov 1915. *Nele. Ibid.*, p 41-136, pl i-iv opp p 340.

SECTION 1- CHRONOLOGICAL INDEX.

- 032:0137 The time-element and related matters in some ship calculations [damaged stability; resistance]. By J.J. Weach ([Armstrong Coll. Nels.]. Read, 17 Dec 1915, Nels. Ibid, p 127-133.
- 032:0164 The standardization of stability curves [of ships] By W. Ayre ([John Lewis Ltd, Aberdeen]). Read, 28 Jan 1916, Nels. Ibid, p 164-193.
- 032:0194 The education of youths before and during their apprenticeship. By V.A. Mundella (Technical Coll, Sunderland). Read, 25 Feb 1916, Nels. Ibid, p 194-285.
- 032:0287 The business side of science: Its part in the coming economic crisis. By T.C. Elder (British Electrical & Allied Manufacturers' Assoc). Read, 7 Apr 1916, Nels. Ibid, p 287-308.
- 032:0314 Obituary: (Sir) Andrew Noble, 1831-1915. John Tweedy, 1850-1916. (Maj) Robert Hume Muir, c1852-1915. William Stevenson, c1842-1915. Ibid, p 314-320; 321-323, 323-324; 324.
- 032:0325 Obituary: Adam Latimer Armstrong, c1894-1916. John Hateman, ?-1915. (Col Sir) John Edward Bingham, 1839-1915. Edward Asher Cohen, 1849-1916. Ibid, p 325; 325; 325-327; 327-328.
- 032:0329 Obituary: (Engr Sub-Lt) Eric Treve Champness, 1890-1916. (Lt) Louis Mortimer Douglas, ?-1915. William Esherby, ?-1915. Clonver Wilson Fairweather, ?-1916. Joseph Simpson Graham, 1864-1915. Ibid, p 329; 329; 329; 329, 329-330.
- 032:0330 Obituary: Richard Oliver Heston, 1842-1916. Gilbert Forster Haddock, ?-1915. Pearson Lund, ?-1915. Hugo Mac-Coll, 1861-1915. Ibid, p 330-331; 331-332; 332; 332-333.
- 032:0334 Obituary: (Engr-Lt Comm) F. J. Pugh, ?-1916. Frederick W. Purvis, ?-1915. (Lt) William Ewart Robinson, ?-1915. Harry Harding Whitehead, ?-1915. Ibid, p 333-334; 334, 334, 334.
- 032:TD01 List of recent engineering articles of interest. 31 Aug - 1 Nov 1915. Ibid, pink p 1-various pages opp p 340 [pages not numbered T, and are pink].

- 033:0000 NECIES Transactions, v 33, 1916-1917. [1] pgs, v. 365 p
- 033:0033 Works organization: Part 1, Manufacturing organization; Part 2, Financial organization; Part 3, Selling organization [inc. shipbuilding]. Pt 1 by A.F.C. Parsons, Pt 2 by E.L. Orde ([Sir W. G. Armstrong, Whitworth & Co Ltd]); Pt 3 by G.H. Twalsh ([affiliation not known]). Read, 26-27 Oct 1916, Nels. Ibid, p 33, 34-43 [Pt 1], 53-62 [Pt 2], 63-78 [Pt 3], 79-202 [discs, etc].
- 033:0233 The economics of [the British] empire. By M. Frowen ([affiliation not known]). Read, [15 Jan 1917, Nels.] Ibid, p 203-232.
- 033:0233 Guidance specification for reciprocating triple expansion marine engines for cargo vessels. Compiled by Council & Members of NECIES. Submitted, 17 Jan 1917, Nels & revised. Ibid, p 233-241.
- 033:0243 A method of finding the I.H.P. (powering) for steamships. By E.W. De Rosen ([Swan, Hunter, & Wigham Richardson Ltd]). Read, 27 Apr 1917, Nels. Ibid, p 243-260.
- 033:0272 Obituary: (Sir) Benjamin Chapman Browne, 1829-1917. (Sir) William Theodore Duxford, 1841-1916. John Duck-RI, 1843-1917. Edward Coulter Champness, c1853-1917. Ibid, p 272-280; 281-284; 284-286; 286-287.
- 033:0287 Obituary: Hugh Francis Fullagar, c1873-c1917. William Nixon, 1884-1916. Joseph M. Rennaldson, 1847-1916. Joseph Shutt, c1856-1917. James Brotherton, 1858-1916. Ibid, p 287-289; 289-290; 290-291; 291-292; 292.
- 033:0293 Obituary: John Cooke, ?-1916. John Foggan, ?-1917. Thomas Linton Livingston, c1863-1916. Roger Wright, c1865-1917. Percy Worsham Walker, 1885-1917. Ibid, p 292-293; 293; 293-294, 294-295; 295.

- 033:0293 Obituary: Basil Hollis, ?-1917. John William Sqaunce, 1854-1916. John Dickenson, ?-1917. Ibid, p 295-296; 296; 296-297.
- 033:0297 Obituary: Frank Basil Goodall, ?-1916. Eric William Wright Sandison, c1892-1916. William Laurence C. Sheekleton, ?-1917. John Kenneth Stead, ?-1917. Ibid, p 297, 297; 298, 298.

- 034:0000 NECIES Transactions, v 34, 1917-1918. [1] pgs, v. 405 p
- 034:0007 Presidential address [on industry; shipping; research; education & training]. By E.L. Orde ([Sir W. G. Armstrong, Whitworth & Co Ltd]). Read, 30 Nov 1917, Nels. Ibid, p 6-22.
- 034:0052 Report of the [NECIES] Committee on the Education of Apprentices. To the Council of NECIES. Submitted to Council, Nov 1915. Ibid, p 52-82.
- 034:0083 First report of the Council of the NECIES on certain methods of producing high vacuum [pumps for marine condensers]. By E.L. Orde ([Sir W. G. Armstrong Whitworth & Co Ltd]); C.W. Cairns ([Cairns Noble]); J. Morrow ([Armstrong Coll, Nels.]). Submitted, [c1917]. Ibid, p 83-132.
- 034:0133 Address by the Right Hon. Christopher Addison, M.D., M.P., Minister of Reconstruction, [on nationalised industry & economies]. By C. Addison (Ministry of Reconstruction). Read, 25 Jan 1918, Nels. Ibid, p 133-150.
- 034:0151 Some insufficiently considered details of ship construction and equipment [inc. mooring chales, auxiliary deck equipment, structural design]. By C.W. Cairns ([Cairns Noble]). Read, 21 Dec 1917, Nels. Ibid, p 151-210.
- 034:0211 Ferro-concrete ships. By F.J. Guerine (French Board of Trade). Read, 12 Mar 1918, Nels. Ibid, p 211-266.
- 034:0257 High speed internal combustion engines. By H.K. Ricardo ([consult.]). Read, 30 Apr 1918, Nels. Ibid, p 267-364.
- 034:0355 Water-power development in Canada [inc. hydroelectric power stations]. By J.C. McLennan ([Admiralty]). Read, 27 Feb 1918, Nels. Abstract, ibid, p 355-367.
- 034:0357 Internal ballistics [internal combustion engines, fuels, explosives]. By G. Haddock ([Sir W.G. Armstrong, Whitworth & Co Ltd]); Delivered by H.G. Taylor. Read, 9 Apr 1918, Nels. Abstract, ibid, p 367-369.
- 034:0359 Some aspects of the naval war. By E.H. Gordon (former) with P. & O. Co Ltd. Read, 19 Apr 1918, Nels. Abstract, ibid, p 369-370.
- 034:0370 The future of aerial transport. By G.H. Thomas ([affiliation not known]). Read, 22 Apr 1918, Nels. Abstract, ibid, p 370-371.
- 034:0379 Obituary: (Duke of Nland) Henry George Percy, 1846-1918. David Andrew, c1841-1918. Bernard George Arkwright, 1861-1917. Charles Wilkinson Bluge, 1858-1916. Ibid, p 375-383, 380, 380-381, 381-382.
- 034:0382 Obituary: Vyvyan Oswald Davis, c1885-1918. Peter Denny, 1852-1917. John Duncan Hodgson, 1856-1918. Algernon George Parsons, ?-1918. Ibid, p 382; 282-383; 384; 384.
- 034:0385 Obituary: Josiah Richard Perrett, 1848-1918. Frank Sibbald, ?-1918. Joseph Pearce Stockbridge, 1883-1918. Joseph Andrew Thompson, 1876-1918. Ibid, p 385, 386, 385, 386-387.
- 034:0387 Obituary: Richard Charles Thompson, ?-1918. Harry Atkinson, 1862-1917. Walter Foveus, 1880-1918. Carl Edwin Peterson, 1883-1917. Lowry Rusden, ?-1917. Ibid, p 387; 387, 387-388, 388; 388-389.
- 034:0389 Obituary: Ritchie Whettem, ?-1917. William Adam Wynd, ?-1917. George Evington, ?-1917. Arthur Liberty Miller, 1887-1918. Ibid, p 389, 389, 390-393.
- 034:0391 Obituary: (Sir) Juan Gunn, 1837-1918. William Scott Robertson, 1898-1918. Henry Clifford Stroud, c1894-c1918. Charles Wurdorpe Taylor, c1856-1918. Ibid, p 391, 391, 391; 392; 392-393.

SECTION 1: CHRONOLOGICAL INDEX.

035:0000 NECTES Transactions, v 35, 1918-1919, [15] ppts, vi, 622 p. 8 pl.

035:0003 Presidential address [on economics; production; shipbuilding]. By E.L. Cree (Sir W. G. Armstrong, Whitworth & Co Ltd). Read, 25 Oct 1918, Nels. Ibid. p 3-20.

035:0048 Electric welding for shipbuilding purposes. By W.S. Abel (Lloyd's Register of Shipping) Read, 8 Nov 1918, Nels. Ibid. p 49-68.

035:0069 Scientific research in connexion with marine engineering and shipbuilding. By F.H. Heath (Committee of the Privy Council for Scientific and Industrial Research). Read, 15 Nov 1918, Nels. Ibid. p 69-85.

035:0086 The economic efficiency of merchant ships. By A. Uerun (affiliation not known) Read, 14 Jan 1919, Nels. Ibid. p 86-108, pl 1 opp p 602.

035:0169 The manufacture and design of toothed gearing. By J. Wilson (Parsons Marine Steam Turbine Co) Read, 11 Feb 1919, Nels. Ibid. p 109-159

035:0181 Shipbuilding development in the United States and Canada. By W.R. Gray; E.F. Clarke (North of Ireland Shipbuilding Co Ltd, Londonderry). Read, 17 Dec 1918, Nels. Ibid. p 151-178, pl i-iii opp p 602.

035:0179 Machine tools. By A. Herbert (Alfred Herbert & Co Ltd). Read, 11 Mar 1919, Nels. Ibid. p 179-226, pl iv opp p 602.

035:0227 Women's work in engineering and shipbuilding during the war. By Hon Lady (K.) Parsons (wife of Sir C.A. Parsons). Victory mtg, 9 Jul 1919, Nels. Ibid. p 227-236

035:0237 The dazzle painting of ships [anti-submarine warfare]. By N. Wilkinson [consultant artist]. Victory mtg, 10 Jul 1919, Nels. Ibid. p 237-267.

035:0268 Some developments in aircraft design and application during the war. By Lord Weir of Eastwood (F. & W. Wey Ltd). Victory mtg, 10 Jul 1919, Nels. Ibid. p 268-347.

035:0349 Shiprepairing on the North-East Coast during the war. By M.C. James (Mercantile Dry Dock); L.E. Smith (Smiths Dock Ltd). Victory mtg, 11 Jul 1919, Nels. Ibid. p 349-385

035:0386 Science and its application to marine problems [inc. anti-submarine warfare; radio; helium aeriplanes]. By J.C. McLernan (Admiralty). Victory mtg, 10 Jul 1919, Nels. Ibid. p 386-410.

035:0411 The limits of thermal efficiency in diesel and other internal combustion engines. By D. Clark (affiliation not known). Victory mtg, 10 Jul 1919, Nels. Ibid. p 411-478

035:0479 A short record of the work of the principal industries of the North East Coast during the war [inc. shipbuilding; repairing; marine engineering; weapons]. By A.H.J. Cooleman (Sir W.G. Armstrong, Mitchell & Co Ltd) Victory mtg, 9 Jul 1919, Nels. Ibid. p 479-524.

035:0525 NECTES Victory Meeting, 9-11 Jul 1919, Newcastle-upon-Tyne. Programme, Banquet Report, Proceedings. (By various speakers). Ibid. p 525-564. [papers issued in 035:0227-035:0479]

035:0574 Obituary: Albert Allen, c1872-1919. Robert Baggallay, ?-1918. William Boyd, c1829-1919. Axel Frederick Ericsson, c1853-1919. John Henderson, ?-1919. Ibid. p 574; 574-575-581; 581-582; 582.

035:0582 Obituary: John Inglis, 1844-1919, William Maughan, ?-1918. Ibid. p 582-584; 584-585.

035:0585 Obituary: Charles Ogilvie Robinson, c1876-1919. William Swan Stalybrass, ?-1919. Walter Henry Smart, 1889-1918. Henry Bell Wortley, c1868-1919. Ibid. p 585; 585; 585; 585.

036:0000 NECTES Transactions, v 36, 1919-1920, [12] ppts, vi, 622 p. xvi pl. 68 p.

036:0005 Presidential address [on education & training; production; employment]. By A.E. Doxford (William Doxford & Sons Ltd). Read, 24 Oct 1919, Nels. Ibid. p 5-11.

036:0053 A test of watertight bulkheads for ship subdivision. By A. Hogg (affiliation not known). Read, 28 Nov 1919, Nels. Ibid. p 33-72.

036:0073 The application of geared turbines to merchant ships. By R.J. Walker (Parsons Marine Steam Turbine Co). Read, 19 Dec 1919, Nels. Ibid. p 73-137

036:0138 Some suggested developments of laying off for the speeding up of ship construction [shipbuilding]. By L.C. Cooper (affiliation not known). Read, 23 Jan 1920, Nels. Ibid. p 138-165.

036:0166 Diesel engine castings. By F.J. Cook (affiliation not known). Read, 30 Jan 1920, Nels. Ibid. p 166-213, 423-424

036:0216 On the importance of observing correct temperatures in marine propelling installations, with special reference to thermocouples. By M.S. Gaby (Central Marine Engine Works, W. Hartlepool) Read, 20 Feb 1920, Nels. Ibid. p 216-258.

036:0260 Flying boats: the form and dimensions of their hulls. By G.S. Borer (William Fronds National Expt Tank). Read 27 Feb 1920, Nels. Ibid. p 260-314

036:0315 Guidance specifications for [steam] reciprocating triple expansion marine engines for cargo vessels (1920). [1st rev of 1st ed, 1917]. Compiled by the Council & members of NECTES. Ibid. p 315-320

036:0321 [Steam] Turbine steels: a research into their mechanical properties. By W.H. Hatfield (Brown-Birth Research Lab. Sheffield); H.M. Duncan (C.A. Parsons & Co Research Lab). Read, 19 Mar 1920, Nels. Ibid. p 321-354, 435-484.

036:0353 Casting and treatment of steel. By J.H. Andrew (Sir W.G. Armstrong, Whitworth & Co Ltd Open-Cast). Read, 16 Apr 1920, Nels. Ibid. p 355-380, 485-495

036:0387 Report to the Council of the NECTES on tests of auxiliary condensers. By C.W. Cairns (Cairns-Noble & Co); J. Marrow (Armstrong Coll. Newcastle). [Reviewed, 19 Mar 1920]. Ibid. p 381-455, 529-561.

036:0496 A modern power station and its development. By J.S. Watson (Newcastle-upon-Tyne Electric Supply Co Ltd). Read, 30 Apr 1920, Nels. Ibid. p 496-559

036:0576 Obituary: George Ainsworth, c1830-1920. Thomas Black, c1851-1920. Norman Burnett, 1866-1919. Hugh Robert Cameron, c1874-1920. Maurice Harold Cutler, ?-1920. Ibid. p 574; 574-575; 575; 575; 575.

036:0577 Obituary: (Admiral Fleet) Lord [John A.] Fisher of Kilverstone, 1841-1920. Christopher Geddes, c1846-1919. William Leslie Gordon, 1851-1919. John Hall, ?-1920. Ibid. p 576-579; 579; 579-580; 580

036:0580 Obituary: Ebenezer Hall-Brown, c1861-1919. Charles Wesley Hutchinson, c1841-1920. David Murray, ?-1920. Thomas Cairness Nicholson, ?-1920. Ibid. p 583-581, 581-585; 585; 585.

036:0585 Obituary: Frederick Denis Pyne, c1883-1919. George MacKenzie Rhind, c1875-1920. (Sir) Arthur Ritson, ?-1920. Ibid. p 585; 585; 586.

036:0587 Obituary: William Cringle Roberts, c1843-1919. James Scott, c1856-1920. James Skinner, c1834-1920. John James Walker, ?-1918. Ibid. p 586; 586; 587-588; 588.

037:0000 NECTES Transactions, v 37, 1920-21, [8] ppts, vi, 464 p. 7 pl.

037:0025 Presidential address [on education & training; engines]. By A.E. Doxford (William Doxford & Sons Ltd). Read, 29 Oct 1920, Nels. Ibid. p 29-36.

037:0037 Some experiments in connexion with the injection and combustion of fuel oil in diesel engines. By C.J. Hawkes (Armstrong Coll. Newcastle). Read, 25 Nov 1920, Nels. Ibid. p 37-75.

SECTION 1: CHRONOLOGICAL INDEX.

037:0152 The relation between shipbuilding production, prices, and the freight market. By M. Ballard (Swan, Hunter, & Wigham Richardson Co Ltd). Read, 17 Dec 1920. Nels. Ibid, p 152-184, pl i-iii app p 454.

037:0185 Advantages of the use of the water-tube boiler in the mercantile marine. By J. Kemna (Halscock & Wilson & Co Ltd). Read, 14 Jan 1921. Nels. Ibid, p 185-208, pl iv-v; app p 454.

037:0209 Fuel oil. By W.A. White (White Patent Oil Burning Co Ltd). Read, 28 Jan 1921. Nels. Ibid, p 209-248.

037:0249 On the losses in convergent nozzles (fluid mechanics in steam turbines). By A.L. Melanby, W. Kerr (Glasgow Technical Coll). Read, 18 Feb 1921. Nels. Ibid, p 249-252.

037:0323 Organization for ship production. By W. Ayre (Burnside Shipbuilding Co). Read, 11 Mar 1921. Nels. Ibid, p 313-380.

037:0393 The causes of detonation (fuel combustion) in internal-combustion engines. By H.T. Tizare (Royal Aircraft Establishment). Read, 11 May 1921. Nels. Ibid, p 381-440, p vii app p 464.

037:0449 Obituary: Edwin William De Russet, c1941-1921. John Kirkaldy, 1853-1920. Edwin Lancelot Ord, 1863-1920. Ibid, p 449, 449-450; 450-457.

037:0452 Obituary: J. M. Robson, ?-1920. Alexander Roland, c1853-1921. Henry W. L. Stribrook, 1865-1920. Ibid, p 452; 452-453, 453-454.

038:0000 NECTES Transactions, v 38, 1921-1922, [13], vi, 610 p, v pl.

038:0025 Presidential address (on shipbuilding; commerce; industrial relations). By W. F. Noble (Carnegie-Noble & Co). Read, 14 Oct 1921. Nels. Ibid, p 25-36.

038:0037 Sea casualties and loss of life. By W.S. Abell (Lloyd's Register of Shipping). Read, 4 Nov 1921. Nels. Ibid, p 37-72.

038:0073 The working of a modern telephone system. By C. White (affiliation not known). Read, 11 Nov 1921. Nels. Ibid, p 73-101.

038:0131 Mang gearing. By L.J. Le Mesurier (affiliation not known). Read, 22 Nov 1921. Nels. Ibid, p 101-156.

038:0157 Note on some proposals made during the war for protecting merchant ships against submarines (i.e. hull bulges). By E.H. Tenyson d'Almeida (Sir W. G. Armstrong, Whitworth & Co Ltd). Read, 2 Dec 1921. Nels. Ibid, p 157-172, pl iv-v app p 552.

038:0173 Railway electrification. By V.L. Eaves (North Eastern Railway Co Ltd). Read, 16 Dec 1921. Nels. Ibid, p 173-240, pl v app p 510.

038:0241 Diesel-engine flexibility. By W.S. Burn (Richardson, Westgarth Co Ltd). Graduate Section, 2 Jan 1922. Nels. Ibid, p 241-315, 465-474.

038:0317 The use of compressed air in diesel-engine ships. By W. Reave (Rawell Ltd, Ipswich). Read, 27 Jan 1922. Nels. Ibid, p 317-348.

038:0329 Some notes on shipbuilding methods (standardization). By J. McGovern (Furness Shipbuilding Co Ltd). Read, 13 Feb 1922. Nels. 17 Feb 1922. Middlesbrough. Ibid, p 349-402.

038:0402 Some problems of marine diesel engine design. By P. Belyasin (Swan, Hunter, & Wigham Richardson Co Ltd.). Read, 24 Feb 1922. Nels. 17 Mar 1922. Middlesbrough. Ibid, p 403-457.

038:0477 Standardization (in engineering design): its fundamental importance to the prosperity of our trade. By C. Le Maistre (British Engineering Standards Assoc). Read, 24 Mar 1922. Nels. Ibid, p 477-508.

038:0509 Corrosion: with special reference to the ferrous metals and the deterioration of ships. By A. Pickering (Lloyd's Register of Shipping). Read, 28 Apr 1922. Nels. Ibid, p 509-548, pl v-vi app p 610.

038:0549 The actual running cost of motorships. By C. Maister (Rederi A/B Transatlantic of Gothenburg, Sweden). Read, 7 Apr 1922. Nels. Ibid, p 549-580.

038:0589 Obituary: John Allan, c1865-1921. James Bain, c1847-1922. (Sir) Francis (Henry) Barker, 1865-1922. Samuel Buchanan, ?-1921. (Sir) George John Carter, 1860-1922. Ibid, p 589; 589-590, 590; 590; 590-592.

038:0593 Obituary: Charles Christie, c1890-1922. Alexander Cleghorn, ?-1922. James Dickie, c1847-1922. Anthony Strong Frazer, ?-1921. Henry E. Hollis, c1854-1921. Ibid, p 593; 593; 593-594; 594; 594.

038:0595 Obituary: Charles Samuel Hunting, c1853-1921. John Johnson, c1859-1921. John Andrew Mannell, 1876-1921. (Sir) Herbert Babington Rowell, c1862-1921. Ibid, p 595; 595; 595-596; 596-620.

038:0600 Obituary: Charles Henry Tate, c1848-1922. Henry Withy, c1852-1922. Ibid, p 600; 600-600.

039:0000 NECTES Transactions, v 39, 1922-1923, [20] pgs, vi, 689 p, xii pl.

039:0037 Presidential address (on management; education & training; manpower). By A.C. Ross (R. & W. Hawthorn, Leslie & Co Ltd). Read, 27 Oct 1922. Nels. Ibid, p 7-12.

039:0032 Wave power transmission. (A brief statement of the physical principles involved; fine wave mechanics; vibrating machinery). By W. Danvers (affiliation not known). Read, 27 Oct 1922. Nels. Ibid, p 32-59.

039:0059 Working practice in the design of large double-acting two-stroke (diesel) engines. By A.E.L. Chilton (affiliation not known). Read, 3 Nov 1922. Nels. Ibid, p 59-143.

039:0143 Notes on torsional oscillations with special reference to marine reduction gearing. By A.T. Thorpe, J. Caldwell (Swan, Hunter, & Wigham Richardson Co Ltd). Read, 17 Nov 1922. Nels. Ibid, p 143-191.

039:0192 Some factors affecting the utilization of heavy oils in internal-combustion engines (diesel engines). By F. Moore (affiliation not known). Read, 1 Dec 1922. Nels. Ibid, p 192-220.

039:0271 Notes on the presentation of ship model experiment data. By E.V. Telfer (Mentor Shipping Ltd). Read, 28 Nov 1922. Middlesbrough, 5 Dec. Nels. Ibid, p 221-259, pl i app p 680.

039:0305 Review of different types of marine internal combustion engines. (By various companies). Read, 12 & 26 Jan 1923. Nels. Ibid, p 310-374, pl iv-vi app p 689 [7 pgs in 039:0305-323].

039:0305 Armstrong-Sulzer (marine) diesel engine. By Sir W.G. Armstrong Whitworth & Co Ltd. Read, 12 & 26 Jan 1922. Nels. Ibid, p 365-376, pl v app p 685. [see also 039:0300].

039:0307 Cammell Laird-Falagar marine oil engine. By Palmers Shipbuilding & Iron Co Ltd, Cammell, Laird & Co Ltd. Read, 12 & 26 Jan 1922. Nels. Ibid, p 307, 309, pl iv; app p 685. [see also 039:0301].

039:0309 Duxford opposed-piston marine oil engine. By Wilcox Duxford & Sons Ltd. Read, 12 & 26 Jan 1922. Nels. Ibid, p 309-315, pl v app p 689. [see also 039:0300].

039:0315 Neptune marine oil engine. By Swan, Hunter, & Wigham Richardson Ltd. Read, 12 & 26 Jan 1922. Nels. Ibid, p 315-318, pl v app p 689. [see also 039:0300].

039:0316 The Scott-Still marine oil engine. By Scott's Shipbuilding & Engineering Co Ltd. Read, 12 & 26 Jan 1922. Nels. Ibid, p 318-320, pl vi app p 689. [see also 039:0300].

039:0321 Vickers (marine) internal-combustion engine. By Vickers Ltd. Read, 12 & 26 Jan 1922. Nels. Ibid, p 321-323, pl vii app p 689. [see also 039:0300].

039:0321 The Workspan (marine internal combustion) engine. By R. & W. Hawthorn, Leslie & Co Ltd. Read, 12 & 26 Jan 1922. Nels. Ibid, p 323-324, pl viii app p 689. [see also 039:0300].

SECTION I: CHRONOLOGICAL INDEX.

039:0315 Marine oil engine installation and auxiliaries. By P. Hejnyan (Swan, Hunter, & Wigham Richardson Co Ltd). Read, 2 Feb 1923. Nels. Ibid, p 375-410.

039:0411 A review of [steam] turbine troubles and their causes. By A.L. McIlroy; W. Kerr (Technical Coll, Glasgow). Read, 16 Feb 1923. Nels. Ibid, p 411-469.

039:0420 Measured mile trials and other ship propulsion data. By G.S. Baker (William Froude National Expt Tank). Read, 2 Mar 1923. Nels. Ibid, p 470-540.

039:0541 Notes on the economical performance of [steam] turbine installations in merchant ships. By T.G. Poole (affiliation not known). Read, 16 Mar 1923. Nels. Ibid, p 541-570, pl ix xii opp p 689.

039:0571 Powdered coal as fuel for steam turbines in merchant ships. By J.L. Dunn (affiliation not known). Read, 6 Apr 1923. Nels. Ibid, p 571-665.

039:0592 Possibilities of increased efficiency in railway locomotives. By T. Grime (R. & W. Hawthorn, Leslie & Co Ltd). Read, 20 Apr 1923. Nels. Ibid, p 665-655.

039:0676 Obituary: Francis James Daniel, c1801-1923. Edgar Sydney Gardiner, c1901-1923. Edward Hardy, ?-1923. Ibid, p 676.

039:0677 Obituary: George Jones, c1846-1923. Ragnarald Krohn, ?-c1923. John Ramsay Lunn, ?-1922. Alexander McRae, ?-1923. Ibid, p 677.

039:0678 Obituary: Leonard Frank Orr, c1889-1922. Edward Robson, c1864-1922. Ibid, p 678.

040:0060 NECTES Transactions, v 40, 1923-1924. [13] pp. vi, 559 p. xii pl.

040:0020 Presidential address [no specific subject]. By A.C. Ross (Hawthorn, Leslie & Co Ltd). Read, 19 Oct 1923. Nels. Ibid, p 29-22.

040:0025 The causes of rapid corrosion of condenser tubes. By G.D. Bempough; R. May; R. Firer (Bureau of Mar. En). Read, 19 Oct 1923. Nels. Ibid, p 23-106.

040:0147 Development of ships' structural design. By H.W. Carlini (consultant). Read, 2 Nov 1923. Nels. Ibid, p 107-138.

040:0139 Essential factors in ship propeller design. By A.F. Ainslie (Power Plant Cr Ltd). Read, 16 Nov 1923. Nels. Ibid, p 139-216, pl i opp p 369.

040:0219 Stability (of ships) within the deck edge range. By W.R.G. Whiting (Sir W.G. Armstrong, Whitworth & Co Ltd). Read, 23 Nov 1923. Nels. Ibid, p 219-257.

040:0254 The influence of propeller revolutions upon the propulsive efficiency of merchant ships. By K. Schaffran (Bohrer Ship Experiment Tank, Germany). Read, 7 Dec 1923. Nels. Ibid, p 254-320, pl ii-xii opp p 565.

040:0321 Influence of type of propelling machinery on the running costs of ships. By W.G.A. Perring (affiliation not known). Read, 18 Jan 1924. Nels. Ibid, p 321-354, 481-484.

040:0355 Cylinder castings (of engines): cause and elimination of the common defects in manufacture. By C. Smalley (affiliation not known). Read, 1 Feb 1924. Nels. Ibid, p 355-392, 433-480.

040:0363 The type of Still engine required for marine service with special reference to the Scott-Still (oil) engine. By W.J. Still (affiliation not known). Read, 15 Feb 1924. Nels. Ibid, p 393-438.

040:0439 The presentation of propeller experiment data. By F.V. Telfer (Merrill Springs Ltd). Read, 21 Mar 1924. Nels. Ibid, p 439-484.

040:0485 Some aspects of the large marine oil engine. By C.J. Hawkes (Armstrong Co, Nels). Read, 4 Apr 1924. Nels. Ibid, p 485-515.

040:0517 The progress in marine propulsion during the last ten years and some of its possibilities [inc. steam reciprocating engines vs diesel engines; coal vs oil]. By A.C. Ross (R. & W. Hawthorn, Leslie & Co Ltd). In conj with IESS & INA, 27 Jun

1924. London. Ibid, p 517-527. Also in Trans INA, v 66, 1924, p 350-359.

040:0528 Report of the Joint Summer Meeting. (NECEFS, IESS, & INA), 24-28 Jun, London; 30 Jun-1 Jul, Glasgow; 2 Jul 1924. Nels. Ibid, p 528-538. [see opp in 040:0517, 6 pp. in Trans INA, v 66, 1924, p 279-381. [see following 6 pp. same Index No.].

040:0528 Ship design. By J.H. Hils (University of Glasgow). Read, 25 June 1924. London. Announcement, ibid, p 528. In Trans INA, v 66, 1924, p 289-301. [see prev 1 ppr, following 5 pp. same Index No.].

040:0528 Advanced naval bases. By S.F. Staples (affiliation not known); D.J. Munro (Royal Navy, retired). Read, 25 June 1924. London. Announcement, ibid, p 528. In Trans INA, v 66, 1924, p 302-318. [see prev 2 pp. following 9 pp. same Index No.].

040:0528 Steering of ships in shallow water and canals. By G.S. Baker; (Mrs) E.M. Keary (National Physical Lab). Read, 25 June 1924. London. Announcement, ibid, p 528. In Trans INA, v 66, 1924, p 319-340. [see prev 3 pp. following 3 pp. same Index No.].

040:0528 Passenger ship design from an independent point of view. By J. Anderson, E. Steele (affiliation not known). Read, 25 June 1924. London. Announcement, ibid, p 528. In Trans INA, v 66, 1924, p 341-349. [see prev 4 pp. following 2 pp. same Index No.].

040:0528 New type of double-acting diesel engine for marine purposes. By G.J. Legg (Wessexport); I. Hunter (North Eastern Marine Engineering Co Ltd). Read, 27 June 1924. London. Announcement, ibid, p 528. In Trans INA, v 66, 1924, p 361-370. [see prev 5 pp. following 1 ppr, same Index No.].

040:0528 Displacement-draught formulae (ship hydrostatics). By W.H. Riddelwood (affiliation not known). Read, 27 June 1924. London. Announcement, ibid, p 528. In Trans INA, v 66, 1924, p 371-380. [see prev 6 pp. same Index No.].

040:0547 Obituary: William N. Burtram, 1862-1923. Edward Catharine Chaston, c1859-1923. Henry Crown, c1868-1924. James Dickie, c1848-1924. James Peter Franki, ?-1924. Ibid, p 547; 548; 548; 549; 549.

040:0548 Obituary: Thomas Henry Hensworth, ?-1924. G. C. Hobbs, ?-1924. James Kerfoot, ?-1924. Henry Esplen Lamb, c1870-1924. William Latimer, ?-1923. Ibid, p 549; 549-550; 550; 550, 551.

040:0551 Obituary: Thomas Lumsden, c1868-1924. James Hector McDiagle, c1900-1923. Robert McNair McLaren, c1870-1923. J. C. F. Miller, ?-1923. Daniel Rues, c1867-1924. Ibid, p 551; 551; 551-552; 552; 552-553.

040:0553 Obituary: Charles Renolds, c1858-1924. John Rendison, ?-1923. James Secole, ?-1923. Ramsay Alexander Simon, ?-c1923. Ibid, p 553; 553; 553; 553-554.

040:0554 Obituary: John Edward Stead, 1851-1922. Joseph Charles Stephens, c1869-1924. James Thompson, c1876-1924. Robert Wallis, ?-1924. Ibid, p 554-557; 557; 558; 558-559.

041:0060 NECTES Transactions, v 41, 1924-1925. [10] pp. vii, 428, 75 p.

041:0020 Presidential address [on waste; fuel; combustion efficiency; industrial relations]. By T. Westgarth (Richardson, Westgarth Co. Ltd). Read, 19 Oct 1924. Nels. Ibid, p 20-39.

041:0031 Girders in ships [structural design]. By J.F. King (British Corporation Register of Shipping). Read, 14 Nov 1924. Nels. Ibid, p 31-52, 37-46.

041:0053 The prediction of critical speeds in ship resistance. By J. Train (R. & W. Hawthorn, Leslie & Co Ltd). Read, 28 Nov 1924. Nels. Ibid, p 53-86.

041:0061 Fuel oil for marine internal combustion and steam [reciprocating] engines. By S.B. Freeman (Alfred Holt & Co Ltd). Read, 12 Dec 1924. Nels. Ibid, p 91-122.

041:0123 The theory of longitudinal bending of ships [destroyer HMS Wolf] By J.L. Taylor (affiliation not known). Read,

SECTION 1: CHRONOLOGICAL INDEX.

19 Dec 1924. Note. Ibid, p 123-144.

041:0145 The internal combustion locomotive. By J.W. Hobson (R. & W. Hawthorn, Leslie & Co Ltd.). Read, 13 Feb 1925, Note. Ibid, p 145-244.

041:0245 The limiting possibilities of steam (turbines) plants. By A.L. Mellisby; W. Kerr (Royal Technical Coll, Glasgow). Read, 29 Feb 1925, Note. Ibid, p 243-286.

041:0287 Seaworthiness [inc. insurance, regulations]. By J.B. Ives (Lloyd's Register of Shipping). Read, 19 Mar 1925, Note. Ibid, p 287-314.

041:0315 Conversion of s.s. Banting [steam reciprocating engine to diesel engine]. By L.J. Le Mesurier (affiliation not known). Read, 27 Mar 1925, Note. Ibid, p 315-346.

041:0347 Gas turbines. By M. König (affiliation not known). Read, 24 Apr 1925, Note. Ibid, p 347-421.

041:0432 Obituary: Thomas Galton Adams, c1873-1924. Severin Claudius Wilkin Hindesboll, c1857-1924. Frederick Arthur Bullivant, ?-1925. Ibid, p 432.

041:0433 Obituary: James Allan Campbell, c1878-1925. William Cowan, c1879-1925. Alfred Dickinson, c1878-1925. Durham Walker Fitzgerald, c1849-1925. Ibid, p 433, 433; 433, 433-434.

041:0434 Obituary: John Robert Cartwright, c1860-1924. Charles William Littleboy, c1856-1924. Ibid, p 434; 434-435.

041:0435 Obituary: H. G. C. Lobmeyer, c1849-1925. Donald Harris Morison, c1858-1925. William Stearns Vought, c1844-1925. Ibid, p 435, 435-436; 437.

042:0000 **NECIES Transactions, v 42, 1925-1926** [11], viii, 463 p v pl

042:0022 Presidential address (on shipbuilding; the depression). By E.H. Tansyoun-d'Arnyson (Sir W. G. Armstrong, Whitworth & Co Ltd.). Read, 16 Oct 1925, Note. Ibid, p 23-29.

042:0030 Shipyard pneumatic plant and pneumatic riveting. By F.D. Merrill (James Shipbuilding Co Ltd.). [Read, 6 Nov 1925, Note]. Ibid, p 30-50, 87-126, pl i opp p 402

042:0051 Measured mile trials and other ship propulsion data: part II. By G.S. Baker (National Physical Lab.). [Read, 26 Nov 1925, Note]. Ibid, p 51-70, 217-234

042:0071 Some aspects of the theory of ship waves and wave resistance. By T.H. Havelock (Armstrong Chd. Nels). [Read, 8 Dec 1925, Note]. Ibid, p 71-86, 225-248.

042:0111 Transmission of power: the present, the future [mechanical & electrical]. By G. Constantinides (affiliation not known). [Read, 4 Dec 1925, Note]. Ibid, p 111-174

042:0175 The star contra propeller. By W. Pollock (Padack consultants). [Read, 8 Jan 1926, Note]. Ibid, p 175-200, 278-286.

042:0201 Cast iron for diesel engines [inc. metallurgy & metalworking]. By A. Campion (affiliation not known). [Read, 22 Jan 1926, Note]. Ibid, p 201-243, 272-278, 298-300

042:0249 Electric propulsion of ships [inc. high-powered passenger ships]. By E. Berg, read by W.J. Belsey (General Electric Co, USA). [Read, 12 Feb 1926, Note]. Ibid, p 249-260, 249-260, 287-297, pl ii opp 403

042:0261 What is sea-speed? [inc. performance of colliers & trampships]. By R.J. Eyles (consultant). [Read, 12 Mar 1926, Note]. Ibid, p 261-300, 315-324.

042:0301 Hydro-mechanical marine gearing [inc. Vulcan oil clutch]. By J. Richardson (William Beardmore & Co Ltd, Dumfries). [Read, 9 Apr 1926, Note]. Ibid, p 301-324, 330-339, pl iii opp p 405.

042:0325 High-powered oil engines [for ships]. By W.S. Burn (Richardson, Worspath & Co Ltd.). [Read, 23 Apr 1926, Note]. Ibid, p 325-359, pl iv & opp p 403.

042:0388 Obituary: Kenneth Delmar Barrett, ? 1925. James Kennedy Chapman, c1861-1925. William James Gordon, c1861-1926. George William Greer, c1873-1926. Ibid, p 358; 358; 358-359; 369.

042:0389 Obituary: George William Joyce, ?-c1926. Donald Kemp, c1866-1926. Thomas Metcalfe, 1869-1925. Robert Park, c1851-1926. Alfred Pringle, c1868-1926. Ibid, p 363, 369-299, 390; 390; 390-391.

042:0391 Obituary: Richard Dee Purvis, c1871-1925. Robert Thomas Rutherford, c1873-1925. Ibid, p 391.

042:0392 Obituary: Harold George Scott Smith, c1898-1926. (L.S.Coll) Charles Reynolds Tomer, ?-1925. (Sir) Philip Watts, 1846-1926. George Duane Weir, 1870-1925. Ibid, p 392; 392, 392-394; 394-395.

043:0000 **NECIES Transactions, v 43, 1926-1927**, [11] ppviii, 512 p.

043:0017 How should an engineer be trained? [in university]. By T. Monsen (Armstrong Coll, Nels). [Read, 29 Oct 1926, Note]. Ibid, 17-62.

043:0062 The practical analysis of merchant ship trials and service performance. By R.V. Telfer (Morrer Shipping Ltd.). [Read, 25 Nov 1926, Note]. Ibid, 63-98 & pl i opp, 125-145.

043:0099 Workshop methods in heavy engineering [shipyards, engine works, cranes, machine tools, management]. By H.I. Brackebury (C.A. Parsons & Co Ltd.); W.J. Guthrie (Richardson, Worspath & Co Ltd.). [Read, 10 Dec 1926, Note]. Ibid, p 99-143

043:0144 The economy of tank testing of ship forms and research in ship propulsion. By G.S. Baker (William Houde National Expt Tank). [Read, 28 Jan 1927, Note]. Ibid, p 144-154

043:0155 Progress in economy of (steam) turbine machinery for land and sea [inc. river steamship King George V; trials; gears; fuel economy]. By C.A. Parsons; S.S. Cook (C.A. Parsons & Co Ltd.); R.L. Walker (Parsons Marine Steam Turbine Co). [Read, 14 Jan 1927, Note]. Ibid, p 155-174.

043:0155 Loading and unloading facilities on board ship and on land [inc. industrial relations in ports]. By R.L. Dodsworth (Parsons, Worspath & Co Ltd.). [Read, 25 Feb 1927, Note]. Ibid, p 175-204

043:0205 Psychology as an aid to efficiency and economy in industry [inc. shipbuilding management]. By J. Smith (Armstrong Co), Nels. [Read, 11 Feb 1927, Note]. Abridged text. Ibid, p 205-224

043:0225 Pure science: the service it has already rendered to engineering, with a review of modern developments, future applications [inc. radiography, fluid mechanics, materials]. By K.T. Glazebrook (National Physical Lab). [Read, 25 Mar 1927, Note]. Ibid, p 225-248.

043:0249 Economy in shipbuilding: some lines of progress [inc. economies; labour relations; ship design]. By J. McGeown (Furness Shipbuilding Co Ltd.). [Int Summer Mtg, 22 Jan 1927, Glasgow]. Ibid, p 249-268.

043:0263 The trade value of simplification and standardization in the details of ships and their machinery. By C. Le Mayre (British Engineering Standards Assoc.). [Int Summer Mtg, 21 Jan 1927, Glasgow]. Ibid, p 267-280.

043:0281 Joint Summer Meeting, [NECIES & IESS], 21 Jun 1927, Glasgow. Ibid, p 281-290 [2 pps listed in 043:0249-043:0259. See also following 2 pprs, same Index No.]

043:0281 Historical references to the progress in the use of high-pressure steam [in steam engines & machinery]. By J. Mollison (affiliation not known). [Int Summer Mtg, 21 Jan 1927, Glasgow]. Announcement. Ibid, p 281. [see prev 3 pprs, following 1 ppr, same Index No.]

043:0281 Motor yachts and motor yachting on the Clyde. By F.L. MacLaren (affiliation not known). [Int Summer Mtg, 22 Jan 1927, Glasgow]. Announcement. Ibid, p 282. [see prev 2 pprs, same Index No.]

043:0292 Obituary: Lincoln Fowler Brecken, c1903-1926. Edward Brooke Chapman, c1875-1927. Edward Arnold Clark, c1885-1927. Frederick Thompson Dickinson, c1864-1926. Ibid, p 282; 282, 295-303, 303-330.

SECTION I: CHRONOLOGICAL INDEX.

043:0301 Obituary: Walter Dix, c1857-1926. James Downs, c1866-1926. Edward Elder, c1869-1927. (Sir) James Hermann Rosenthal Kennal, 1864-1927. Ibid, p 301; 301; 302; 302

043:0302 Obituary: Thomas Graham Mellanby, c1891-1926. John Ruddlehead, c1849-1926. John Warburton, c1846-1927. Arthur S. Wimbie, c1865-1927. Ibid, p 302-303; 303; 303-304; 304.

044:0010 NECIES Transactions, v 44, 1927-1928. [12] pprs. vol. 402 p.

044:0015 Presidential address [on education & training; trade; coal power; oil power]. By M.S. Gibb ([Central Marine Engine Works, W. Hartlepool]) [Read, 28 Oct 1927, [Note] Ibid p 19-28.

044:0020 The safety of ships against capsizing. By J Beulan ([Det Norske Veritas]) [Read, 4 Nov 1927, Note]. Ibid, p 29-46; 177-184.

044:0027 Essential aspects of form and proportions as affecting merchant ship resistance and a new method of estimating F.H.P. By A.L. Ayre ([Bernstanz Shipbuilding Co Ltd]). [Read, 2 Dec 1927, Note]. Ibid, p 47-82; 185-209.

044:0030 The application of high pressures to the [triple expansion] reciprocating marine steam engine [inc. tug Barmen]. By S.G. Visker (affiliation not known) [Read, 17 Nov 1927, Note]. Ibid, p 83-120.

044:0121 Diesel engine drive for generators and other marine auxiliary machinery on board ship. By J. Cagerweoc ([Sulzer Brothers Ltd, Switzerland]) [Read, 13 Jan 1928, Note]. Ibid, p 121-142; 229-244.

044:0163 Ship vibration periods. By J. Leckwood Taylor (affiliation not known) [Read, 27 Jan 1928, Note]. Ibid, p 143-206.

044:0207 Some contributions to the theory and practice of [oil] lubrication [inc. boundary layers]. By J.E. Southmore (affiliation not known). [Read, 10 Feb 1928, Note]. Ibid, p 207-244.

044:0245 The Michell crankless engine [marine diesel engine]. By G.H.I. Saurin; K. Watson ([North Eastern Marine Engineering Co Ltd]). [Read, 24 Feb 1928, Note]. Ibid, p 245-284.

044:0285 The measurement of power [on ship trials with oil engines]. By J.S. Brown (affiliation not known). [Read, 9 Mar 1928, Note]. Ibid, p 285-334.

044:0325 The relation between the drawing office and the shipyard and engine works. Introduced by C.W. Carrs ([Cairns Note Ltd]). Informal Mtg, 9 Dec 1927, [Note]. Abridged version. Ibid, p 335-340.

044:0341 The steering of ships [inc. rudders]. Introduced by H.C. Williams (Admiralty?). Informal Mtg, 23 Mar 1928, [Note]. Ibid, p 341-356.

044:0357 Wireless direction finding for marine purposes. By S.H. Long (affiliation not known). [Read, 25 Apr 1928, Note]. Ibid, p 357-378.

044:0387 Obituary: Thomas Benjamin Grimes, c1861-1928. (Earl) Halg of Bemersyde, c1861-1928. James Hamilton, ?-1927. Alfred Harrison, c1856-1928. Ibid, p 387-387-388; 388-388-389.

044:0389 Obituary: William Peter Henry, ?-1928. Robert Knox, ?-1928. Robert A. Middleton, c1856-1927. Robert Muir, ?-1928. Ibid, p 389; 389; 390; 390.

044:0390 Obituary: John Watt Sandeman, 1842-1927. Charles Henderson Smith, ?-1928. (Sir) John Isaac Thornycroft, 1813-1928. J.H. Winfield, c1868-1927. Ibid, p 390; 391; 391-393-394.

045:0005 NECIES Transactions, v 45, 1928-1929. [15] pprs. vii, 456 p.

045:0017 Presidential address [on triple expansion steam reciprocating engines]. By M.S. Gibb ([Central Marine Engine

Works, W. Hartlepool]). [Read, 19 Oct 1928, Note]. Ibid, p 17-24.

045:0025 From theoretical hydrodynamics to practical ship design. By E.G. Barrillon (Grenelle Tank Paris, France). [Read, 2 Nov 1928, Note]. Ibid, p 25-54; 111-114.

045:0155 The application of high pressures to the reciprocating marine steam engine. Further experience with s.s. Barmen [tug]. By S.G. Visker (affiliation not known) [Submitted, cOct 1928]. Ibid, p 55-57.

045:0208 Losses of efficiency in steamship performance [inc. steam reciprocating engines; operations]. By J. Denholm-Young (consultant). [Read, 13 Nov 1928, Note]. Ibid, p 58-110.

045:0115 Frictional resistance and ship resistance similarity [inc. model tests]. By F.V. Teller ([Munton Shipping Ltd]). [Read, 20 Nov 1928, Note]. Ibid, p 115-184.

045:0185 Combustion and its difficulties in marine oil engines. By K.C. Keller ([William Doxford & Sons Ltd]) [Read, 7 Dec 1928, Note]. Ibid, p 185-210.

045:0211 The rational utilization of coal: [Pt 1]. Coal as used in its raw state. [Pt 2]. Fuels obtained by the treatment of coal [pulverised coal; ship fuel; vs oil]. By W.L. Drummond; W.T.K. Braunsaltz ([Ashington Coal Co Ltd]). [Read, 11 Jan 1929, Note]. Ibid, p 211-242 & pt 1 opp p 242

045:0242 The relations between the properties of engineering materials and their ultimate structures. By G.W. Todd (affiliation not known) [Read, 22 Feb 1929, Note]. Ibid, p 242-260.

045:0261 Mechanical and transmission losses in marine engines, shafting and propellers. By J.H. Gibson (affiliation not known). [Read, 15 Mar 1929, Note]. Ibid, p 261-292.

045:0299 Could the methods of conducting measured mile trials be improved? Discussion introduced by J. Neill ([North Eastern Marine Engineering Co Ltd]). Informal mtg, 17 Dec 1928, [Note]. Ibid, p 293-298.

045:0295 Do the rules of classification societies tend to improve shipbuilding and engineering in this country? Discussion introduced by J. Isherwood (consultant). Informal mtg, 1 Mar 1929, [Note]. Ibid, p 299-304.

045:0305 Joint Summer Meeting. (NECIES & IESS), 2-4 Jul 1929, Note. Programme & proceedings. Ibid, p 305-324. [4 parts listed in 045:0325-045:0373]

045:0325 The story of safety at sea [inc. freeboard, subdivision, life-saving, regulations]. By W.S. Ansell ([Armstrong Coll. Note]). Int Summer Mtg, 2 Jul 1929, Note. Ibid, p 325-346.

045:0347 Development in the uses of electricity [inc. ships, HVAC, railways, motive power, agriculture]. By R.P. Sloan ([Newcastle-upon-Tyne Electric Supply Co Ltd]). Int Summer Mtg, 3 Jul 1929, Note. Ibid, p 347-372.

045:0377 The applications of monel metal in engineering and shipbuilding. By J. Ireland ([Cameron Brothers]). Int Summer Mtg, 2 Jul 1929, Note. Ibid, p 373-399.

045:0400 Some notes on damage to ships [inc. fatigue, repair, reliability]. By L.L. Adam ([Smith's Dock Ltd]) Int Summer Mtg, 5 Jul 1929, Note. Ibid, p 401-424.

045:0350 Obituary: William Turner Disset, 1877-1928. John Arthur Carswell Davies, c1894-1929. John Rochester Dixon, c1867-1929. Lord Lambton, c1855-1928. Earl Dartmouth, Ibid, p 434; 434; 434-435; 435.

045:0456 Obituary: William Henry Dugdale, 1859-1928. Ferdinand Foch, c1852-1929. Henry Foster, 1857-1928. Donald Burns Gebbie, c1883-1928. Ibid, p 436-438; 438-439; 439-440; 440-441.

045:0461 Obituary: Thomas Harrison, c1856-1926. Charles MacDonald, c1854-c1927. Wallace Millar, ?-1928. William Millar, c1849-1929. Henry Thornton Newbiggin, c1864-1928. Ibid, p 441; 441; 441-442; 442; 442-443.

045:0449 Obituary: James Edmondson Ruise, c1886-1928. James Richardson, c1887-1929. Stanley Mitealle Todd, c1886-1929. Robert Traill, c1869-1928. Ibid, p 443; 444-445; 445; 445-446.

SECTION 1- CHRONOLOGICAL INDEX.

045:0416 Obituary: John Arthur Warburton, c1871-1929. William Wilson, c1904-1929. *Ibid.*, p 446.

046:0303 *NECIES Transactions*, v 46, 1929-1930, [16] pp., viii, 478 p.

046:0319 Presidential address (on shiprepair; shipbuilding). By T.E. South (Sulzer's Deck Ltd) *Read*, 25 Oct 1929, *Nele*, *Ibid.*, p 19-28.

046:0329 Development and performance of the Richardson-Westgarth oil engine (inc. mv *Iranian*). By W.S. Buzar (Richardson, Westgarth & Co Ltd). *Read*, 1 Nov 1929, *Nele*, *Ibid.*, p 29-82.

046:0383 Ship wake and the frictional belt (inc. model tests). By G.S. Baker (William Froude Nations' Expt Tank, Teddington). *Read*, 28 Nov 1929, *Nele*, *Ibid.*, p 83-106 & p. 111-9 opp.

046:0107 The behaviour of a cargo vessel during a winter North Atlantic voyage. By E.C. Laws (Lloyd's Register of Shipping). *Read*, 15 Nov 1929, *Nele*, *Ibid.*, p 107-146.

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SECTION I: CHRONOLOGICAL INDEX.

438; 439; 439-440; 440.

047-0440 Obituary: Henry Septimus Harrison, c1863-1930. Stanley Howard Harrison, c1886-1931. Alexander A. Johannsen, c1859-1931. Thomas Allan Johnson, c1866-1930. *Ibid.*, p 440; 441; 441; 441-442.

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047-043 Obituary: Stanley Faber Prest, c1859-1931. (S/Lt) George Renwick, c1850-1931. Albert Robinson, c1874-1931. Arthur Scholefield, c1853-1930. *Ibid.*, p 443-444; 444; 443; 443-445.

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SECTION I. CHRONOLOGICAL INDEX.

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049-D179 Obituary: Herbert Harringer, c1856-1932. Adolph Anthony Christian Blotop, c1888-1932. Robert Bosman, c1868-1932. Joseph Louis Carnegie, c1866-1932. Ibid, p D179-D180, D180, D180.

049-D180 Obituary: John Denholm-Young, 1864-1932. Reginald John Eyles, c1873-1932. Alfred Ernest Geary, c1870-1932. Ernest Walter Harvey, c1882-1932. Ibid, p D180-D181; D181-D182; D182; D183.

049-D183 Obituary: Walter Seymour Hale, c1861-1932. Joseph James Johnston, c1902-1932. Thomas Trohear Kennagh, c1873-1931. (Sir) James Marr, c1854-1932. Ibid, p D183; D183-D184, D184, D184-D185.

049-D185 Obituary: Robert McGregor, c1864-1932. Jack Payne, c1872-1922. Harry Lorimer Riseley, c1870-1923. James Robinson, 1862-1932. Harry Arthur Ruck-Kuene, 1866-1932. Ibid, p D185; D185-D186; D186-D187; D187; D187-D188.

049-D188 Obituary: Errol Hay Thompson, c1890-1932. William Nicholas Trevann, c1892-1932. Rudolf Adrian Van Sun dck, c1856-1932. Ibid, p D188; D188; D188-D190.

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050-D172 Obituary: James Andrews, c1864-1934. William Tinperley Butler, c1867-1934. Alfred Quentin Carnegie, c1876-1934. Hewlson Hall, c1874-1934. Ibid, p D172-D173, D173, D173-D174; D174.

050-D174 Obituary: Andrew Hamilton, c1862-1934. Christopher Wilhelm Hoik, c1859-1934. Alexander George Hudson, c1872-1934. Matthew Crookson James, c1859-1934. Ibid, p D174-D175, D175-D176; D176, D176-D178 & photo; D176.

050-D178 Obituary: John MacHaffie, c1859-1931. (Dr) James Taylor Milton, c1850-1933. Hyton Ralph Murray-Phillips, c1902-1934. David Nyles, c1850-1934. Ibid, p D178; D178-D179, D180; D180-D181.

050-D181 Obituary: (Lady) (Katharine) Parsons, 9-1933. Thomas Pinkney, c1848-1933. John Thompson Ramage, c1865-1933. John Retford, c1887-1933. Robert Roper, c1863-1933. Ibid, p D181-D183 & photo; also p D181; D183; D184; D184, D185.

050-D185 Obituary: Charles Edmund Straker, c1853-1934. George Turfhuil, c1868-1933. Tom Westgarth, 1853-1934. Ibid, D185; D185-D186, D186-D188 & photo; D186.

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SECTION 1: CHRONOLOGICAL INDEX.

051:0229 Fuel consumption and maintenance costs of steam- and diesel-engined vessels. By L.L. La Mesurier; H.S. Humphreys (Angle Persian Oil Co Ltd). Read, 8 Feb 1935. Nels. Ibid. p 227-258, D67-D82.

051:0259 Ship vibrations: simple methods of estimating critical frequencies. By L.C. Burrell (Swan, Hunter, & Wigham Richardson Co Ltd). Read, 20 Feb 1935. Nels. Ibid. p 259-276, D87-D98.

051:0277 Flying boats and their possible developments. By A. Gouge (affiliation not known). Read, 8 Mar 1935. Nels. Ibid. p 277-302, D83-D86.

051:0303 Wake. By G.S. Baker (William Froude Lab). Read, 23 Mar 1935. Nels. Ibid. p 303-320, D137-D140.

051:0323 Ocean transportation of petroleum in bulk. By P.F. Eard (affiliation not known). Read, 5 Apr 1935. Nels. Ibid. p 323-346, D147-D172.

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051:0192 Obituary: William Brown, c1878-1934. Frederick Charles Coleman, c1879-1935. Henry Wallace Curchin, c1878-1934. James Dixon, c1865-1934. Ibid. p D192; D193; D192-D193; D193.

051:0193 Obituary: Charles David Deaford, c1857-1935. Reginald Wilson MacNay, c1878-1934. William McLeilan, c1874-1934. Norman Frederick Ramsay, c1863-1935. Ibid. p D193; D194; D194; D194.

051:0195 Obituary: Ronald James Dawson Ritchie, c1890-1935. William Sisson, c1854-1935. Francis Henry Verrill, c1875-1935. Ibid. p D195.

051:0196 Obituary: Joseph Stanhope Watson, c1870-1934. John Yeoman, c1872-1934. Ibid. p D195.

052:0000 NECTES Transactions, v 52, 1935-1936, [17] pp. v. 350, D152, 32 p.

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052:0024 By air and sea to the Antarctic whaling grounds (on crew transport by flying boat). By C.F. Christensen (affiliation not known). [Read, 18 Oct 1935. Nels.]. Summary of a talk. Ibid. p 24.

052:0025 The development of the heavy-oil engine for ship propulsion. By C.J. Hawkes (Armstrong Coll. Univ of Durham, Nels.) Andrew Laing Lect. n 4, 11 Nov 1935. Nels. Ibid. p 25-50.

052:0051 Shipbuilding by welding (on structural strength). By N.M. Hunter; H.W. Townsend (Swan, Hunter, & Wigham Richardson Co Ltd). [Read, 15 Nov 1935. Nels.]. Ibid. p 51-64, D1 D8.

052:0065 The theory of the bulbous bow and its practical application (on hull form, resistance & propulsion). By W.C.S. Wigley (William Froude Lab). [Read, 29 Nov 1935. Nels.]. Ibid. p 65-83, D9-D18.

052:0089 Notes on the development of tugboat machinery during the past forty-six years (inc. paddle tug Express). By G. Baird (Baird Bros). [Read, 15 Dec 1935. Nels.]. Ibid. p 89-102, D19-D27.

052:0103 The relation of laboratory research to engine design. By F. Heutmann (Glockenburger Maschinenbau A.G., Germany). [Read, 10 Jan 1936. Nels.]. Ibid. p 103-127, D27-D26.

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052:0143 Friction of piston rings (in internal combustion engines). By C.J. Hawkes; G.F. Hardy (Armstrong Coll. Univ of Durham, Nels.). [Read, 7 Feb 1936. Nels.]. Ibid. p 143-176, D49-D58.

052:0159 The wake and thrust deduction of single-crew ships. By E.V. Telfer (consultant). [Read, 27 Feb 1936. Nels.]. Ibid. p 179-192, D27-D116.

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052:D137 Obituary: (Baron Kirkley of Kirkley) William Joseph Noble, 1813-1935. (Admiral Fleet, Earl) David Beatty, 1871-1936. (Dr) Frank Byron Jevons, c1859-1936. Ibid. p D137; D138 & photo. inc p D137; D138; D139.

052:D139 Obituary: (Admiral Fleet, Earl) John R. Jellicoe, 1859-1935. John Joseph Atkinson, c1850-1935. (Sir) Archibald Burns, 1866-1936. John James Rees Eynon, c1876-1936. Ibid. p D139; D140; D140; D141; D141.

052:D141 Obituary: (Sir) Albert George Haddock, 1861-1936. (Dr) Motoren Harunishi, c1870-1934. George Albert Hunter, 2-1936. Ibid. p D141-D142, D142; D143; D143; D144.

052:D144 Obituary: Hylton Phillipson, c1866-1935. James Guilliam Pringle, 2-1935. Martin Francis Steady, c1881-1935. Ibid. p D144.

052:D152 Index to papers published in the Transactions, vol 50 to vol. LII (1884-1936). Ibid. 32 p. opp. p D152.

052:0000 NECTES Transactions, v 53, 1936-1937, [16] pp. v. 280, D154, 32 p.

052:0012 Presidential address (on education & training; research). By C.J. Hawkes (Armstrong Coll. Univ of Durham, Nels.) Read, 23 Oct 1936. Nels. Ibid. p 19-30.

SECTION 3: CHRONOLOGICAL INDEX.

053:0031 Sir Charles Parsons and steam [on steam turbines & generators]. By F.E. Smith (affiliation not known). Parsons Memorial Lect. n 1, 6 Nov 1936, Nels. Ibid. p 21-52.

053:0053 Parsons Exhibition at Municipal Museum of Science and Industry, Newcastle upon Tyne [opened 6 Nov 1936]. By Lord Rayleigh [R.J. Straut]. Read, 6 Nov 1936, Nels. Ibid. p 53-54.

053:0055 Ship propulsion under adverse weather conditions. By J.L. Kent (William Froude Lab). Read, 20 Nov 1936. Nels. Ibid. p 55-64 & pl i app. D1-D20.

053:0065 Flow of boiling water through orifices and pipes [in steam machinery]. By W.T. Bottomley (Menz & McLellan Ltd.). Read, 4 Dec 1936, Nels. Ibid. p 65-102, D21-D44.

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053:0137 Some recorded [boiler] water consumptions and powers of merchant vessels. By J.G. Potts (affiliation not known). Read, 15 Jan 1937, Nels. Ibid. p 137-169, D63-D72.

053:0161 Land and marine steam generators. By A.L. McJaniny (Royal Tech Coll. Glasgow). Andrew Lang Lect. n 5, 29 Jan 1937, Nels. Ibid. p 161-189.

053:0189 Singing propellers. By H. Luner (North Eastern Marine Engineering Co Ltd.). Read, 12 Feb 1937, Nels. Ibid. p 185-222, D73-D120.

053:0223 Vibration in [internal combustion] engine structures. By L.J. Le Mesurier, R. Sturtevant (Anglo Iranian Oil Co Ltd.). Read, 26 Feb 1937, Nels. Ibid. p 223-246, D121-D150.

053:0247 Business control and management. By H.A. Sisson (affiliation not known). Read, 12 Mar 1937, Nels. Ibid. p 247-254, D131-D142.

053:0255 The determination of the residual strains and stresses, in arc-welded plates. By R.E.L. Mears (affiliation not known). Read, 16 Apr 1937, Nels. Ibid. p 255-281 & pl iv app. D143-D164.

053:0173 Obituary: (Sir) William John Berry, c1865-1937. Oscar Brodie, c1877-1936. Daniel Cameron, c1874-1936. George Clark, c1866-1937. Harry Augustus Coates, 1876-1937. Ibid. p D173; D173; D173-D174; D174-D174.

053:0174 Obituary: (Sir) William Henry Hadow, 1860-1937. John Oswald Hicks, c1910-1937. (Sir) George Burton Hunter, 1845-1937, Ibid. p D174-D175, D175-D176, D175-D178 & photo ante D176.

053:0179 Obituary: William Thomas Hudson, c1891-1936. (Sir) Arthur William Johns, c1874-1937. Donald MacNicol, c1883-1937. Ibid. p D179; D179; D179-D180.

053:0180 Obituary: Thomas Beattie McIlhde, c1884-1937. Matthew McNaughton Mein, c1854-1937. Walter J. Milne, ?-1937. Ibid. p D180.

053:0181 Obituary: Matthew Rose, c1886-1937. John Edward Smith, c1880-1936. John Turnbull, c1873-1936. Arie Van Donkelaar, 1899-1937. Ibid. p D181; D181, D181; D181-D182.

053:0182 Obituary: George Henry Wake, c1889-1937. Robert John Walker, 1870-1936. Robert Lunan Weighton, 1851-1937. Edmund Wilson, c1873-1936. Ibid. p D182; D182-D184 & photo ante. D184-D185; D186.

054:0067 Boiler maintenance and repairs in cargo steamers. By E.P. Wilson (consultant). [Read, 19 Nov 1937, Nels. Ibid. p 67-82, D1-D24.

054:0083 Modern motor coasters of restricted draught [and their equipment]. By C.H.D. Rogers (Beals, Gordon, & Rogers Co Ltd.). [Read, 3 Dec 1937, Nels. Ibid. p 83-98, D49-D60.

054:0099 High speed motor craft [inc. Bluebird, Miss America X]. By D. Nicholson (affiliation not known). [Read, 17 Dec 1937, Nels. Ibid. p 99-118 & pl i-v app. D25-D32.

054:0119 Ship stresses in rough water in the light of investigations made upon the motorship San Francisco. By G. Schmidt (Technische Hochschule Berlin, Germany). [Read, 17 Jan 1938, Nels. Ibid. p 119-136, D61-D78.

054:0137 Diesel varia. By C.J. Lugt (Workshop). [Read, 28 Jan 1938, Nels. Ibid. p 137-132, D33-D48.

054:0153 Shipbuilding practice abroad. By J. Montgenere (Lloyd's Register of Shipping). [Read, 11 Feb 1938, Nels. Ibid. p 153-176 & pl iii app p 172, D79-D98.

054:0177 Special steels and their application to engineering and shipbuilding. By T. Swenden (United Steel Co Ltd). [Read, 25 Feb 1938, Nels. Ibid. p 177-226, D97-D113.

054:0227 Sea-conditions and ship design. By K. MacDonald (affiliation not known), E.V. Telfer (consultant). [Read, 18 Mar 1938, Nels. Ibid. p 227-236, D111-D122.

054:0239 Symposium on propellers; 31 Mar-1 Apr 1938; Nels. (Proceedings). [Organised by NECIES]. Ibid. p 237-414, D123-D222. 10 pgs in 054:0239-381. [see next pgs, same Index No].

054:0239 The qualities of a propeller above and behind a ship. By G.S. Baker (William Froude Lab). Symp propellers, 31 Mar 1938, Nels. Ibid. p 239-253, D135-D146. [see also prev pgs, same Index No].

054:0251 Measurement of wake. By J. Hom (Technische Hochschule, Berlin, Germany). Symp propellers, 31 Mar 1938, Nels. Ibid. p 251-288 & pl iv app. D147-D154.

054:0259 Aerofoil sections in screw propellers. By J.F. Allan (William Denny Bros Ltd.). Symp propellers, 31 Mar 1938, Nels. Ibid. p 289-330, D160-D169.

054:0301 Torsion and torsional oscillation of [propeller] blades. By W.J. Dunlop (Univ Coll, Hull). Symp propellers, 31 Mar 1938, Nels. Ibid. p 301-310, D171-D176.

054:0311 Effect of shaft brackets on propeller performance. By R.W.L. Gawn (Admiralty Experiment Works, Harbar). Symp propellers, 31 Mar 1938, Nels. Ibid. p 311-320, D177-D184.

054:0321 Open water test series with modern propeller forms [inc. model tests, trials]. By L. Troost (Expansier Tank, Wageningen, Netherlands). Symp propellers, 1 Apr 1938, Nels. Ibid. p 321-328 & pl v-xi app. D185-D192.

054:0327 Propeller performance in rough water. By J.L. Kent (William Froude Lab). Symp propellers, 1 Apr 1938, Nels. Ibid. p 329-348, D193-D200.

054:0349 Further model tests on immersion of propellers, effect of wake and viscosity. By G. Kempl (Hamburg Tank, Germany). Symp propellers, 1 Apr 1938, Nels. Ibid. p 349-364, D201-D210.

054:0353 Propellers for tugs and crawlers [inc. effects of towing]. By v.W. Barsen (Scott's Shipbuilding & Engineering Co Ltd). Symp propellers, 1 Apr 1938, Nels. Ibid. p 365-378 & pl xii app. D211-D216.

054:0381 Model experiments on the optimum diameter of the propellers of a single-screw ship [inc. hull fouling]. By M. Yamagata (Toshinbo Ship Exam Tank, Tsuyo, Japan). Symp propellers, 1 Apr 1938, Nels. Ibid. p 381-414, D217-D222.

054:0415 Address [on engineering; shipbuilding; secrecy; trade, education & training; SOLAS; international cooperation]. By G.E. Rock (US Navy re.) Award of Hon Fellowship, 28 Jun 1938, Nels. Ibid. p 415-424.

054:0232 Obituary: George Baird, c1873-1938. George Buchanan, c1872-1937. Henry William Clothier, 1872-1938. William Moynux Conan, c1880-1938. Ibid. p D222; D222; D222-D223; D233.

SECTION 1: CHRONOLOGICAL INDEX.

054.0233 Obituary: Albert Ernest Doxford, 1867-1937. James William Ellis, c1855-1938. (Sir) Joseph W. Isherwood, 1870-1937. Hugh Warren Lee, c1870-1938. Ibid, p D233 D235 & photo ante D233, D235; D235-D236; D236.

054.0237 Obituary: Francis Robert Nolan, (c1865)-1937. Hugh Teasdale Roberts, 1882-1937. Leonard Rapner, 1874-1937. Ibid, p D237; D237; D257-D258.

054.0238 Obituary: (Baron) Runciman of Shoreston, 1847-1937. Frans Snauders, c1871-1937. William Bird Tute, c1883-1938. Richard Wildridge, c1874-1938. Ibid, p D238; D238-D239. D239. D239.

055.000 N.E.C.I.E.S. Transactions, v 55, 1938-1939. [13] ppis, ix, 320, D184 p.

055.001 Presidential address [on shipowning; shipbuilding; trade; River Tyne]. By T.R. Cairns ([Cairn Line]). [Read, 14 Oct 1938, Nels]. Ibid, p 18-26.

055.0019 A scheme for state assistance of shipbuilding. By R. Boucman ([Furness Shipbuilding Co Ltd]; Chairman's address, (cOct 1938), Teasdale, Ibid, p 27-32.

055.0015 The molecular basis of the strength of materials (inc. radiography). By W. Bragg (Royal Society). Andrew Lang Lect, n 7. [8 Nov 1938, Nels]. Ibid, p 35-55.

055.0056 Some practical experiences in general engineering (inc. safety, coal, pumps, education & training). By T.B. Morley (affiliation not known). [Read, 18 Nov 1938, Nels]. Ibid, p 55-60.

055.0061 Forced-circulation boilers and their application for marine purposes. By R.L. Treviñick (affiliation not known). [Read, 2 Dec 1938, Nels]. Ibid, p 61-80, D1-D14.

055.0081 Electric propulsion of ships (history; diesel electric; inc. Vaudol, Wuppertal). By L.R. Fenne (affiliation not known). [Read, 16 Dec 1938, Nels]. Ibid, p 81-110, D15-D27.

055.0111 Inter-crystalline cracking in boiler plates. By C.H. Desch (National Physical Lab). [Read, 20 Jan 1939, Nels]. Ibid, p 111-126, D28-D40.

055.0121 Air flow. By F.H. Todd (William Fraude Lab). Summary of Am. [6 Jan 1939, Nels]. Ibid, p 121-125.

055.0122 Vibration problems from the marine engineering point of view. By T.W.F. Brown ([R & W Hawthorn, Leslie & Co Ltd]). [Read, 3 Feb 1939, Nels]. Ibid, p 127-176, D41-D193.

055.0177 Special trials of the Beaton Grange (large ship). The effect of steering on propulsion. By A. Emerson (William Fraude Lab). [Read, 16 Feb 1939, Nels]. Ibid, p 177-200 & photo opp, D171-D178.

055.0203 Strength of marine engine shafting (esp. failure of oil engine crankshafts). By S.F. Doney ([Lloyd's Register of Shipping]). [Read, 24 Mar 1939, Nels]. Ibid, p 203-294 inc photo opp p 282, D194-D198.

055.0245 Fundamental reflections on the application of welding in mercantile shipbuilding. By W. Scholz (affiliation not known, Hamburg). [Read, 10 Mar 1939, Nels]. Ibid, p 295-318 inc photo opp, D151-D158.

055.0219 Ideal design of an all-welded ship. By J.P. Wadling ([Swan, Hunter, & Wiggin Richards Co Ltd]). [Read, 21 Apr 1939, Nels]. Ibid, p 319-336 inc photo opp p 326, D139-D150.

055.0197 Obituary: Edward Box, c1861-1938. George Paterson Cumming, c1872-1939. Edwin William Frederick Fraser-Smith, c1880-1939. Thomas Grime, c1899-1939. Ibid, p D167, D167; D167; D159 & photo ante; D169.

055.0150 Obituary: (Sir) Alexander McAusland Kennedy, 1860-1939. Richard Stephenson Middleton, c1869-1939. (Eng V-Adm), Sir Henry John Orant, 1848-1939. Ibid, p D169; D170; D171.

055.0172 Obituary: Stanley McKenzik Ritsan, c1869-1938. John Stephenson, c1903-1938. Maurice Edward Taylor, c1905-1938. Thomas Taylor, c1868-1939. Ibid, p D172; D172; D172. D172-D173.

055.0172 Obituary: Charles P. Wetherbee, c1871-1938. Harris Gregory Williams, c1870-1939. Ibid, p D173-D174, D173-D176 & photo ante D175.

056.0000 N.E.C.I.E.S. Transactions, v 56, 1939-1940. [15] ppis, viii, 302, D166 p.

056.0020 Presidential address [on shipowning; war; education & training]. By T.R. Cairns ([Cairn Line]). [Read, 13 Oct 1939, Nels]. Ibid, p 20-24.

056.0025 Rolling of ships under way: the decrement of roll due to hull and bilge keels. By G.S. Baker (William Fraude Lab). [Read, 27 Oct 1939, Nels]. Ibid, p 25-42 & fig 3 opp, D1-D14.

056.0045 Electric welding as an integral part of structural design (Mauretania passenger ship). By B.P. Haight (affiliation not known). Andrew Lang Lect, n 8. [10 Nov 1939, Nels]. Ibid, p 43-82.

056.0083 Aeroautics and ship design. Application of aeronautical research to naval architecture (inc. propellers). By J. Lockwood Taylor ([later with Univ of Trondheim, Norway]). [Read, 24 Nov 1939, Nels]. Ibid, p 83-90, D15-D24.

056.0091 Open-water test series with modern propeller forms. Part 2: three-bladed propellers. By L. Toust (Wageningen Expt Tank, Netherlands). [Read, 15 Dec 1939, Nels]. Ibid, p 91-96 & fig 2-6 opp, D41-D48.

056.0097 Some notes on high temperature marine superheaters. By H. Fueter ([Nara Eastern Marine Engineering Co Ltd]). [Read, 15 Dec 1939, Nels]. Ibid, p 97-104, D25-D40.

056.0105 From the shipowner's point of view (inc. merchant ship design, building, operation). By T.R. Cairns ([Cairn Line]). Address to Sardinia Soc, 2 Dec 1939. [Nels]. Ibid, p 105-114.

056.0115 Propulsion scale effect (inc. propeller model tests). By W.F.A. van Lammere (Experiment Tank Wageningen, Netherlands). [Read, 26 Jan 1940, Nels]. Ibid, p 115-152 & fig 11-12 opp, D49-D56 & fig 14 opp.

056.0153 Creep at high temperatures (metallurgy of steels). By H.J. Tapscott (affiliation not known). [Read, 22 Feb 1940, Nels]. Ibid, p 153-170, D57-D97.

056.0171 The application of the two-stroke heavy-oil engine to aircraft propulsion. By W.S. Bam ([Richardsons, Wengard & Co Ltd, Liverpool]). [Read, 9 Feb 1940, Nels]. Ibid, p 171-226, D91-D117.

056.0221 Air conditioning in ships' passenger and cargo spaces. By W.E. Glass (affiliation not known). [Read, 29 Mar 1940, Nels]. Ibid, p 221-254, D113-D127.

056.0225 The mean pitch determination of variable pitch propellers. By E.V. Telfer (consultant). [Read, 8 Mar 1940, Nels]. Ibid, p 225-272, D128-D140.

056.0272 The application of the photo-electric cell in industry. By J.H. Krause (affiliation not known). [Read, 4 Mar 1940, Nels]. Ibid, p 273-280.

056.0281 Decorative (wooden) veneers. By L.C.W. Jenkins (affiliation not known). [Read, 15 Apr 1940, Nels]. Ibid, p 281-292.

056.0293 Modern joinery and woodworking tools (inc. plywood). By A.C. Meredith (affiliation not known). [Read, 19 Apr 1940, Nels]. Ibid, p 293-302 & fig 1-8 opp.

056.0192 Obituary: Francis Herbert Alexander, 1865-1939. Jelford John Annable, c1877-1939. John Craig, 1874-1939. (Major) William Henry Dick, c1881-1940. Ibid, p D149-D150; D150; D150-D151; D151.

056.0151 Obituary: (Eng V-Adm), Sir Robert Bland Dixon, 1867-1939. William James Guthrie, c1877-1940. Robert Howe, c1869-1940. Summers Hunter, 1856-1940. Ibid, p D151; D151-D152; D152; D152-D154 & photo opp; p D152.

056.0155 Obituary: Maurice Keel Inghamby, c1889-1939. Norris Henry Jobb, c1874-1940. John Moore, c1882-1939. Joseph Ostens, c1874-1940. Alfred John Raine, c1884-1940. Ibid, p D154-D155, D155, D155, D155, D155-D156.

SECTION 1: CHRONOLOGICAL INDEX.

056:D156 Obituary: (Sir) James Halder Readhead, 1879-1940. **MARY ROBSON**, c1878-1940. Samuel Willey Wakeham, c1877-1940. William Albert White, c1878-1940. *Ibid.* p D156; D157; D157-D158

057:0500 **NECIES Transactions**, v 57, 1940-1941. [13] pps. viii, 282, D160 p.

057:0507 Presidential address (on engineering; materials; aluminium; welding; management) By W.A. Woodson (Clarke Chapman & Co Ltd.). [Read, 28 Oct 1940, Note]. *Ibid.* p 17-26

057:0527 Foundations of the electrical and mechanical transmission of energy. By W.M. Thornton (King's Coll, Nelsl). Andrew Laing Lect. n 9, [3 Nov 1940, Note]. *Ibid.* p 27-42.

057:0543 Vibration of propeller blades. By G.S. Baker (William Froude Lab.). [Read, 15 Nov 1940, Note]. *Ibid.* p 43-68, D1-D17.

057:0567 Mechanical gearing for large power transmission. By L.M. Douglas (affiliation not known) [Read, 29 Nov 1940, Note]. *Ibid.* p 67-68, D17-D28.

057:0595 The engineering of highly powered ships (inc. steam turbines for Queen Elizabeth & Queen Mary passenger ships). By S.J. Piggot (John Brown L., Clydebank) & Sir Charles Parsons Memorial Lect. n 5, [17 Dec 1940, Note]. *Ibid.* p 95-115 & pl i-v & fig 10 opp.

057:0115 Optical instruments; particularly large astronomical telescopes (Radcliffe Observatory, S. Africa). By G.C. Manville (Sir Howard Grubb, Parsons & Co Ltd.). [Read, 17 Jan 1941, Note]. *Ibid.* p 115-132.

057:0133 The effect of some external factors on the performance of single-screw ships (inc. weather, hull forms, sterns). By A. Kari (consultant). [Read, 31 Jan 1941, Note]. *Ibid.* p 135-163, D29-D39.

057:0161 Ships' cargo-handling gear (inc. cranes, derricks, winches). By L.T. Morton (affiliation not known). [Read, 14 Feb 1941, Note]. *Ibid.* p 161-174, D41-D49.

057:0175 Some analogies (mechanical & electrical engineering). By J.C. Prescott (King's Coll, Nelsl. Student Soc., 4 Dec 1940, Note). *Ibid.* p 175-178.

057:0179 Preliminary calculations in ship design. By E.E. Buziani (Swan Hunter, & Wigham Richardson & Co Ltd.). [Read, 28 Feb 1940, Note]. *Ibid.* p 179-206, D49-D62.

057:0207 Some general observations on vibration (of marine engines). By J. Caderwood (Salzer Bros Ltd, Switzerland). [Read, 14 Mar 1940, Note]. *Ibid.* p 207-220, D63-D62.

057:0221 The economics of the design of condensing plant and cooling-water systems as applicable to power stations. By W.T. Hatanley (Merz & McLellan Ltd.). [Read, 28 Mar 1940, Note]. *Ibid.* p 221-254, D63-D119.

057:0255 Plastic theory: its application to design. By J.F. Baker; J.W. Rodewick (affiliations not known) [Read, 23 Apr 1940, Note]. *Ibid.* p 255-282, D119-D172.

057:0165 Obituary: (R-Adml) David W. Taylor, 1864-1941. Robert Minford Balle, c1907-46. Henry Bayles, c1878-1941. Nicholas Blanchford, c1870-1941. James Brown, c1862-41. *Ibid.* p D140-D141, D142, D142; D142, D142-D143.

057:0143 Obituary: (Lt-Col) Robert Brown, c1903-1941. Rowland Dixon, c1918-1940. William Gordon Dobson, c1877-1941. James Fenwick, 1864-1940. Kenneth Fraser, 1874-1941. *Ibid.* p D143; D144; D144-D145; D145, D145-D146.

057:0146 Obituary: William George Green, c1860-1941. David West Hurrell, c1914-1940. Robert Stanley Johnson, c1888-1940. Geoffrey Stanley Johnson, c1888-1940. *Ibid.* p D146; D146; D147; D147.

057:0147 Obituary: Geoffrey William King, c1902-1941. John Arthur McCulloch, c1882-1941. Charles Herman Merz, 1874-1940. William Graham Moffat, c1866-1940. *Ibid.* p D147, D147; D148; D149.

057:0149 Obituary: Thomas Bonner Morley, c1882-1941. Lewis Stanley Power, c1904-1940. (Col) Edmund Walker Renny Pinkney, 1876-1940. Henry Albert Jule Rang, ?-1941. *Ibid.* p 149-150; D150.

057:0151 Obituary: (Sub-Lt) Sidney Robinson, c1919-1940. John Henry Silley, 1872-1941. Charles Bertram Tate, c1890-1941. Howard William Townshend, c1848-1940. *Ibid.* p D151; D151, D151; D151-D152.

057:0152 Obituary: Hugh Cameron Welch, c1870-1940. Henry Walker Willcox, c1869-1940. *Ibid.* p D152, D153

058:0500 **NECIES Transactions**, v 58, 1941-1942. [13] pps. viii, 332, D174, 8 p

058:0519 Presidential address (on shipping; shipbuilding). By W.A. Woodson (Clarke Chapman & Co Ltd.). [Read, 17 Oct 1941, Note]. *Ibid.* p 19-32.

058:0533 Merchant sea-power, 1919-1939 (Great Britain, shipping, economics). By W.S. Aneli (King's Coll, Nelsl). Andrew Laing Lect. n 10, [31 Oct 1941, Note]. *Ibid.* p 33-58.

058:0559 Wind tunnel experiments on model reaction (steam) turbine blades (for ships). By M.R. Youssel (affiliation not known). [Read, 13 Nov 1941, Note]. *Ibid.* p 59-89, D1-D19.

058:0581 Further experiments with models of cargo-carrying devices (propellers, resistance & propulsion). By F.H. Todd, J. Woodey (William Froude Lab.). [Read, 28 Nov 1941, Note]. *Ibid.* p 81-108, D11-D20.

058:0594 Plastics and engineering. By A. Cassis (Imperial Chemical Industries Ltd.). [Read, 28 Nov 1941, Note]. *Ibid.* p 109-128, D21-D23.

058:0539 Training of craftsmen for the engineering industry. By F.H. Reed (Scottish Tech Coll). [Read, 9 Jan 1942, Note]. *Ibid.* p 129-142, D23-D48.

058:0147 The future of the railway oil engine. By B. Reed (affiliation not known). [Read, 23 Jan 1942, Note]. *Ibid.* p 143-160, D49-D60.

058:0251 Screw propeller theory. By J.L. Taylor; C. Lawrie (affiliations not known). [Read, 6 Feb 1942, Note]. *Ibid.* p 161-172, D61-D70.

058:0173 Trends in marine lubrication. By S.J.M. Auld; C. Lawrie (affiliations not known). [Read, 20 Feb 1942, Note]. *Ibid.* p 171-204, D91-D102.

058:0229 The testing of welds. By H.N. Pemberton (Lloyd's Register of Shipping). [Read, 6 Mar 1942, Note]. *Ibid.* p 205-246, D103-D124.

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058:0245 Roughened hull surface (inc. resistance model tests). By R.W.L. Gawn (Admiralty Exptl Works, Haslar). [Read, 24 Apr 1942, Note]. *Ibid.* p 245-272, D143-D152.

058:0273 The damping capacity of engineering materials (inc. vibration). By W.H. Hatfield; G. Sturrock; L. Kethunan (Brown-Firth Research Lab, Sheffield). [Read, 15 May 1942, Note]. *Ibid.* p 273-332, D125-D142b.

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058:0162 Obituary: William Bennett Connolly, c1911-1941. Alexander Bruce Cowper, c1921-1941. Sydney James Darling, c1886-1941. Robert Haavel, c1885-1941. *Ibid.* p D152.

058:0163 Obituary: William Ross Huston, c1877-1941. Karl Otto Kuler, c1877-1942. William McIlhenny, c1860-1941. George Frederick Mulholland, c1859-1941. *Ibid.* p D163; D163-D164, D164, D164.

058:0165 Obituary: Alf Valdemar Palmqvist, ?-1941. Arthur Henry Poole, ?-1941. (Lt) Ian Brack Souter, c1914-41. John Leslie Scott, c1891-1941. *Ibid.* p D165, D165; D165; D165-D166.

SECTION 1: CHRONOLOGICAL INDEX.

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059:0183 Hull corrosion and fouling. By G.D. Bengough (Institute of Metals). [Read, 16 Apr 1943, Nole]. Ibid. p 183-208, D123-D125.

059:0207 Modern heat insulating and decking materials. By E. Griffiths; M.J. Hickman (affiliations not known). [Read, 25 Mar 1943, Nole]. Ibid. p 207-230, D119-D122

059:D159 Obituary: Alfred Lindsay Forster, c1870-1943. Ronald John Hindson, c1906-1941. William Bradford Nisbet, c1880-1942. Ernest John Pellow, c1886-1942. Ibid. p D159

059:D160 Obituary: Henry Thomas Sisson, 7-1943. James Stewart, c1860-1943. (R-Admir) John Godwin Tawseley, c1862-1943. Philip David Winstanley, c1859-1943. Ibid. p D159; D160; D160-D161; D161 & other pp.

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060:0299 The mechanical strength of metals. By L.W. Bragg (National Physical Lab). [General discn, 14 Apr 1944, Nole]. Ibid. p 299-306, D160-D186. [See also prev pp. same Index No.]

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060:0188 Obituary. Lt Cdr (Rt. Astroy) Holland Brown, c1902-1941. (Maj) Kenneth Stacey Morton, c1907-1943. Ibid. p 3187

SECTION 1: CHRONOLOGICAL INDEX.

063.D183 Obituary: David Adams, c1871-1943. Ivo Harold Axby, c1922-1944. Gilbert Sistrason, ?-1943. (Lieut.) George William Maurice Swallow, c1917-1943. *Ibid.*, p D188
 063.D189 Obituary: George Thomas Bell, c1902-1941. Charles Bryers, c1874-1943. Joseph Davidson, c1900-1943. Douglas Dobson, c1882-1942. Richard Gray Elliot, c1878-1942. *Ibid.*, p D189.
 063.D190 Obituary: Nils Agnar Fidje, c1893-1944. Robert Arthur Fullerton, ?-1943. Robert Heydon Guyner, ?-1944. Arthur Byram Gowan, c1862-1944. *Ibid.*, p D190; D190; D190; D190 & photo opp.
 063.D191 Obituary: George Mitchell Harroway, c1868-1944. Alexander James Hendin, ?-1944. William Hay Howden, c1884-1943. Marcus Waad MacNay, c1888-1943. *Ibid.*, p D191 & photo opp.; D192; D192, D192.
 063.D193 Obituary: Donald Mathison, c1839-1943. Charles White Metcalfe, c1871-1943. Alexander Purdie, c1889-1944. William Scott, c1864-1943. *Ibid.*, p D193.
 063.D194 Obituary: Arend Hendrik Sellenraad, c1889-1942. (Ma) Edward Charles Straker, c1890-1943. John Thomas, c1854-1944. Richard Gowan Watson, c1925-1944. *Ibid.*, p D194.

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 061.0027 Some recent technical developments in naval construction [structural design]. By S.V. Goodall (Director of Naval Construction, Admiralty) Andrew Lang Lect. n 13, 3 Nov 1944. [Note]. *Ibid.*, p 27-50
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 061.0075 Method and motion study applied to the shipbuilding industry. By H. Ounstein. (affiliation not known). Read, 22 Dec 1944. [Note]. *Ibid.*, p 75-110. D61-D68
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 061.0141 Notes on the fuel system [recharging of diesel & gas engines]. By H.G. Walker (affiliation not known). Read, 12 Jan 1945. [Note]. *Ibid.*, p 141-168. D77-D88
 061.0169 Launching triggers. By H.B.R. Rowell IR & W. Hayward, Leslie & Co Ltd.]. Read, 26 Jan 1945. [Note]. *Ibid.*, p 169-182, D89-D76.
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 061.0222 Obituary: George Murday Carter, c1895-1945. (Lieut(R)) John Carter, c1901-1944. Robert Thomas Cook, c1892-1946. (Cdr Sir) Charles Worthington Craven, 1884-1944. *Ibid.*, p D222, D222, D222, D222-D223.
 061.0223 Obituary: Thomas William Crozier, c1873-1944. James Harry Edwards, 1870-1945. *Ibid.*, p D223.
 061.0224 Obituary: Geoffrey Middleton Eyres, c1909-1945. John Thomas Forest, c1882-1945. John Howland Gardner, c1871-1944. (Eng V-Arthur, Sir) George Goodwin, c1863-1945. *Ibid.*, p D224.
 061.0225 Obituary: Alfred Graham, c1896-1944. John Thomas Graham, c1868-1943. Douglas Greer, c1889-1945. George Humphreys, c1871-1944. *Ibid.*, p D225.
 061.0226 Obituary: Robert Ingo James, 1885-1944. Wilfrid James Fuxton Leonard, c1921-1945. David Ross MacDonald, c1864-1944. *Ibid.*, p D226.
 061.0227 Obituary: Archibald McGlashan, 1855-1945. John Hudson Meek, c1866-1945. Alexander Austin Moir, c1887-1944. Carl Edward Petersen, c1897-1944. Neil Philip Robertson, c1875-1944. *Ibid.*, p D227; Robertson p D227-D228.
 061.0228 Obituary: Thomas Smart Short, 1874-1944. (Sir) Charles Sheraton Swan, 1870-1944. Joseph Wright Tether, c1863-1944. Lucas Zulkeer, c1855-1945. *Ibid.*, p D228

062.0000 NCCIES Transactions, v 62, 1945-46. [15] ppr. viii, 382. D192 p.
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SECTION 1: CHRONOLOGICAL INDEX.

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062.0170 Obituary: (Sir) William Isherwood, 1898-1946. David Arthur Jones, c1923-46. Robert Oliver Patterson, c1877-1946. Bryan Patten, c1914-46. Christian Harold Sandeman, c1878-1946. Ibid, p D170.

062.0171 Obituary: Charles Edric Cooper Stapleton, c1900-1945. Robert Morton Sutton, ?-1945. James Valentine Thompson, ?-1945. Norman Weatherley, c1898-1947. Peter White, c1924-1946. Percy Wilson, c1890-1945. Ibid, p D171; Wilson p D172.

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063.0235 Obituary: William Hamilton, c1876-1946. Hugo Gillis Hammar, c1865-1947. Herbert Spencer Holme, ?-1947. Ibid, p D236.

063.0237 Obituary: (Sir) John Latta, 1867-1946. George Hindmarsh, ?-1946. Henry H. W. Keith, c1879-1946. Alfred John Leach, ?-1946. Charles S. D. McGookin, c1925-1947. Ibid, p D237.

063.0238 Obituary: (Sir) Thomas McPherson, c1872-1947. Andrew Nisbet McQuistan, c1860-1947. Jeremiah Padgett Mills, c1863-1946. Ibid, p D238, D238; D238-D239.

063.0239 Obituary: Samuel Ernest Monkhouse, c1886-1947. Thomas Morison, ?-1946. Bruno Victor Edward Nordberg, c1884-1946. Ibid, p D239.

063.0240 Obituary: Thomas Peterson, c1891-1947. Nathaniel Edwards Robson, c1871-1946. (R-Admir) George H. Ruck, ?-1946. Ibid, p D240.

063.0241 Obituary: William Stewart Smith, c1873-1947. William Goddes Spence, 1860-1946. Herbert Claude Swift, ?-1946. David William Watson, c1921-1946. Ibid, p D241; D241; D241; D242.

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SECTION 1: CHRONOLOGICAL INDEX.

D29-D46.

064:0093 Fire precautions on ships under repair. By F.L. Champness (Palmer's Harbour Ltd.). Read, 30 Dec 1947. [Note] Ibid, p 93-118 & pl. rev. opp. D15-D28

064:0119 The design of marine heating and ventilating systems in habitable accommodation. By R. McDonald (affiliation not known). Read, 9 Jan 1948. [Note] Ibid, p 115-138. D47-D50, D175-178.

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064:0192 Obituary: John Waites Brookfield, c1879-1947. Ray Britton Charlton, ?-1948. John Collier Clouston, c1876-1947. Ibid, p D192; D192; D192-D193

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064:0194 Obituary: Arthur George Greaves, ?-1947. James Foster King, c1862-1947. Ibid, p D194; D194-D195

064:0195 Obituary: George Alexander Luing, c1884-1946. William Alexander Luing, c1902-1947. Gerard John Lunt, c1885-1948. Ibid, p D195; D195; D195-D196

064:0196 Obituary: James William Pirie, ?-1947. (Sir) William Reavell, c1886-1948. Albert Edward Clifton Scott, c1878-1948. Ibid, p D196.

064:0197 Obituary: George Anderson Short, c1887-1948. James Sim, c1884-1947. Herbert Benjamin Spuke, c1877-1947. Septimus George Surtees, c1882-1947. (Capt) Ernest William Swan, 1843-1948. James Swan, c1883-1948. James Taylor, c1890-1948. Ibid, p D197; D197; D197; D197-D198; D198;

D198

064:0199 Obituary: Laurence Bell Walton, c1903-1948. Tom Noel Wynn, c1873-1948. William Robert Gerald Whiting, 1884-1947. Ibid, p D199; D199; D199-D200

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SECTION 1. CHRONOLOGICAL INDEX.

065-D151 Obituary: Alexander Frederick Ainslie, c1876-1949. Augustus John Reid, c1883-1949. Henry James Dobson, c1874-1949. George Hornsby, c1896-1949. *Ibid.* p D151. [See also next pgr, same Index No.]

065-D151 Obituary: (Marquess of Londonderry) C.S.H. Vane-Tempest-Stewart, 1878-1949. Henry Main, c1889-1949. Frederick Mills, c1899-1949. Norbert Wenz, c1877-1948. *Ibid.* p D151-D152; D152; D152; D152. [See also prev pgr, same Index No.]

065-D153 Obituary: Robert Christopher Morrison, c1925-1949. John Morrow, c1876-1949. Ole Holger Munch, c1873-1949. William Nithsdale, c1900-1949. *Ibid.* p D153.

065-D154 Obituary: William Reed, c1875-1949. Stanley James Rohan, c1889-1949. Percy William Ruddock, c1888-1949. Launcelet Eustace Smith, 1868-1949. *Ibid.* p D154; D154; D154-D155 & photo

065-D155 Obituary: John Taylor. ?-1948. William Taylor, c1876-1949. Harry Towers, c1898-1949. Percy F. C. Wilcox, c1869-1949. *Ibid.* p D155; D155; D155-D156; D156.

065-D168 Index to the Transactions, v 53 - v 65. *Ibid.* 16 p sup p D168.

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066-0495 Obituary: Karl Arnesen, c1901-1948. George Stephen Baker, c1877-1949. *Ibid.* p D195; D195-D196 & photo opp.

066-0496 Obituary: Malcolm Colquhoun Cowan, c1899-1951. George Duncanson Craig, c1924-1951. Harold Raylton Dixon, c1873-1950. *Ibid.* p D196.

066-0497 Obituary: James Stodd Ellis, c1893-1949. Thomas Fleming, c1887-1950. Maurice Sylvester Gibb, 1878-1950. *Ibid.* p D197; D197; D197-D198 & photo opp.

066-0498 Obituary: Angus Stafford Gurney, c1890-1949. Henry Thomas Harty, c1874-1950. William Tate Martin Krause, c1887-1949. Ronald George Manley, c1921-1950. *Ibid.* p D198; D198; D198; D198-D199.

SECTION I: CHRONOLOGICAL INDEX.

066.D192 Obituary: James Foster Morris, c1922-1949. William Wake Puddon, c1864-1950. Emil Alken Quack, c1874-1950. Walter Granger Richards, c1878-1950. *Ibid.*, p D199; D199; D199-D200.

066.D200 Obituary: John Joseph Welch, c1861-1950. John Frederick Wilson, c1881-1949. Robert Hope Winstanley, c1862-1950. William Armstrong Woodson, 1869-1949. *Ibid.*, p D200-D201; D201; D201-D202; D202 & phot opp.

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067.0297 Forging methods. By J.C. Stevens (affiliation not known). *Read*, 30 Mar 1951. [Note] *Ibid.*, p 297-310. D107-D114 & phot opp.

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067.D189 Obituary: John Thomas Anthony, c1861-1951. John Thomas Bates, 1862-1951. *Ibid.*, p D189 & phot opp. D189 & phot opp.

067.D190 Obituary: Th. Gustaf Alexander Berg, c1897-1951. David Somers Brown, c1877-1950. Charles Waldie Cairns, c1873-1951. *Ibid.*, p D190; D190; D190-191.

067.D191 Obituary: Robert Stanley Campbell, c1885-1951. John Denham Christie, c1860-1950. *Ibid.*, p D191; D191-D192.

067.D192 Obituary: Charles Herbert Cooke, c1888-1950. John Munnick Cooper, c1893-1950. John Hall Farmer, c1885-1950. James MacCulloch Lochland, ?-1950. *Ibid.*, p D192.

067.D193 Obituary: John Lewis Luckenbach, c1884-1951. (Dacyn) Joseph Putnam Macleay, 1857-1951. Claude Mallet, c1893-1951. *Ibid.*, p D193.

067.D194 Obituary: Thomas Francis Meade, c1864-1950. Peter Purdie, ?-1951. William Thomas Rimer, ?-1950. Alexander McRobb SCD, c1875-1951. *Ibid.*, p D194.

067.D195 Obituary: (Sir) Eustace Henry William Tennison-Drummond, 1868-1951. Oswald Wans, c1880-1951. William W. Wilson, ?-1949. Henry Clay Wright, c1878-1950. *Ibid.*, p D195; D195; D195; D196.

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068.D164 Obituary: (Sir) Amos Lowery Ayre, 1885-1952. Charles Blow, c1870-1951. Leonard F.G. Bassebart, ?-1951. (R-Adm), Marquess of Bristol, F.V.F. Hervey, 1863-1951. *Ibid.*, p D164 & phot opp; D165; D165; D165.

SECTION 1: CHRONOLOGICAL INDEX.

368:D165 Obituary: George Buchanan, ?-1952. Frederick Percy Connor, c1930-1951. Stanley Thomas Cook, c1875-1952. Thomson Bankhead Coull, c1892-1951. *Ibid.*, p D165; D165; D166; D:66-D167

368:D167 Obituary: Francis William Dugdale, c1892-1951. Wladimir Faerman, c1889-1951. John Featherstone, c1888-1951. *Ibid.*, p D167.

368:D168 Obituary: John Goldsworthy, c1886-1951. John Grant, c1893-1952. William Hall, c1874-c1952. John Carrick Kenneagh, c1889-1952. (Sir) James Lithgow, 1883-1952. *Ibid.*, p D:68; D168; D168-D169; D169; D169-D170 & photo note

368:D170 Obituary: (Prof) Alexander Lawson Mellanby, 1871-1951. William Henry Pilmot, c1877-1952. *Ibid.*, p D170; D170-D171 & photo opp p D170.

368:D171 Obituary: Thomas Lawrence Smith, c1912-1951. (Sir) Robert Norman Thompson, c1878-1951. Edgar Allen Wawn, c1880-1951. Thomas Sanley Winship, ?-1951. *Ibid.*, p D171; D:71; D171; D172.

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369:D124 Obituary: Thomas Searle Brown, c1886-1953. Allan Caldwell, c1890-1952. George Barr Cuckburn, ?-1952. Leonard Dadd Derry, ?-1952. *Ibid.*, p D124.

369:D125 Obituary: Thomas Dicklison, ?-1952. George William Farlam, ?-1952. Tom Feather, c1880-1953. David Barclay Ferrie, c1893-1952. Charles John Hawkes, c1881-1953. *Ibid.*, p D125; D125-D125; D125; D126-D127 & photo between

369:D127 Obituary: Herbert Septimus Humphreys, c1890-1952. Robert Jobling, ?-1952. Percy Ledger, ?-1953. George William Luthwaite, c1892-1952. *Ibid.*, p D127; D127-D128; D128; D128.

369:D128 Obituary: William Christie MacMillan, ?-1952. Jules Meuwissen, c1871-1952. James Stuart Oliver, ?-1952. Susan Orde, c1894-1953. *Ibid.*, p D128, D128-D129; D129; D129.

369:D130 Obituary: William Joseph Paulin, c1870-1952. Norman Henry Reed, c1890-1952. Charles Norrie Smith, ?-1952. (Sir) Arthur Munro Sutherland, 1867-1953. *Ibid.*, p D129-D130; D130; D130; D130-D131.

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SECTION 1: CHRONOLOGICAL INDEX.

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- 070:D200 Obituary: Louis Vandealle Dunlop, c1879-1953. William Frederick Fletcher, c1840-1954. John Ford, c1869-1953. John Percy Hall, c1885-1954. Ibid. p D200.
- 070:D201 Obituary: Lawrence Harvey, ?-1953. James Harold King, c1892-1953. Cornelis Ludder, c1896-1954. Andrew McArthur Morrison, c1885-1953. Ibid. p D201.
- 070:D202 Obituary: Thomas Pratt, c1896-1953. Robert Muir Scott, ?-1953. Thomas Shaw, c1868-1954. Ibid. p D202.
- 070:D203 Obituary: Edward Frank Spanner, 1888-1953. Wilfred Joseph Francis Temple, ?-1953. Alexander Warley, c1892-1954. William White, c1880-1954. Ibid. p D203.
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- 071:D131 Obituary: Thomas Thompson Brown, ?-1955. John Ernest Burkhardt, c1897-1954. Ibid. p D131; D131-D132.
- 071:D132 Obituary: Thomas Leane Campbell, c1924-1954. William Francis Dunne, ?-1953. (Lt-Col) Henry Gordon-Luhns, 1880-1954. George Ernest Hunter, c1875-1954. Ibid. p D132, D132; D132, D132-D135.
- 071:D133 Obituary: William Jenkins, c1905-1954. Klaus Kuyt, c1894-1954. John Seton MacKay, c1879-c1955. Ibid. p D133.
- 071:D134 Obituary: Iain Ramsay McLeod, ?-1954. William Stark Newell, c1879-1954. William John Niven, ?-1955. Alfred Orley, ?-1954. Ibid. p D134.
- 071:D135 Obituary: David Park Peel, ?-1955. Alfred Ernest Pickering, ?-1955. Frederick Gerald Rapoport, c1876-1954. Ibid. p D135.
- 071:D136 Obituary: John Renton, ?-1954. Keith Stanley Malcolm Scott, c1884-1954. Richard Henry Stephenson, c1884-c1955. James Charlie Stewart, ?-1955. Ibid. p D136.
- 071:D137 Obituary: Fred Stewart, c1894-1954. Norman George Turnbull, c1879-1954. Arthur Valder, c1867-c1955. Richard Henry Miller Watson, ?-1955. Ibid. p D137.
- 071:D138 Obituary: Frederick Brown West, c1890-1955. Henry George Yates, ?-1954. Ibid. p D138.
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SECTION I: CHRONOLOGICAL INDEX.

- D66.
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- 072:0158 Obituary: William Morton, c1873-1956. Kenneth Arthur Mountain, c1888-1956. (Hon) Geoffrey Lawrence Parsons, c1875-1956. Ibid. p D168
- 072:0159 Obituary: Henry Knight Rodgers, c1901-1955. William Rogers, c1886-1955. John Maxwell Routhwaite, c1884-1955. Anton Joseph Schaeffer, 1956. Ibid. p D169; D169; D169-D:70; D170.
- 072:0170 Obituary: William Reid Sharp, c1891-1956. Thomas Edwin Shaw, c1891-1955. Moritz Gustav Seufelhorn Swallow, c1875-1956. Ibid. p D170; D170; D171.
- 072:0171 Obituary: John Stanley Todd, c1860-1956. George Frederick Tweedy, c1874-1955. William South Wilson, c1867-1955. James Young, c1880-1955. Ibid. p D171; D171. D172-D172
-
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- 073:0179 Comprehensive trials of complete marine propulsion [steam] turbine installations (esp. warships). By H.E.C. Hims (PAMETRAIDA Research Station). Read, 11 Jan 1957. [Note]. Ibid. p 179-196. D25-D34.
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- 073:0148 Obituary: Audrey Brian Binns, c1875-1956. Edward Ronald Brigham, c1898-1959. Charles Brodrick Milsell, c1898-1956. Ibid. p D148.
- 073:0149 Obituary: Stanley Dale, c1911-1957. John Wilson Elliott, c1887-1957. Carter Fox, c1876-1956. (Sir) Walter David Russell Jackson, 1890-1956. Ibid. p D149; D149; D149; D149-D150
- 073:0157 Obituary: Robert MacGregor, c1874-1956. (Dr) Harvey Orenstein, c1888-1956. Alfred Pickworth, c1885-1956. Ibid. p D150; D150; D150-D151.
- 073:0151 Obituary: Marcus Rankin Potter, c1896-1956. Robert Sedney Potts, c1901-1957. Ibid. p D151.
- 073:0152 Obituary: Thomas Glison Potts, c1873-1956. Edmund Jule Rang, c1909-1957. Ernest Handfield Rigg, c1876-1956. Ibid. p D152.
- 073:0153 Obituary: Ewen Henry Smith, c1896-1957. Fred Cox Smith, c1898-1957. Tom Halliwell Scudliffe, c1899-1956. Dominique Wynn, c1871-1956. Ibid. p D153; D153; D153; D153-D154.
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- 074:0000 NECIES Transactions, v 74, 1957-58. [14] pp. vii. 378 D758 p

SECTION I: CHRONOLOGICAL INDEX.

- 074.0021** The strength of approximately flat long rectangular plates under lateral pressure [for naval vessels]. By J. Clarkner (NCRE, Dunfermline) Read, [c1957]. Note. Ibid, p 21-49. D1-D8.
- 074.0041** The marine oil engine: a chapter in its evolution. By C.C. Pounder (Halliwell & Wolff Co Ltd). Andrew Lang Lect, n 26, 1 Nov 1957. Note. Ibid, p 41-100.
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- 074.0143** Obituary: Robert Binchcliffe, c1875-1958. Alexander Kari, c1898-1958. Percival Arthur Mund, c1897-1957. Peter Haig Muirhead, c1905-1958. Ibid, p D143; D144; D144; D144.
- 074.0145** Obituary: (Lord) Percy of Newcastla, c1887-1958. Ibid, p D145-D145.
- 074.0146** Obituary: Joseph Stanley Redden, c1899-1957. Norman Stanley Rowston, c1901-1957. Thomas Joseph Roberts, c1888-1958. George Swan, c1898-1958. Ibid, p D146.
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SECTION I: CHRONOLOGICAL INDEX.

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076-D103 Obituary: David McCutcheon Brown, c1879-1959. Norval Henry Burgess, c1880-1960. Henricus Stephanus Lambertus Druggemann, c1931-1959. (N-Adm) Edward Lull Coultrane, 1882-1959. Ibid, p D103, D103; D353; D103-D104

076-D104 Obituary: William Ivory, c1888-1959. (SIR) George Tristram Edwards, c1893-1960. Ibid, p D104; D104-D105.

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SECTION 1: CHRONOLOGICAL INDEX.

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077-D123 Obituary: Thomas Broadbent Osbourne, c1888-1959. (Capt) E. John Roland Patterson, c1902-1960. Ibid, p D123.

077-D124 Obituary: Robert Cecil Rhodes, c1898-1960. Robert Shaw, c1902-1961. David Kerr Roberts, 1961. George Gillis Storp, c1874-1960. Ibid, p D124.

077-D125 Obituary: William Greenfield Spencer, 1960. Albert Wilson, c1888-1960. Andrew White Young, c1873-1960. Ibid, p D125; D125; D125-D126.

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078-D152 Obituary: (Lt Col) Austin Graves Bates, 1891-1961. Alfred Cartwright, c1905-1961. Hugh Munton Le Fleming, c1902-1961. Ibid, p D152; D152; D152-D153.

078-D153 Obituary: Henry Platt, c1890-1961. Alfred Cecil Hardy, c1898-1961. William Ambrose Harriman, c1884-1962. Ibid, p D153; D153; D153-D154.

078-D154 Obituary: Bernard Philip Ingamells, c1901-1962. James Robert Jeffery, c1891-1962. Duncan Craig McCulloch, c1888-1961. Ibid, p D154; D154; D154-D155.

078-D155 Obituary: Ross Mackinnon Porteus, c1933-1962. Frederick John Potts, c1905-1961. James Edward Smith, c1915-1962. Ibid, p D155.

078-D156 Obituary: William Spoor, c1907-1962. Olav Stenvang, c1926-1962. Arthur Temple, c1908-1962. Norman Wright, 1961. Ibid, p D156.

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SECTION 1: CHRONOLOGICAL INDEX.

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079-0095 Optimized traveler forms. By D.J. Doast (National Physical Lab). Read. 7 Dec 1962. [Note]. Ibid. p 95-136. D23-D36.

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079-D159 Obituary: John Leslie Batey, 1896-1962. David Gardner Brown, c1899-1963. Ibid. p D159. D159-D160.

079-D160 Obituary: Norman Hulman Cowans, ?-1963. (Admiral of the Fleet, Viscount) Cunningham of Hyndhope, 1883-1963. George W. Currie, ?-1962. Ibid. p D160; D160; D160-D161.

079-D161 Obituary: Richard Ernest Denham, c1941-1962. James Edward Fessenden, c1892-1963. Edwin Graham, c1889-1962. (Sir) Sumner Hoster, 1890-1962. Ibid. p D161; D161; D161; D161-D162 & passim ante.

079-D162 Obituary: David Lyon McLarty, ?-1962. Eric Wilson Melvin, c1909-1963. Ibid. p D162.

079-D163 Obituary: George Nelson, c1877-1962. Henry Bigelow Outley, c1876-1962. Gerardus Wilhelmus Pieterse, c1918-1962. John MacIntyre Robertson, c1897-1963. Ibid. p D163.

079-D164 Obituary: Lennart Swanson, c1926-1963. Herbert Charles Trewicks, c1882-1963. (Sir) William Wallace, c1882-1963. Dudley Forbes White, c1905-1962. Ibid. p D164; D164; D164.

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080-D081 Obituary: William Harriet Jobling, c1891-1963. (Sir) Philip Bulmer Johnson, 1887-1954. William Lambie, ?-1963. Ibid. p D81.

080-D082 Obituary: Thomas MacDonald, ?-1964. Joseph William Mudd, c1897-1963. Douglas Nelson, ?-1962. Percy Noble, c1895-1964. (Sir) Frederick E. Rehbeck, c1890-1964. Ibid. p D82. D82. D82. D82; D82-D83.

080-D083 Obituary: (Viscount) Matthew White Ridley, 1902-1964. Jesse Rowen, ?-1963. Henry Arnott Sisson, c1887-1963. Ibid. p D83. D83. D83-D84.

080-D084 Obituary: William Robertson Sutherland, ?-1964. Giuseppe Zeno, c1902-1964. Ibid. p D84.

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SECTION I: CHRONOLOGICAL INDEX.

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SECTION 1: CHRONOLOGICAL INDEX.

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SECTION 1: CHRONOLOGICAL INDEX.

D1-D5

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SECTION 1: CHRONOLOGICAL INDEX.

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D22.

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092:0101 World-wide market and maritime transportation of liquefied gases. By R. Boudet (Gazocoor, France) Blackadder Lect, n 11, 16 Feb 1976. [N.C.E.] Ibid, p 101-108

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SECTION 1: CHRONOLOGICAL INDEX.

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093.0105 Obituary: William Muckle, 1912-1977. Edmund Victor Teller, 1897-1977. Ibid. p 105-106, C6.

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SECTION 1: CHRONOLOGICAL INDEX.

094:0002 The development of technical information systems [inc. computers in shipbuilding]. By J.A. Cairns (Harland & Wolff Ltd). Seascope'78, 20 Apr 1978, Nels. Ibid, pgs 2, p 2.1-2.23; v [2], p 2.21-2.24.

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244 p.

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096:0114 Obituary: (Sir) James (Brewis) Woodeson, 1917-1980. [Nels] p 114.

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096:0183 Buffeting of chimney stacks in winds [inc. aerodynamics, vortex shedding]. By J.R. Richardson (National Maritime Institute). Read, 10 Mar 1980, [Nels] Ibid, p 189-195.

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097:0000 NECCES Transactions, v 97, 1980-81, [13] pgs, iv, 382 p.

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SECTION 1: CHRONOLOGICAL INDEX.

1980. [Note] *Ibid.*, p. 23-34.

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SECTION 1: CHRONOLOGICAL INDEX.

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099:0113 Obituary: Mungo Campbell, 1900-1982. Julian Walter Eckhard, c1923-1982. Anthony Gilchrist, 9-1982. James Robertson Mackay, 7-1982. Ibid, p 112.

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100:0071 Personal notes: J.C. Asher; Peter Henry (Snr). Obituary: George Bennett Hulley, 2-c1982. George Anthony Smith, 1921-1983. Ibid, p 71, 72, 73, 73-75.

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100:0150 Personal notes: Alex F. Harrold. Peter Munson. Ibid, p 150-151; 151-152.

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100:004 The effect of the wake distribution on the optimum diameter of marine propellers. By L. Hawcoot; G. Pateras; J.A. Clayton (Stone Manganese Marine Ltd, Birkenhead). Ibid, pp 4, p (4-1)-(4-17); v Discs, p (D4-1)-(D4-7).

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100:012 The future automated ship: the role of classification societies. By A. Tassou (Bureau Veritas, France). Ibid, pp 12, p (12-1)-(12-37); v Discs, p (D12-1)-(D12-8).

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SECTION 1: CHRONOLOGICAL INDEX.

Sir Charles Parsons Memorial Lect. in 49], 19 Nov 1984. [Note]. Ibid. p 15-31

101:3045 **Obituary: Percy Jackson, c1897-1984.** R. J. W. Rudkila. c1924-1984. (Prof) Aubrey Frederic Bursall, c1902-1984. Ibid. p 45: 46; 46-47.

101:3049 **Preliminary design of semi-submersibles.** By J.W. Penney (Univ. of Newcastle upon Tyne); R.M. Riser (VO Offshore Ltd). Read, 8 Oct 1984. [Note]. Ibid. p 49-63. 71-74

101:3055 **The unrelenting advance of medium and high speed diesel engines.** By W. Ruzk (GEC Diesels; & Institution of Mechanical Engineering). Andrew Laing Memorial Lect. n 52, 3 Dec 1984. [Note]. Ibid. p 75-85

101:3057 **Computer graphics [for CAD/CAM].** Honored by British Shipbuilders (Engineering & Technical Services) Ltd; Sunderland Shipbuilders Ltd. Discn evng, 14 Jan 1985. [Note]. Half page summary. Ibid. p 87.

101:3059 **A decade's problems for Europe's shipbuilding industry.** By N. Linnart (Minister of State for Industry, UK). Blackadder Lect. n 19, 11 Feb 1985. [Note]. Ibid. p 89-95.

101:3065 **Tug-barges for short sea routes with special reference to the North East coal trade.** By G. Marsau (BSRA). Read, 21 Jan 1985. [Note]. Ibid. p 105-119. 121-126.

101:3072 **The application of high power laser technology to ship production.** By L.R. Martyr (Ferranti plc). Read, 25 Feb 1985. [Note]. Ibid. p 127-141. 143-144.

101:3075 **A century of service: where do we go from here? [of the N.E.C.I.E.S.].** With J.E. Clarke (Newcastle upon Tyne Poly). Discn evng, 1 Apr 1985. [Note]. Ibid. p 145-146.

101:3078 **Institution notes [Robert Conte].** Robin Gray. Personal notes: Joe Davison. Norman Roger Chesley. Obituary: Reginald Hibson, c1914-1983. Ibid. p 148; 150-151; 151-152; 152-153

101:3075 **Shinkai 2000, deep submergence research system. Part 1: the submersible Shinkai 2000, Part 2: the support ship Natsushima.** By M. Endo (Mitsubishi Heavy Industries Ltd, Japan); T. Ikeda (Kawasaki Heavy Industries Ltd, Japan). Read, 13 Mar 1985. [Note]. Ibid. p 155-175. 177-181.

101:3085 **Man-made-fibre ropes for marine use [inc. mooring & towing].** By A.J. Rasthills (Univ. of Newcastle upon Tyne); M.R. Farley (H. & T. Marlow Ltd). Read, 29 Apr 1985. [Note]. Ibid. p 183-193. 195-197

101:3099 **American shipbuilding techniques. A report of the 1984 Travelling Scholarship of the Junior Section.** By A.L.C. Carr (Univ. of Newcastle upon Tyne). Jnr Sect Mtg, 17 Jan 1985. [Note]. Ibid. p 199-205.

101:3208 **Personal notes: Michael N. Parker, John Burton Davis. Farewell to our secretary: Mrs Alysne Wilson.** Ibid. p 208-209, 209-210, 210-211

102:3060 **NECIES Transactions, v 102, 1985-86.** [13] ppns, v. 179 p

102:3071 **The prediction of realistic long term ship seakeeping performance [of a fisheries protection vessel].** By J.R. Sponzo (British Maritime Technology Ltd, Feltham). Read, 7 Oct 1985. [Note]. Ibid. p 1-12

102:3073 **Managing the London Underground [railway].** By T. Riley (London Underground Ltd). ECRC Annual Prestige Lect. n 1, 16 Oct 1985. [Note]. Summary, ibid. p 31.

102:3075 **A new way to produce high-technology machinery [underwater plough for pelaying].** By A.R. Reaxo (Steel Machine Dynamics Ltd). Read, 21 Oct 1985. [Note]. Ibid. p 35

102:3077 **Structural change of the industrial and labour situation in Japan [inc. shipyards].** By I. Yamashita (Mitsui Engineering & Shipbuilding Co Ltd, Japan). Andrew Laing Memorial Lect. n 54, 4 Nov 1985. [Note]. Ibid. p 37-44.

102:3075 **Personal notes: Douglas Gordon Ogilvie. Obituary: Denis Hardie, c1923-1985. Personal notes: Peter McGovern.** Ibid. p 55-56; 56; 56

102:3079 **Methods for incorporating uncertainty in preliminary ship design.** By P. Ser (Univ. of Newcastle upon Tyne). Read, 25 Nov 1985. [Note]. Ibid. p 59-67, 68-70

102:3071 **Is successful management teachable?** By C.C. Galt (Univ. of Newcastle upon Tyne). Discn evng, 27 Jan 1986. [Note]. Ibid. p 71-72.

102:3073 **The role of the press in the maritime industries.** By W.D. Ewart (Marine consultant, formerly with Langley International). Blackadder Lect. n 20, 17 Feb 1986. [Note]. Ibid. p 73-78.

102:3075 **Personal notes: Ian Lyon Buxton.** Ibid. p 85-86.

102:3087 **Developments in the Port of Tyne with particular reference to the Tyne Coal Terminal (inc. colliers).** By G.V. Carr. J. Brinkhurst (Port of Tyne Authority). Read, 15 Dec 1985. [Note]. Ibid. p 87-98.

102:3099 **Robotics and FAST (Flexible Automation in Shipbuilding Technology).** By J.M. Kalogerakis (Swan Hunter Shipbuilders Ltd). Junior Award. Read, 20 Feb 1986. [Note]. Ibid. p 99-114.

102:3075 **Seascope'86: Maritime industry, high risk - low return? [shipbuilding economics].** Conference, 9 Apr 1986; Univ. of Newcastle upon Tyne. Organised by NECIES Jnr Sect. Summaries of 5 ppns. Ibid. p 135-115. [see full ppns in 102:3000-102:3007]

102:3079 **Personal notes: Arthur Storey.** Ibid. p 119-121

102:3073 **Building aircraft carriers: an account of the building of HMS Illustrious and HMS Ark Royal.** By A.J. Marsh; N. Gilchrist (Swan Hunter Shipbuilders Ltd). Read, 13 Jan 1986. [Note]. Ibid. p 123-131, 133-135.

102:3077 **The application of controllable ballasting to cargo carrying ships [tankers & bulk carriers].** By T.A. Logan (Vickers Shipbuilding & Engineering Ltd); P.J. Christenson (Ocean Fleets Ltd) (both formerly w. Univ. of Newcastle upon Tyne). Read, 17 Mar 1986. [Note]. Ibid. p 137-158.

102:3079 **The application and fuel economy of gas turbine combined cycle for LNG carriers.** By S. Ikeda, T. Katsuo (JHI Co Ltd, Japan). Read, 28 Apr 1986. [Note]. Ibid. p 159-172

102:3077 **Personal notes: Neil Stothard.** Ibid. p 177-178.

102:3075 **Seascope 86: Maritime industry, high risk - low return? [shipbuilding economics].** Conference, 9 Apr 1986; Univ. of Newcastle upon Tyne. [Proceedings]. Organised by NECIES Jnr Sect. Published by NECIES. 1 v. 5 ppns, various pagings.

102:3075 **Opening address [shipbuilding economics].** By J.C. Day (British Shipbuilders Ltd). Seascope 86, 9 Apr 1986. Note. Ibid. p [0-1]-[0-6]

102:3075 **Staying alive in a desperate market: British Shipbuilders search for targets of opportunity.** By S.W. Sweitzer (British Shipbuilders Ltd). Seascope 86, 9 Apr 1986. Note. Ibid. pp 1-1 p [1-1]-[1-7]

102:3075 **The conflicting interests of being ship owner, builder and financier.** By J.W. Fletcher (Trafalgar House Ltd). Seascope 86, 9 Apr 1986. Note. This. pp 2-1 p [2-1]-[2-21].

102:3075 **A shipbuilder's view of the world market, reflecting the different criteria for the U.K. and overseas.** By R.W.S. Eason (Yarrow Shipbuilders Ltd). Seascope 86, 9 Apr 1986. Note. Ibid. pp 3-1 p [3-1]-[3-31].

102:3075 **Ship financing in today's climate and the outlook for the future.** By R.L. Easton (National Westminster Bank Ltd). Seascope 86, 9 Apr 1986. Note. This. pp 4-1 p [4-1]-[4-40].

102:3075 **World shipbuilding: international competition.** By D. Stoenzke (Drewry Shipping Consultants Ltd). Seascope 86, 9 Apr 1986. Note. Ibid. pp 5-1 p [5-1]-[5-25].

102:3075 **Closing address [on shipbuilding economics].** By M. Meek (British Maritime Technology). Seascope 86, 9 Apr 1986. Note. Ibid. p [6-3]-[6-5].

SECTION I: CHRONOLOGICAL INDEX.

- 103:0009 **NECIES Transactions**, v 103, 1986-87. [19] pps. iii, 172 p.
- 103:0001 **Presidential address. A case for shipbuilding (on GB government subsidies)**. By P.A. Mitra (British Shipbuilders Ltd). Read, 6 Oct 1986. [Nole] Ibid, p 1-6.
- 103:0113 **Offshore vehicle design: the consequences of operating in ice (inc. icebreaking vessels in the Arctic)**. By P.W. Penney (Univ of Newcastle upon Tyne) Read, 20 Oct 1986. [Nole] Ibid, p 23-23, 25-23.
- 103:0129 **Walker wingcell operating experience on the mv Astington (1600 dwt bulk carrier)**. By P.M. Burney (Stephenson Clarke Shipping Ltd), J. Walker (Walker Wingcell Systems Ltd). Read, 17 Nov 1986. [Nole] Ibid, p 29-30.
- 103:0141 **Personal note: John Arkless, John Edward Church, James Fabian Ruscombe King**. Ibid, p 41-42, 43-44, 44-45.
- 103:0147 **The transportation of large indivisible loads (road transport; heavy lift vessels)**. By R. Hawley (Power Engineering Group, NEL plc) Andrew Laing Memorial Lect, n 55, 1 Dec 1986. [Nole] Ibid, p 47-57.
- 103:0159 **An improved method of calculating engine excited hull vibrations**. By F. Orbeck, I.G. Lenzley (Marine Design Consultants Ltd), A.R. Grindall (Cameron Iron Works). Read, 15 Dec 1986 [Nole] Ibid, p 59-60.
- 103:0171 **Building ships in the North East; historical symposium; 22 Nov 1986; Museum of Science & Engineering, Newcastle upon Tyne. Organised by RINA Historical Group & NECIES. Summary of 5 pps. Ibid, p 71-73. [see 103:0071, 103:0072].**
- 103:0071 **Responses to technical change in shipbuilding in the North East (inc. history, high speed craft)**. By J.F. Clarke (Nole Poly. retired). Hist Symp, 22 Nov 1986. Nole Summary, ibid, n 71. [see also prev 1 ppr, following 2 pps, same Index No.]
- 103:0072 **Shipbuilding on the River Wear 1930-1986**. By J. Davison (Sunderland Poly). Hist Symp, 22 Nov 1986. Nole Summary, ibid, p 71-72. [see also prev 2 pps, same Index No.]
- 103:0073 **Turbines: recent research and development (steam turbines)**. By A.G. Osler (Tyne & Wear Museums). Hist Symp, 22 Nov 1986. Nole Summary, ibid, p 72. [see also next ppr, same Index No.]
- 103:0074 **The early tankers: Gluckauf and her predecessors**. By F.D. Watson (Wharfedale Systems & Contract Ltd). Hist Symp, 22 Nov 1986. Nole Summary, ibid, p 72. [see also prev 1 ppr, following 1 ppr, same Index No.]
- 103:0075 **A century of heavy lifting-out cranes**. By B. Newson (Clark Rinzold Ltd). Hist Symp, 22 Nov 1986. Nole Summary, ibid, p 72-73. [see also prev 2 pps, same Index No.]
- 103:0076 **An integrated approach to ship design using CAD**. By G. Stepanien (Marine Design Consultants Ltd). Read, 12 Jan 1987. [Nole] Ibid, p 75-75.
- 103:0077 **Technical manpower planning (inc. education & training)**. By W. HEE (Univ of Newcastle upon Tyne) Discr evng, 26 Jan 1987. [Nole] Ibid, p 77-81.
- 103:0086 **Personal notes: Robert W. Peach**. Ibid, p 86-87.
- 103:0089 **The analysis of marine fuels with reference to diesel engine performance**. By D.G. Richardson, G. Armstrong (Univ of Newcastle upon Tyne); C.N. Panikar, P.S. Karanikar (Lloyds Register of Shipping). Read, 2 Feb 1987. [Nole] Ibid, p 89-100.
- 103:0119 **Maritime technology: a response to low oil prices (inc. shipbuilding & offshore engineering)**. By J. Bicks (British Maritime Technology Ltd). Blackadder Lect, n 21, 2 Mar 1987. [Nole] Ibid, p 101-106.
- 103:0137 **Preliminary ship design using a multi-based system (CAD)**. By M. Welsh (Univ of Newcastle upon Tyne, & North-East Shipbuilders Ltd). Jnr Sect Mtg, 29 Jan 1987. [Nole] Winner Jnr Award 1987. Ibid, p 107-114.
- 103:0115 **The radii of gyration of merchant ships (for ship motions)**. By R.W. Peach (consultant, USA) A.K. Brook (British Maritime Technology Ltd). Discr evng, 15 Feb 1987. [Nole]

- Ibid, p 115-117.
- 103:0123 **The challenge of automation in shipbuilding (inc. welding, computer integrated manufacture)**. By D.N. Waller (Welding Institute) Read, 16 Mar 1987. [Nole] Ibid, p 125-133, 135-137.
- 103:0139 **The design and operation of catamaran vessels**. By H. Ozawa (Mitsui Engineering & Shipbuilding Co Ltd, Japan) Read, 27 Apr 1987. [Nole] Ibid, p 129-133, 137-138.
- 103:0159 **The application of GRP to ship construction (inc. mine warfare vessels, small craft)**. By A. Bunney (Vesper Technology (UK) Ltd) Jnr Sect Mtg, 29 Oct 1986. [Nole] Ibid, p 159-164.
- 103:0168 **Personal notes: G. Harold R. Towers**. Ibid, p 163-169.

- 104:0000 **NECIES Transactions**, v 104, 1987-88. [12] part. iii, 157 p.
- 104:0007 **Developments of product and production technology in the shipbuilding industry of the Federal Republic of Germany**. By H. Meckel (Brenner Vulkan AG, Bremen, German FRG). Read, 5 Oct 1987. [Nole] Ibid, p 7-17.
- 104:0019 **The nationalised shipbuilding industry in the United Kingdom: the first decade, 1977-1987**. By B.M. Baxter (marine consultant, [formerly with Yarrow Shipbuilders Ltd]). Andrew Laing Lect, n 56, 16 Nov 1987. [Nole] Ibid, p 19-25.
- 104:0131 **Technical staff development and the funds available. Report on a symposium; 29 Sept 1987; Univ of Newcastle upon Tyne, UK. [summaries of 7 pprs]. By J.C. Tsey (Engng Council); S.A. Roberts (ELTB); G. Fort (MSC); K. Johnson (Dept Trade & Industry); J. Harrison (MSC); S. Hulley (Open Univ); A.J. Eggleston (SERC). Ibid, p 21-32.**
- 104:0142 **Obituary: William Harding, 2-1987**. Ibid, p 42-43.
- 104:0145 **An aid to steel cost estimating and structural design optimisation (of ships)**. By D. Brown (Swan Hunter Shipbuilders Ltd). Read, 26 Oct 1987. [Nole] Ibid, p 45-61.
- 104:0163 **Advanced computation, experiment and design: a challenging and changing environment**. By O. Koch (Institution of Mechanical Engineers). Blackadder Lect, n 22, 29 Feb 1988. [Nole] Ibid, p 63-72.
- 104:0173 **Marine surveys and surveyors today: a discussion evening. Introduced by D.G. Redpath (Univ of Ulster). Read, 14 Dec 1987. [Nole] Ibid, p 73-74.**
- 104:0179 **Obituary: Mervyn Richard Hargreaves, 1942-1987**. Ibid, p 79.
- 104:0181 **The effect of motions in assessing intact ship stability (inc. IMO regulations)**. By A.K. Brook (British Maritime Technology Ltd). Read, 30 Nov 1987. [Nole] Ibid, p 81-92.
- 104:0193 **High power laser welding of T joints in ship production**. By S.J. Brouse (British Shipbuilders Ltd & formerly Univ of Newcastle upon Tyne). Read, 13 Jan 1988. [Nole] Ibid, p 92-103, 105-107.
- 104:0199 **The technician engineer, the unions and the professional institutions (inc. education & training)**. Introduced by G.B. Lynch (Sunderland Poly). Discr evng, 25 Jan 1988. [Nole] Ibid, p 109-111.
- 104:0216 **Obituary: John Hedley Short, c1919-1988**. Ibid, p 117.
- 104:0217 **Evolution of a modern, high output, medium speed (marine) diesel engine**. By W.A. Poynton; J.K. Turner (Maritime Research (Stockport) Ltd). Read, 8 Feb 1988. [Nole] Ibid, p 117-127.
- 104:0228 **Some aspects of the removal of offshore production platforms**. By P.W. Penney (Univ of Newcastle upon Tyne). Read, 14 Mar 1988. [Nole] Ibid, p 129-141.
- 104:0143 **Current automated ship production developments in Italy [Financieri] and Finland [Wartsila]: a report of the 1987 Travelling Scholarship of the Junior Sect**. By I.K. Ryan (Univ of Newcastle upon Tyne). Jnr Sect Mtg, 28 Feb 1988. [Nole] Ibid, p 143-152.

SECTION 1: CHRONOLOGICAL INDEX.

105-0000 NECIES Transaction, v 105, 1988-89, [17] pp. in 149 p.

105-0001 Presidential address: manage or die [inc. science, education & training in engineering industries]. By T. Harrison (Northern Engineering Industries plc). Read. 3 Oct 1988. [Nc.e]. Ibid. p 1-7.

105-0005 The teaching of mathematics and science in schools and the needs of the engineering profession: a discussion evening. Introduced by I.F. Beattie. N. Straker (Univ of Newcastle upon Tyne). Read. 24 Oct 1988. [Nc.e]. Ibid. p 15-18.

105-0019 The low speed diesel in British shipbuilding up to 1945. By D. Burned (Furness Wulky Ltd). Marine Engng & the North East; Historical Symp; 26 Nov 1988. Nc.e. Ibid. p 19-24.

105-0037 Energy and the environment. By I. Fells (Univ of Newcastle upon Tyne). Sir Charles Parsons Memorial Lect. [n 54]. 21 Nov 1988. [Nc.e]. Ibid. p 37-40.

105-0041 Some factors influencing the behaviour of embedded anchors [for offshore structures]. By M.A. Hesar (Boelen & Partners Ltd). R.C. Harvey; G.H. Jamnejad (Sunderland Poly). Read. 23 Nov 1988. [Nc.e]. Ibid. p 41-49.

105-0051 The maritime industries and IT [inc. artificial intelligence]. By G. Ward (formerly with BMT Ltd). Andrew Laing Memorial Lect. [n 57]. 12 Dec 1988. [Nc.e]. Ibid. p 51-57.

105-0059 Marine engineering and the North East coast: an historical symposium; 26 Nov 1988; Museum of Science & Engineering, Newcastle upon Tyne. [organised by NECIES]. Ibid. p 59-57. [see following pp. 105-0059-105-0062 & previous pp. 105-0019]

105-0059 Competition and change in marine propulsion 1900-1925. By J.F. Claxse (Newcastle Poly, retired). Historical Symp. 26 Nov 1988. Nc.e. Summary. Ibid. p 59-60. [see also previous pp. same Index No].

105-0060 Some Tyneside marine engine builders. By J.L. Buxton (Univ of Newcastle upon Tyne). Symp. 26 Nov 1988. Nc.e. Summary. Ibid. p 60-62.

105-0062 Candles to computers. Lampwick to lasers. By R.O. Thompson (Institute of Marine Engineers; formerly of Clark-Hawthorn & Co Ltd). Symp. 26 Nov 1988. Nc.e. Summary. Ibid. p 61. [see also next pp. same Index No].

105-0062 The rise and fall of the Duxford engine: some personal views. A brief history of the Duxford engine. By B. Taylor (formerly with Duxford Engines Ltd). Symp. 26 Nov 1988. Nc.e. Summary. Ibid. p 62-65. [see also previous pp. same Index No].

105-0060 The final years of the Duxford [diesel] engine. By A. Storey (formerly with Duxford Engines Ltd); E.P. Crowley (formerly with Hawthorn Leslie (Engineers) Ltd). Symp. 26 Nov 1988. Nc.e. Summary. Ibid. p 66-67.

105-0072 Personal note: Frederick Brian Tebbott. Ibid. p 72-73.

105-0075 Applications of superconductors as we approach the 21st century [inc. generators, propulsion machinery, power transmission]. By A.D. Appleton (NTI International Research & Development Co Ltd). Read. 9 Jan 1989. [Nc.e]. Ibid. p 75-84.

105-0085 Scale model testing of ships [inc. hydrodynamics]. By H. Broberg; J. Bjorklund (SSPA Maritime Consulting AB, Gothenburg, Sweden). Read. 30 Jan 1989. [Nc.e]. Ibid. p 85-96.

105-0097 Rational approaches to maritime safety. By R. Goss (Univ of Wales Coll. of Cardiff). Blackadder Lect. n 23. 27 Feb 1989. [Nc.e]. Ibid. p 97-105.

105-0100 Engineering futures: report of a discussion evening. Chaired by J.B. Caldwell (Univ of Newcastle upon Tyne). Held. 27 Jan 1989. Nc.e. Ibid. summary only. p 106-109.

105-0111 Application of statistical process control techniques to shipbuilding. By M.R. Kattan (A. & P. Applecore International Ltd). Read. 13 Mar 1989. Nc.e. Ibid. p 111-125.

105-0127 Structural analysis of marine propulsion devices [propellers & mast-shaft systems using finite elements]. By P.

Aikison (Univ of Newcastle upon Tyne). Read. 14 Apr 1989. Nc.e. Ibid. p 127-141.

106-0000 NECIES Transactions, v 106, 1989-90 [11] pp. in 145 p.

106-0007 Integrating ship design and production considerations during the pre-contract phase. By W. Ellis; J.L. Buxton (Univ of Newcastle upon Tyne). In: RINA/NECIES Mag. 23 Feb 1989. [Nc.e]. Ibid. p 7-19, 21-23. Also in: Trans RINA, v331, 1989, p 189-210; & Nav Arch. Sec.

106-0027 A revolution in materials: fibre composites. By D. Hol (Univ of Cambridge). Andrew Laing Memorial Lect. [n 58]. 20 Nov 1989. [Nc.e]. Ibid. p 27-34.

106-0042 Obituary: Allan James Marr, 7-1989. William Wilson Hunter. 7-1989. Ibid. p 44.

106-0045 Towards improved computer-aided production management systems [inc. made-to-order products]. By P.M. Braiden. C. Hicks (Univ of Newcastle upon Tyne); J.E.L. Simmens (Univ of Durham). Read. 25 Apr 1988. [Nc.e]. Ibid. p 45-48.

106-0049 The Synrolift system for dry docking ships. By J.R. Salter; D.L. Feardon; R.F. Voge (NRI Synrolift Inc). Read. 16 Oct 1989. [Nc.e]. Ibid. p 49-55.

106-0057 The design of compensators for SWATHs [stabilising devices]. By F. Caldeira-Sariva (British Maritime Technology Ltd). Read. 23 Oct 1989. [Nc.e]. Ibid. p 57-63, 65.

106-0067 Closed-cycle diesel engines as underwater power generators. By A. Fowler (Univ of Newcastle upon Tyne). Read. 6 Nov 1989. [Nc.e]. Ibid. p 67-76.

106-0081 East coast fishing boat building [in Eyemouth]. By J. Evans (Eyemouth Boat Building Co Ltd). Read. 11 Dec 1989. [Nc.e]. Ibid. p 81-84.

106-0085 A theoretical investigation into dynamics and states of chain cable lifters. By A.R.K. Zareyan (Dunlop Oil & Marine Ltd; N. Maw formerly with Sunderland Poly). Read. 15 Jan 1990. [Nc.e]. Ibid. p 85-106.

106-0107 Lloyd's Register's classification rules for fixed offshore installations. By F.H. Aikison (Lloyd's Register of Shipping). Blackadder Lect. n 24. 12 Feb 1990. [Nc.e]. Ibid. p 107-111.

106-0115 Obituary: George Yellowley, 7-1990. Ibid. p 115.

106-0117 The battleship frigate. By D.K. Brown (Ministry of Defence, retired). Read. 20 April 1990. Nc.e. Ibid. p 117-126.

106-0127 Improving productivity in a Japanese shipyard [inc. quality control]. By T. Ohno; O. Sasaki (Sumitomo Heavy Industries Ltd, Japan). Read. 21 May 1990. [Nc.e]. Ibid. p 127-137, 139-140.

107-0000 NECIES Transactions, v 107, 1991-92, [12] pp. in 161 p.

107-0001 Presidential address: engineering: historical, technical or suggestive? By J.L. Buxton (Univ of Newcastle upon Tyne). Read. 8 Oct 1991. [Nc.e]. Ibid. p 1-5.

107-0020 [Marine] Engine development at Wärtsilä Diesel. By F. Sjoberg (Wärtsilä Diesel, Vasa, Finland). Read. 5 Nov 1990. [Nc.e]. Ibid. p 9-25, 28.

107-0036 Obituary: William Spencer Paulin, 1907-1990. Ibid. p 36.

107-0044 Education for the 21st century. By G.R. Higginson (Dept of Southampton). Andrew Laing Memorial Lect. 1990 [n 59]. 3 Dec 1990. [Nc.e]. Ibid. p 41-63.

107-0045 Sinking theories: speed for choice? By G.F. Barr (Univ of Newcastle upon Tyne). Read. 28 Jan 1991. [Nc.e]. Ibid. p 45-66, 109-112.

107-0067 The future of warshipbuilding in the U.K. Introduced by P.D. Forrest (Swan Hunter Shipbuilders Ltd). Disc. evng. 19 Nov 1990. [Nc.e]. Ibid. p 67-70.

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167:0075 Towards 2000: EMD's next decade (on marine international regulations). By W.A. O'Neil (IMCO). Blackadder Lect. n 25, 4 Feb 1991. [Note] Ibid, p 75-80.

167:0081 Recent developments in oil industry project management. By O.M. Davies (BP Engineering Ltd). Read. 18 Feb 1991. [Note] Ibid, p 81-88.

167:0089 The history and development of the ports of the Hartlepool. By J.L. Hogg (Hogg Shipbuilders Ltd. Hartlepool). Read, 14 Feb 1991, Teesside Br. Ibid, p 89-105.

167:0113 The metallurgical work of Lloyd's Register. By P.E.R. Lane (Lloyd's Register of Shipping). Read. 4 Mar 1991. [Note] Ibid, p 113-122.

167:0123 Electrical drives and automation with reference to both the marine and industrial environments (inc. cycloconverters). By E.A. Lewis (Cuglex Projects Ltd, Rugby). Read. 18 Mar 1991. [Note] Ibid, p 123-131.

167:0133 Strength and vibration analysis of modern cargo stowage using the finite element method. By W. Fricke (Germanischer Lloyd, Hamburg). Read, 22 Apr 1991. [Note] Ibid, p 133-147.

167:0149 Environmental testing of marine equipment. By P.B. Wachen (Whasoe Systems & Controls Ltd). Read. 7 May 1991. [Note] Ibid, p 149-156.

167:0159 Obituary: (Capt) Herbert George Simons (Bill) Brownhill, ?-1991. Michael Chilton, 1924-1991. Ibid, p 159-160.

108:0100 NECIES Transactions, v 108, 1992. (4) pp. 1-4.

108:0005 The UK water industry: challenge of the 1990s. By J.A. Foster (Northumbrian Water Group plc). Read, 9 Dec 1991. [Note] Ibid, p 5-15.

108:0055 The importance of the science base: a chemical industry view (inc. education & training). By T.D. Culpin (Chemical Industries Assoc). Read. 27 Jan 1992. [Note] Ibid, p 55-63.

108:0059 Energy sources and future fuels. By G. Charlesworth (British Gas plc). Read. 2 Mar 1992. [Note] Ibid, p 59-63.

108:0065 An essay on design (inc. ship design). By R. Vaughan (Swan Hunter Shipbuilders Ltd). Andrew Laing Memorial Lect. n 60. 16 Mar 1992. Ibid, p 65-68.

108:0073 Obituary: John Frank Butler, c1912-1992. Ibid, p 70.

108:0079 Road transport problems: a transport engineer's point of view. By P.J. Hills (University of Newcastle upon Tyne). Read, [20 Jan 1992, Note] Ibid, p 79-85.

108:0087 North East engineering: prospects for the 21st century. A discussion evening chaired by L.L. Buxton (NECIES President; & Univ of Newcastle upon Tyne) 27 Apr 1992. [Note] Ibid, p 87-89.

108:0093 Obituary: Puddin Denham Christie, 1912-1992. Dennis Brown, c1920-1992. Ibid, p 93-94.

108:0095 Epilogue for an Institution or, prologue for a united profession (on NECIES history; engineering professional institutions; education & training; future trends). By J.H. Caldwell (Univ of Newcastle upon Tyne, retired). Andrew Laing Memorial Lect. n 61. & RINA/MarE Int. Br. M.p. 5 Mar 1992. Ibid, p 95-103.

108:0070 Index to publications of the North East Coast Institution of Engineers and Shipbuilders, 1864-1993. Compiled by R.O. Carter (Univ of Newcastle upon Tyne). Edited by L.L. Buxton (Univ of Newcastle upon Tyne; & NECIES). Published by North East Coast Engineering Trust. c1400 pp. c1300 biographies. 120 p. ISBN 0 9510266 3 0

SECTION 2: CORPORATE NAME INDEX.

How to Use the Corporate Name Index:

Arranged in alphabetical order. Includes names of corporate organisations such as limited companies, institutions, universities, and others. Entries are in the form - <corporate name> codes & cross-references. <index number>.

Consists mainly of author affiliations at the time of writing a paper, but note that many affiliations were not clearly stated in their papers. Some have been inferred from other sources and they should not be regarded as authoritative; they are marked (i) in Section 1: Chronological Index. They are included as an appropriate guide only. Changes in corporate names are given as cross-references where useful.

Organisations named after individuals are usually listed under the "surname" of the individual, e.g. "Sir W. G. Armstrong, Whitworth & Co Ltd" is listed under "Armstrong, Sir W G, Whitworth & Co Ltd". Individuals who work as consultants are listed under the heading "Consultants", and also under their personal surname in Section 3: Personal Name Index.

Organisations are also listed under their country of origin. Organisations are assumed to be British unless otherwise stated. Only British government organisations are listed under Great Britain.

Find your names. Then, by using the Index Numbers given, search for the full bibliographic references in Section 1: Chronological Index.

Corporate Names

A & P Appledore International Ltd. 091:0181, 064:X023; 105:0111
Abitot, John, & Co Ltd (Gateshead). SN: after John Abitot 018:0221.
ABS (USA). SN: + American Bureau of Shipping. BT: USA. 092:0025
Abu Dhabi Marine Areas Ltd. 076:0157
ADA. USE: Admittance Development Assoc.
ADC. USE: Aluminium Development Corp.
Admiralty. BT: Great Britain. NT: Admiralty Experiment Works (Haslar). NT: Admiralty Research Lab. NT: Admiralty Ship Welding Committee. NT: Director of Naval Construction. RT: Ministry of Defence. 018:0092; 020:0121, 024:0221, 034:0353, 035:0386; 044:0341; 069:0022; 051:0222; 061:0351; 083:0103; 086:0131; 059:0267; 073:0037; 073:0145; 073:0301, 076:0257, 077:0185; 078:0135; 081:0021.
Admiralty Experiment Works (Haslar). SN: continues as Admiralty Research Est. RT: Admiralty Research Lab. 034:0311; 058:0245; 064:0275; 065:0339; 076:0079
Admiralty Research Lab. RT: Admiralty. RT: Admiralty Experiment Works (Haslar). 088:Y005.
Admiralty Ship Welding Committee. BT: Admiralty. 052:0237, 068:0051.
AEL. USE: Amalgamated Engineering Union
Affiliation not known. SN: of c200 authors of papers.
Aker Group (Norway). BT: Norway. 090:X005.
Aluminium Development Assoc. 064:0223; 068:0221
Aluminium Development Corp. 065:0413.
Amalgamated Engineering Union. 081:0098
Amalgamated Union of Engineering Workers. 099:0037.
American Bureau of Shipping. USE: ABS
Anglo Great Lakes Corp. 077:0051.
Anglo Iranian Oil Co Ltd. RT: BP Ltd. 053:0225.
Anglo Persian Oil Co Ltd. RT: BP Ltd. 048:0155, 051:0229
Appledore-Frodingham Steel Co Ltd. SN: part of United Steel Co Ltd. BT: United Steel Co Ltd. 082:0127.

Appledore International Ltd. A & P. USE: A & P Appledore International Ltd
Appledore (Shipbuilders) Ltd. 085:0131.
ARL. USE: Admiralty Research Lab.
Armstrong. SN: after Sir/Lord William George Armstrong NT: Armstrong various corporate names. NT: Vickers-Armstrong.
Armstrong Coll (Nels). SN: 1871-1962 part of Univ of Durham. 1871-1908 previously Durham Coll of Science. 1977 continues as King's Coll (Nels) 1567 continues as Univ of Newcastle upon Tyne. RT: Armstrong. RT: Durham Coll of Science (Nels). RT: King's Coll (Nels). RT: Univ of Durham. RT: Univ of Newcastle upon Tyne. 025:0105; 024:0225, 025:0177; 026:0302; 027:0187; 032:0137; 036:0381; 037:0037; 040:0485; 042:0071; 042:0017; 043:0205; 045:0325; 046:0292; 048:0123; 048:0181; 049:0178; 052:0025; 052:0143; 053:0019; 054:0018.
Armstrong Coll (Univ of Durham). USE: Armstrong Coll (Nels).
Armstrong, Sir W G, Mitchell & Co Ltd. SN: 1882-97. Continues as Armstrong, Sir W G, Whitworth & Co Ltd. After Sir W G Armstrong & C Mitchell. UF: Easwold Shipyard & Co. RT: Armstrong. RT: Mitchell. RT: Armstrong Sir W G, Whitworth & Co Ltd. 001:0021; 402:0175, 043:0149; 003:0279; 003:0290; 007:0113; 008:0249
Armstrong, Sir W G, Whitworth (Engineers) Ltd. SN: 1928 - 052:0250.
Armstrong, Sir W G, Whitworth & Co Ltd. SN: 1857- Previously called Armstrong, Sir W G, Mitchell & Co Ltd. 1928 partly merged with Vickers Ltd. After Sir W G Armstrong, & Sir J Whitworth. RT: Armstrong. RT: Whitworth. RT: Armstrong, Sir W G, Mitchell & Co Ltd. RT: Vickers. 017:0047; 026:0031, 025:0181; 027:0017; 028:0018, 028:0229; 028:0249; 029:0047; 033:0377; 037:0033; 034:0007; 034:0283; 036:0367; 035:0003; 035:0079; 035:0355; 038:0153; 039:0303; 040:0219; 042:0023, 042:0111
Ashington Coal Co Ltd. 045:0211.
Asquith Machine Tool Corp. 080:0157.
Asquith, William, Ltd (Halifax). SN: after William Asquith. 080:0157.
Atkins Research & Dev Ltd. 090:0061.
Atlas Steel & Iron Works (Sheffield). 068:0301.
AUEW. USE: Amalgamated Union of Engineering Workers.
Austin. SN: after S + Auster. NT: Austin various company names.
Austin & Pickersgill Ltd (Sunderland). SN: 1934-1988. 1968 took over Bartram & Sons Ltd. 1977 part of British Shipbuilders Ltd. 1986 merged into North East Shipbuilders Ltd. RT: Austin. RT: Pickersgill. RT: Bartram & Sons Ltd (Sunderland). RT: British Shipbuilders Ltd. RT: North East Shipbuilders Ltd. 065:0129; 084:0087; 109:0001, 104:0007
Austin, S P, & Son Ltd (Sunderland). UF: Wear Dock Yard (Sunderland). BT: Austin. 023:0037, 024:0021, 101:0417.
Australia. BT: Countries. NT: Univ of Melbourne

B & W (Denmark). SN: + Bernsteiner & Wærn. BT: Denmark. NT: B & W various company names.
B & W Diesel A/S (Denmark). 099:0014.
B & W Ltd (Denmark). 085:0047
B & W Shipyard A/S (Denmark). 079:0391; 093:0029; 054:X007.
Babcock & Wilcox Ltd. 037:0163.
Baird Bros. 052:0069
Bangladesh. BT: Countries. NT: Bangladesh Inland Water Transport Corp.
Bangladesh Inland Water Transport Corp. RT: Bangladesh. 140:0153.
Barrow Shipbuilding Co Ltd. SN: continues as Vickers Ltd. RT: Vickers Ltd. 103:0179; 007:0159

SECTION 2: CORPORATE NAME INDEX.

Bartram & Sons Ltd (Sunderland). SN: 1828-1968. 1968 continues as part of Austin & Pickens Ltd. RT: Austin & Pickens Ltd (Sunderland). 075:0247.

Bath University. USE: Univ of Bath

BCRS. USE: British Corporation Register of Shipping.

BEAMA. USE: British Elec & Allied Manufacturers Fed.

Beardmore, William, & Co Ltd (Dalmuir). SN: 1847-1934. After William Beardmore. 042:0301; 048:0296.

Belgium. RT: Countries. NT: CeBeReNa. NT. IRSEA. NT. Univ of Ghent. 030:0053.

Bell Brothers Ltd. 017:0241.

Berlin Ship Rep'r Tank (Germany). RT: Germany. 040:0254

Berlin Tech Coll (Germany). RT: Technische Hochschule. RT: Germany. 054:0119; 054:0251.

BESA. SN: - British Engineering Standards Assoc. Continues as BS. RT: Great Britain. RT: BS1. 028:0477; 043:0269

BHRA. SN: - British Hydraulics Research Assoc. 088:0031.

BITS, Pilani (Raj) (India). RT: India. 092:0047.

BMT. SN: previously British Ship Research Assoc. SN: - British Maritime Technology Ltd. RT: BSRA. RT: NPL. (Teddington & Feltham). 102:0011; 102:X007; 103:0001; 103:0112; 104:0081; 105:0051; 106:0057.

Board of Trade. SN: continues as Department of Trade. RT: Great Britain. RT: Department of Trade. 010:0149; 021:0192; 021:0327; 022:0207; 024:0015; 024:0361; 025:0311; 026:0362; 027:0297; 028:0395; 029:0367; 030:0601; 081:0098.

Board of Trade (France). USE: France Board of Trade

Bovng & Co Ltd. 100:0087.

BP Co Ltd. SN: = British Petroleum Co Ltd. RT: Anglo Iranian Oil Co Ltd. RT: Anglo Persian Oil Co Ltd. 076:0157; 082:0017; 089:0091; 089:0095; 089:X004.

BP Petroleum Development (UK) Ltd. 090:X140.

Bremer Vulkan AG (Germany). RT: Germany. 054:0007.

Brigham & Cowan Ltd (South Shields). SN: 1876-1982. 1-77 part of Tyne Shiprepairers Group Ltd. 072:0229

Bristol Aeroplane Ltd. 062:0147

British Corporation Register of Shipping. SN: 1949 merged with Lloyds Register of Shipping. UF: BCRS. RT: Lk. 041:0031; 047:0253; 053:0151; 055:0169; 064:0135.

British Electrical & Allied Manufacturers Assoc. 070:0287.

British Engineering Standards Assoc. USE: BESA

British Gas. SN: variously called - Corp, Ltd, plc. RT: Great Britain. 093:0129; 093:0049; 108:0053

British Hydraulics Research Assoc. USE: BHRA.

British Maritime Technology Ltd. USE: BMT

British Petroleum Co Ltd. USE: BP Co Ltd

British Shipbuilders Ltd. SN: 1971-1991. Subsidiary company Marine Design Consultants Ltd. RT: Great Britain. NT: Marine Design Consultants Ltd. RT: <specific shipyards>. 094:X000; 094:X004; 096:0121; 097:X004; 097:X005; 100:0097; 100:0115; 100:0147; 100:X002; 101:0001; 101:0019; 101:0087; 102:X001; 102:X002; 103:0001; 104:0093.

British Steel Corporation. 087:0057.

British Thomson Houston Co. 017:0099

Bulfinch & Commonwealth Shipping Co Ltd. 075:0437

Brookbank, T & J, Ltd. 067:0027.

Brotherhood, Peter, Ltd. SN: after Peter Brotherhood. 106:0133

Brown Boveri Ltd. 079:0221.

Brown & Root (UK) Ltd. 100:0079

Brown-Birth Research Labs. USE: F&G Brown Research Labs (Specifics).

Brown, John. SN: after John Brown. NT: Brown. F&G <various corporate names>.

Brown, John, & Co Ltd. SN: 1847. After John Brown. 1953 formed subsidiary Brown, John, & Co (Clydebank) Ltd. NT. Brown, John, & Co (Clydebank) Ltd. 010:0047

Brown, John, & Co (Clydebank) Ltd. SN: 1953. . Subsidiary of Brown, John, & Co Ltd. RT: Brown, John, & Co Ltd. 057:0055; 071:0513; 078:0243.

Brown, S G, Ltd. SN: after S G Brown. 078:0057.

BS. USE: British Shipbuilders Ltd.

BSC. USE: British Steel Corporation.

BSE. SN: = British Standards Institution, previously called BESA. RT: Great Britain. 059:0113.

BSRA. SN: 1944-1964 called British Shipbuilding Research Association. c1964 merged with PAMETRADA Research Station to form British Ship Research Association. c1985 continues as British Maritime Technology (= BMT). RT: BMT. RT: PAMETRADA Research Station. 065:0099; 065:0217; 066:0192; 067:0205; 067:0215; 068:0051; 068:0249; 069:0045; 069:0085; 070:0134; 070:0253; 070:0343; 071:0005; 071:0163; 072:0083; 073:0197; 073:0333; 074:0115; 074:0111; 075:0057; 075:0285; 075:0331; 076:0295; 076:0229; 076:0001; 077:0345; 078:0093; 078:0161; 079:0189; 080:0101; 080:0115; 083:0047; 083:0063; 083:X007; 084:0029; 085:0061; 087:X000; 087:X005; 088:0151; 088:X005; 088:X008; 089:0121; 092:0123; 094:0253; 094:0236; 095:0177; 096:0049; 099:0087; 099:0115; 100:0011; 100:X002; 100:X005; 101:0105.

Bucknall, H, & Co (London). 034:0097

Bullen & Partners Ltd. 105:0041.

Bureau Veritas (France). RT: France. 002:0027; 011:0059; 090:0123; 100:0037; 100:X012.

Burk Gordon & Rogers Ltd. 054:0283

Burmeister & Wain. USE: B & W (Denmark).

Burns, T F, & Partners. SN: after T F Burns. 072:0229.

Burntisland Shipbuilding Co Ltd. SN: 1918-1958. 037:0059; 044:0247; 049:0171; 050:0253.

Cairn. SN: after C W Cairn & T R Cairn. NT: Cairn Line of Steamships Ltd (Noble) NT: Cairns Noble.

Cairn Line of Steamships Ltd (Noble). RT: Cairn. RT: Cairns Noble Ltd. 029:0220; 055:0083; 056:0050; 055:0105.

Cairns Noble Ltd. SN: managers of Cairn Line of Steamships Ltd. RT: Cairns. RT: Noble. RT: Cairn Line of Steamships Ltd (Noble). 034:0083; 034:0151; 035:0381; 038:0225; 040:0035.

Cambridge University. USE: Univ of Cambridge

Cameron Iron Works. 133:0055.

Cammell. SN: after Charles Cammell. NT: Cammell <various company names>

Cammell Laird. RT: Cammell. RT: Laird.

Cammell Laird Shipbuilders Ltd (Birkenhead). SN: 1953-1977 part of British Shipbuilders Ltd. 1985-1992 merged with Vickers Shipbuilders & Engineers Ltd. 092:X001; 037:0094

Cammell Laird & Co Ltd (Birkenhead). SN: 1903. formed by merger of Laird Brothers, & Charles Cammell & Co Ltd. 019:0001; 024:0151; 025:0135; 039:0007.

Cammell, Charles, & Co Ltd (Sheffield). After Charles Cammell. 1903 continues as Cammell Laird & Co Ltd (Birkenhead). RT: Cammell Laird & Co Ltd (Birkenhead). 013:0151; 018:0353.

Camps & Percy Co (London). 014:0097.

Canada. RT: Countries. NT: Canadian Pacific Railway Co. NT: National Research Council of Canada.

Canadian Pacific Railway Co (Canada). RT: Canada. 063:0071.

Cardiff University. USE: Univ of Wales Coll of Cardiff.

CeBeReNa (Belgium). SN: = Centre Belge Recherches Navales. RT: Belgium. 081:0037; 083:0013; 086:0009; 087:0083; 090:0019

Cagelec Projects (Rugby). 107:0120

Central Marine Engine Works (W. Hartlepool). USE: Gray, William, & Co Ltd

Centre Belge Recherches Navales. USE: CeBeReNa (Belgium).

Chamber of Shipping of the UK. SN: previously General Council of British Shipping. RT: CSUK. RT: Great Britain. RT: CCBS. 083:0065.

Chantiers de l'Atlantique (France). RT: France. 096:0197

SECTION 2: CORPORATE NAME INDEX.

Chapman. NT: Clarke Chapman (various corporate names).
 Charing Cross & City Electricity Co. 038:0021.
 Chemical Industries Assoc. 108:0855
 Christianen & Meyer (Germany). BT: Germany. 048:0199.
 Clapham Steamship Co. 036:0613
 Clark Hawthorn & Co Ltd. SN: after George Clark 1977-1956
 part of British Shipbuilders Ltd. Previously Hawthorn, Leslie
 (Engineers) Ltd. RT: Hawthorn, Leslie (Engineers) Ltd. BT:
 Hawthorn 096:0223, 100:0997; 105:0062.
 Clarke. SN: Clarke Chapman unrelated to Stephenson. Clarke
 Shipping Ltd. NT: Clarke Chapman (various corporate
 names). NT: Stephenson Clarke Shipping Ltd.
 Clarke Chapman Marine Ltd. BT: Chapman. BT: Clarke
 095:0127.
 Clarke Chapman & Co Ltd. BT: Chapman. BT: Clarke.
 024:0121; 057:0017; 088:0639; 073:0023; 086:0013; 087:0091.
 Clarke Chapman, John Thompson Ltd. 088:X026.
 Clark-Kincaid Ltd. 103:0072
 Coal Research Establishment. 097:0109.
 Committee of the Privy Council for Science & Industrial
 Research. BT: Great Britain. 035:0669
 Common Brothers Ltd. SN: after ? Common. 015:0373;
 080:0085. 083:0121; 089:0009; 090:0009.
 Confederation of British Industry. SN: = CBI. 090:X005;
 Consett Iron Co Ltd. SN: formerly Consett Iron & Steel Works
 UF: Consett Iron & Steel Works 003:0279; 010:0327;
 072:0137
 Consultant. SN: various personal names whose affiliation is
 given as consultant. RT: (personal names in Personal Name
 Index) 061:0107; 004:0305; 008:0039, 008:0141; 010:0103;
 012:0031; 015:0161; 019:0121; 022:0123; 023:0363; 026:0257;
 026:0531; 028:0059; 030:0218; 034:0267; 035:0237; 040:0107;
 042:0261; 045:0399; 046:0221; 047:0841; 047:0777; 050:0769;
 051:0029; 052:0379; 054:0067; 054:0227; 056:0229; 057:0133;
 062:0137; 067:0069; 084:0161; 089:0067; 097:0573; 057:0149;
 102:0173; 103:0115; 104:0019.
 Corporate names. NT: (specific organisations) eg BSRA. RT:
 Countries. RT: Personal names.
 Countries. SN: see term in this Corporate Name Index. NT: Aus-
 tralia. NT: Belgium. NT: Canada. NT: Denmark. NT: Fin-
 land. NT: France. NT: Germany. NT: Great Britain. NT:
 India. NT: Italy. NT: Japan. NT: Netherlands. NT: Norway.
 NT: Russia. NT: South Africa. NT: Sweden. NT: Switzer-
 land. NT: Turkey. NT: USA. NT: USSR. RT: Corporate
 names.
 Coventry Management Training Centre. 094:X005.
 Craggs, R. & Sons Ltd (Middlesbrough). SN: after R Craggs.
 026:0289.
 Crump Shipbuilding Co (Philadelphia, USA). BT: USA.
 062:0161.
 Crichton, William & Co Eng'rs & Shipbuilders. SN: after Wil-
 liam Crichton. 023:0125.
 Creighton-Ellstrom. 002:0131
 CSUK. USE: Chamber of Shipping of the UK
 Cunard. SN: after Samuel Cunard. NT: Cunard (various com-
 pany names).
 Cunard Steam-Ship Co Ltd. BT: Cunard 073:0321, 080:0141,
 097:0001.
 Canned White Star Line. RT: Cunard 057:0095, 064:0333

Darlington Forge. 046:0271, 051:0161.
 Delft Univ of Technology (Netherlands). UF: Delft
 Hogeschool. BT: Netherlands. 069:0277; 090:0173; 094:0117
 Delft Hogeschool (Netherlands). USE: Delft Univ of Technol-
 ogy.
 Denmark. BT: Congress. NT: B & W. NT: Hydro & Aero
 Dynamic Lab. NT: Odense Steel Shipyard Ltd

Denny, William, & Bros Ltd (Dumbarton). SN: 1840-1963
 After William Denny. 054:0289; 066:0193.
 Department of Industry. BT: Great Britain. RT: Department of
 Trade and Industry 101:0689.
 Department of Merchant Shipbuilding & Reconstruction. BT:
 Great Britain 063:0135.
 Department of Trade. RT: Board of Trade. RT: Department of
 Trade and Industry
 Department of Trade and Industry. RT: Department of Indus-
 try. RT: Department of Trade. 304:031.
 Deptford Shipyard (Sunderland). USE: Lang, Sir J. Co Ltd.
 Dickinson, John, & Sons Ltd (Sunderland). SN: 1852-1946,
 then taken over by William Duxford & Sons Co Ltd After
 John Dickinson. RT: Duxford, William, & Sons Ltd RT:
 North Eastern Marine Engineering. 1938. RT: Richardson,
 Wessinger & Co Ltd. 1946. 043:0105.
 Director of Naval Construction. BT: Admiralty 003:0293;
 051:0077; 081:0333; 075:0301.
 DNV (Norway). SN: = Det Norske Veritas = Norwegian Veritas
 RT: Norway 044:0028; 270:0045, 083:X036, 087:0103,
 087:017; 091:0171; 098:0125.
 Durkin & Co Ltd (Netherlands). 050:0171; 074:0395, 085:0009.
 Dorman Long & Co Ltd. C-7:0241.
 Duxford. SN: after Sir William Duxford. NT: Duxford (various
 company names).
 Duxford Engines Ltd. BT: Duxford. 088:0051; 092:0004;
 095:0061; 101:0065; 105:0062, 105:0066
 Duxford & Sunderland Co Ltd. SN: 1970-1985, then merged to
 form North East Shipbuilders Ltd. BT: Duxford. RT: North
 East Shipbuilders Ltd 069:0157, 082:0247.
 Duxford & Sunderland Shipbuilders & Engng Co Ltd. SN:
 1961-1970. 1961 acquired Thompson, Joseph L. & Sons. 1961
 took over Lang, Sir James, & Sons
 Duxford & Sunderland Shipbuilding Co Ltd. RT: Duxford.
 079:0229.
 Duxford, William, & Sons Ltd. SN: 1840-1955. 1946 took over
 Dickenson, John & Sons. UF: William Duxford & Sons Ltd.
 BT: Duxford. RT: Dickinson, John & Sons Ltd (Sunderland).
 003:0009, 304:0013, 012:0149, 026:0257; 036:0085; 037:0029;
 073:0309; 045:0185; 051:0481; 059:0615; 059:0168; 063:0017;
 066:0207; 066:0201, 068:0175; 070:0497; 072:0377.
 Duxford, William, & Sons (Engineers) Ltd. SN: 1956-1970
 BT: Duxford 075:0305; 078:0263, 079:0265; 080:0045
 Duxford, William, & Sons (Shipbuilders) Ltd. SN: 1955-1970
 BT: Duxford 077:0249.
 Dreyer Shipping Consultants Ltd. SN: after H P Dreyer.
 100:X056.
 Dunlop Oil & Marine Ltd. 136:0065
 Durham Coll of Science (Neth). BT: Univ of Durham. RT:
 Armstrong Col. 084:012:0141, 015:0075; 016:0065;
 019:0155, 020:0159
 Durham Univ. USE: Univ of Durham

East Bengal State Railway (India). BT: India. 008:0209
 EITB. USE: Engineering Industries Training Board
 Eiberhan Lanes Ltd. 082:0053
 Elliott Automation Ltd. 061:0213
 Elswick Iron & Steel Works. 303:0275.
 Elswick Shipyard & Co. USE: Armstrong, Sir W G. Mitchell &
 Co Ltd.
 Engineering Council. 104:0031
 Engineering Industries Training Board. SN: = EITB.
 104:0031.
 Escher Wyss Ltd. 087:0061.
 Evermouth Boat Building Co Ltd. [086:0081].

SECTION 2: CORPORATE NAME INDEX.

Fairfield Shipbuilding & Engrg Co Ltd. SN: 1852-1966. RT: Fairfields (Glasgow) Ltd. 063-0071; 078-0017.
 Fairfields (Glasgow) Ltd. SN: 1966-1968. RT: Fairfield Shipbuilding & Engrg Co Ltd. 043-X002; 085-0045.
 Fairplay International. 102-0073.
 Ferranti plc. 101-0-27.
 Fielding & Platt. 002-0091.
 Financet for Shipping Ltd. 097-X003.
 Finestleri (Italy). RT: Italy. 194-0143.
 Finland. BT: Countries. NT: Warsaw. NT: Warsaw Drees.
 Firth-Brown Research Labs (Sheffield). SN: cited as Firth-Brown or Brown-Firth. 036-0321; 058-0273; 060-0227.
 France. BT: Countries. NT: Bureau Veritas. NT: Chemist de l'Atlantique. NT: France Board of Trade. NT: Gannecot. NT: Grenelle Tank. NT: IRCN.
 France Board of Trade. BT: France. 034-0211.
 Froude. SN: after William Froude. NT: William Froude Lab.
 Fuel Movements & Transport Ltd. 082-0059.
 Furness. SN: after Sir C Furness. NT: Furness <various corporate names>. 042-0030.
 Furness Shipbuilding Co Ltd. SN: 1917-1968. 1968. part of Swan Hunter Group Ltd. BT: Furness. RT: Swan Hunter Group Ltd. 038-0349; 042-0030; 043-0289; 046-0417; 047-0021; 048-0019; 048-0159; 051-0393; 055-0029; 063-0027.
 Furness, Sir C, Westgarth & Co (Middlesbrough). SN: 1900 merged to form Richardson, Westgarth & Co Ltd. UF: Sir C Furness, Westgarth & Co. BT: Furness. RT: Westgarth. RT: Richardson, Westgarth & Co Ltd. 015-0087.
 Furness, Withy & Co Ltd. 043-0175; 105-0019.
 Gazarian (France). BT: France. 090-X000; 092-0101.
 GCBS. SN: = General Council of British Shipping. Continues as Chamber of Shipping of the UK. BT: Great Britain. RT: Chamber of Shipping of the UK. 097-X002.
 GEC Diesels. 101-0070.
 General Council of British Shipping. USE: GCBS.
 General Electric Co (USA). BT: USA. 042-0245; 062-0071; 191-0034; 100-X011.
 Germanischer Lloyd (Germany). SN: = GL. RT: Germany. 107-0132.
 Germany. BT: Countries. NT: Berlin Ship Export Corp. NT: Berlin Tech Coll. NT: Bremer Vulkan AG (Bremer). NT: Christiani & Meyer. NT: Germanischer Lloyd. NT: Gutehoffnungshaus Oberhausen/AG. NT: Hamburg Twp. 030-0311; 035-0295.
 Ghent University. USE: Univ of Ghent.
 GL. USE: Germanischer Lloyd.
 Glasgow Royal Technical Coll. SN: continues as Univ of Strathclyde. RT: Univ of Strathclyde. 014-0227; 030-0305; 037-0249; 039-0411; 041-0245; 053-0151; 065-0094; 074-0311.
 Globe Pneumatic Engineering Co (Nels). 022-0015.
 Goodwin, C S, & Co Ltd. SN: after C S Goodwin. 045-0144; 049-0081.
 Gordon, R, & Co (S. Shields). SN: after R Gordon. 017-0217.
 Gotaverket Ltd (Sweden). BT: Sweden. 078-0351; 084-0017; 092-X006.
 Gray, William, & Co Ltd (W. Hartlepool). SN: after William Gray (1823-1878), 1836-1918. UF: Central Marine Engine Works (W. Hartlepool). 003-0155; 005-0061; 005-0061; 011-0281; 014-0075; 015-0078; 016-0112; 036-0216; 044-0019; 045-0017.
 Great Britain. BT: Countries. NT: Admiralty. NT: BESA (British Engrg Standards Assoc). NT: Board of Trade. NT: British Gas. NT: British Shipbuilders Ltd. NT: BSI (British Standards Institute). NT: Chamber of Shipping of the UK. NT: Committee of the Privy Council for Science. NT: Department of Industry. NT: Department of Merchant Shipbuilding. NT: GCBS (General Council of British Shipping). NT: Manpower Services

Commission. NT: Merchant Navy. NT: Ministry of Defence. NT: Ministry of Industry. NT: Ministry of Reconstruction. NT: Ministry of Supply. NT: National Chemical Lab. NT: National Coal Board. NT: National Gas Turbine Establishment. NT: National Pacts Council. NT: NCRÉ (Naval Construction Research Est.). NT: NEL (National Engineering Lab). NT: NML (National Maritime Institute). NT: NPL (National Physical Lab). NT: Royal Navy. NT: UKAEA (United Kingdom Atomic Energy Authority). NT: <specific limited companies, institutions, universities, etc>.

Greenock Foundry Co Ltd. SN: 1-1904 (taken over by Scott's Shipbuilding & Engineering Co Ltd. 020-0231).
 Grenelle Tank (France). BT: France. 045-0025.
 Grubb, Sir Howard, Parsons & Co Ltd. SN: after Sir Howard Grubb. BT: Parsons. 057-0115; 085-0027.
 Gutehoffnungsmittel Oberhausen/AG. RT: Germany. 054-0103.

Hain-Nourse Ltd, P & O Group. 063-X001.
 Hall, J & T. 063-0205.
 Hamburg Twp (Germany). BT: Germany. 050-0275; 054-0349.
 Hamilton Fraser & Co. 008-0160.
 Harland & Wolff Ltd. SN: 1853. After Edward J Harland & Gustav Wilhelm Wolff. BT: Harland. BT: Wolff. 061-0183; 062-0271; 066-0253; 074-0041; 087-0153; 094-X002.
 Hartlepool Engine Works. USE: Richardson, Westgarth & Co Ltd.
 Havelock & Chaston Co. SN: after Robert & W Havelock. 015-0148; 018-0051.
 Hawthorn. SN: after Robert & W Hawthorn. NT: Hawthorn <various company names>. NT: Clark Hawthorn & Co Ltd.
 Hawthorn, Leslie (Engineers) Ltd. SN: 1954. , 1979. part of Clark Hawthorn Ltd. RT: Clark Hawthorn & Co Ltd. 082-0059; 088-0051; 094-0037; 095-0089; 105-0066.
 Hawthorn, Leslie (Shipbuilders) Ltd. SN: 1954-1968, continues as part of Swan Hunter Shipbuilders Ltd. 1977 part of British Shipbuilders Ltd. 076-0131; 077-0078; 078-0213.
 Hawthorn, R & W, Leslie & Co Ltd. SN: 1917-1954, den splits in 2, Hawthorn, Leslie (Engineers) Ltd & Hawthorn, Leslie (Shipbuilders) Ltd. 002-0059; 002-0151; 002-0267; 003-0167; 003-0296; 004-0151; 005-0015; 006-0175; 013-0313; 016-0013; 023-0267; 020-0417; 031-0091; 052-0005; 059-0323; 059-0592; 060-0020; 060-0517; 061-0153; 061-0145; 068-0045; 051-0017; 052-0019; 052-0193; 055-0127; 061-0169; 063-0017; 064-0017; 067-0019.
 Helmer Staabo & Co Ltd (Norway). RT: Norway. 066-0233.
 Herbert, Alfred, & Co Ltd. SN: after Alfred Herbert. 015-0179.
 Hogg Shipbuilders Ltd (Hartlepool). 107-0089.
 Holt, Alfred, & Co Ltd (Liverpool). SN: after Alfred Holt. RT: Ocean Fleet Ltd. RT: Ocean Transport & Trading Ltd. 041-0091; 066-0117; 083-0111.
 Houlder Offshore Ltd. 099-0117.
 Hull University Coll. USE: Univ Coll Hull.
 Hunter. SN: after George B Hunter. NT: Swan Hunter <various company names>.
 Hunting & Son Co Ltd. 048-0089; 061-0263.
 Hydro- & Aerodynamics Lab (Denmark). BT: Denmark. 078-0418.

IBM Ltd. 088-X015.
 ICHCA. SN: = International Cargo Handling & Coordination Association. 082-0069; 092-X006.
 ICI Ltd. UF: Imperial Chemical Industries Ltd. 059-0309; 080-0203; 081-0098; 093-0117.
 ICL Ltd. 086-X008.
 ICMS. 103-0037.

SECTION 2: CORPORATE NAME INDEX.

IESS. SN: = Institution of Engineers & Shipbuilders in Scotland. 1857- . 026:0201, 030:0321; 040:0528, 043:0284; 045:0705, 046:0389; 066:0193; 056:0194; 067:0187, 076:0001

IHI Co Ltd (Japan). BT: Japan. 097:0135, 132:0159.

IMCO. USE: IMO.

IMO. SN: = International Maritime Organisation. Previously called IMCO, Inter-Governmental of Maritime Consultative Organisation (IMCO). 096:0031; 127:0075.

Imperial Chemical Industries Ltd. USE: ICI Ltd.

Imperial Coll of Science & Tech. London. SN: previously Imperial Coll, Lendon. Part of Univ of London. BT: Univ of London. 081:0175; 087:X002

INA. USE: RINA.

India. BT: Countries. NT: BITS, Pilani(Raj). NT: East Bengal State Railway.

Institut Recherche Construction Navale. USE: IRCN (France).

Institute of Geological Sciences. 093:0091

Institute of Marine Engineers. 067:0187; 088:0051; 105:0082

Institute of Metals. 040:0223; 059:0183.

Institution of Engineers & Shipbuilders in Scotland. USE: IESS

Institution of Mechanical Engineers. 101:0075; 104:0063

Institution of Naval Architects. USE: RINA

Interig Ltd. 100:0075.

International Cargo Handling & Coordination Association. USE: ICHCA.

International Maritime Organisation. USE: IMO

International Patents Ltd. 069:0283

International Research & Dev Co Ltd. USE: IRIJCO

International Standards Organisation. USE: ISO.

Inter-Governmental Maritime Consultative Organisation. USE: IMU.

IRCN (France). SN: = Institut Recherche Construction Navale. BT: France. 076:0095.

IRSTA (Belgium). BT: Belgium. 081:0037.

ISO. SN: = International Standards Organisation. 086:0057.

Istanbul Univ (Turkey). USE: Univ of Istanbul

Italy. BT: Countries. NT: Financier.

Jones, R T, & Partners Ltd. SN: after R T Jones. 055:0093.

JAMSTEC (Japan). SN: = Japan Marine Science & Tech Centre. BT: Japan. 094:0009; 097:0135

Japan. BT: Countries. NT: IHI Co Ltd. NT: JAMSTEC. NT: Japan Navy Dept. NT: Kawasaki Heavy Industries Ltd. NT: Kobe Steel Ltd. NT: Kobe Univ of Mercantile Marine. NT: Marine Engineering Society Japan. NT: Mitsubishi Heavy Engineering Ltd. NT: Nippon Engng & Shipblng Co Ltd. NT: Nippon Kekai K K. NT: Osaka Univ. NT: Sumitomo Heavy Industries Ltd. NT: Teikoku Ship Expt Tank.

Japan Marine Science & Tech Centre. USE: JAMSTEC.

Japan Navy Dept (Japan). BT: Japan. 025:0263

Kawasaki Heavy Industries Ltd (Japan). BT: Japan. 093:0107, 094:0091; 099:0111, 101:0155.

King's Coll Nole. SN: in Newcastle upon Tyne, but part of Univ of Durham. 1962. 1871-1957 called Armstrong Coll (Nole), then Durham Coll of Science. 1983 continues as Univ of Newcastle. BT: Armstrong Coll (Nole). RT: Durham Coll of Science. RT: Univ of Durham. RT: Univ of Newcastle upon Tyne. 057:0027; 057:0175; 058:0233; 059:0039, 060:0047, 060:0101; 060:0295, 062:0249; 062:0329; 063:0183; 064:0151, 064:0359, 065:0301, 065:0413; 067:0155; 068:0603; 073:0121; 070:0320; 072:0051; 073:0029; 074:0189; 076:0050; 076:0025; 077:0391; 077:0475; 078:0445, 078:0137, 079:0295.

Kobe Steel Ltd (Japan). BT: Japan. 096:0061.

Kobe Univ of Mercantile Marine (Japan). BT: Japan. 103:X003.

Laing, Sir James, & Sons Co Ltd. SN: 1793-1969. 1961 part of Doxlar & Sunderland Shipbuilders Ltd. After Sir James Laing, JF Depledge Shipyard (Sunderland). 007:0087; 007:0325; 010:0021; 073:0449; 083:0005.

Laird Brothers (Birkenhead). SN: after William & John Laird. 1824-1953 then continues as Cannon Laird & Co Ltd. RT: Cannon Laird. 007:0353

Leeds Forge Co. 009:0399

Leningrad Shipbuilding Institute (USSR). BT: USSR. 085:0035

Leslie. SN: after Andrew Leslie (1818-94). NT: Hawthorn Leslie <various company names>.

Lewis, John, & Sons Ltd (Aberdeen). SN: 1870- . 032:0164.

Lithgow. SN: after William Ted Lithgow & James NT: Lithgow Ltd. NT: Scott Lithgow Ltd

Lithgow Ltd. SN: after James Lithgow. 1874-1967, then merged with Scots Shipbuilding & Engng Co Ltd to form Scott Lithgow Ltd. BT: Lithgow

Lithgow Propeller Tunnel. 063:0333.

Lithgows Ltd. 065:0275.

Liverpool Univ. USE: Univ of Liverpool.

Lloyd's Register; Lloyd's Register of British & Foreign Shipping; Lloyd's Register of Shipping. USE: LR.

London County Council. 022:0171.

London Underground Ltd. 102:0073.

London Univ. USE: Univ of London.

Long. NT: Duncan Long & Co Ltd.

LR. SN: = Lloyd's Register. Various previous names, including Lloyd's Register of British & Foreign Shipping (LRBFS), Lloyd's Register of Shipping (LRS). 1944 merged with PCRS but continues as LRS. LF: <various names>. RT: British Corporation Register of Shipping. 009:0291, 001:0245; 023:0035; 009:0329, 010:0287, 011:0090, 011:0209, 012:0179, 012:0221, 013:0259; 016:0089; 019:0053; 019:0229; 020:0097; 020:0121; 025:0113, 026:0029; 027:0323; 030:0331, 035:0048; 038:0031; 038:0569; 041:0287; 046:0117; 047:0197, 047:0229, 049:0221; 052:0127, 054:0153; 055:0233; 058:0205, 060:0159, 060:0087; 063:0134; 063:0267; 066:0371; 066:0194; 067:0389; 069:0337; 072:0024; 075:0359; 075:0039; 076:0248, 077:0239; 078:0091; 078:0193, 079:0189; 081:0261; 082:0215, 083:0073; 086:0093; 089:0043, 091:0143; 095:0153; 096:0031, 096:0213; 097:0007; 098:0011, 100:0179; 100:0010; 103:0099; 106:0137; 107:0113.

LRS. USE: LR

Manchester Business School. 087:X007

Manchester University. USE: Univ of Manchester.

Manganese Bronze Ltd. BT: Scots Manganese Marine Ltd (Birkenhead). 060:0259.

Manpower Services Commission. BT: Great Britain. 104:0031

MARIN (Netherlands). SN: previously called NSMH. USE: NSMB (Wageningen, Netherlands).

Marine Department, Board of Trade. USE: Board of Trade.

Marine Design Consultants Ltd. SN: subsidiary of British Shipbuilders Ltd. BT: British Shipbuilders Ltd. 133:0059; 107:0075

Marine Engineering Society of Japan. BT: Japan. 100:X003.

Marine Technology Directorate, SERC. USE: SERC.

Marlow, H & T, Ltd. SN: after H & T Marlow. 101:0183.

Massachusetts Institute of Tech (USA). USE: MIT

Maunsell, G, & Partners. SN: after G Maunsell. 072:0229.

McIntyre, H, & Co Ltd. SN: after Hugh McIntyre (1877-?) 002:0059

MDC Ltd. USE: Marine Design Consultants Ltd

Melbourne University. USE: Univ of Melbourne.

Mercantile Dry Dock & Co Ltd (Garrow). 008:0105; 012:0111; 018:0239, 035:0349.

SECTION 2: CORPORATE NAME INDEX.

- Merchant Navy. BT: Great Britain. 082:0017.
- Merchant Shipbuilding Co., Department of, U.S.E. Department of Merchant Shipbuilding & Reconstruction.
- Metz & McLellan Ltd. (A0)0463; 049:0115; 050:0127, 053:0065; 057:0221.
- Middle Docks (S. Shields). 063 E:95.
- Middletown Shipyard (W. Hartlepool). USE: Why, E. & Co Ltd.
- Ministry of Defence. SN: = MOD. BT: Great Britain. RT: Admiralty. (87)0819; 087:0037; 088:0009; 093:0031; 099:0001; 100:X001; 106:0117.
- Ministry of Reconstruction. BT: Great Britain. 094:0125.
- Ministry of Supply. BT: Great Britain. 077:0221.
- Mirrlees Blackstone (Stockport) Ltd. 108:0117.
- Mirrlees National Ltd. 084:0103; 085:X005.
- MIT (USA). SN: = Massachusetts Institute of Technology. BT: USA. 087:X003; 087:X004.
- Mitchell. SN: after C Mitchell. NT: Armstrong, Sir W G. Mitchell & Co Ltd.
- Mitsubishi Heavy Industries Ltd (Japan). BT: Japan. 104:0151; 105:X007; 101:0155.
- Mitsui Engng & Shipping Co Ltd (Japan). BT: Japan. 092:X002; 102:0357; 103:0156.
- MOD. USE: Ministry of Defence.
- Monitor Shipping Ltd. 055:0221; 040:0439; 045:0063; 045:0115.
- Morgan Crucible Co Ltd. 073:0231.
- Mountain. NT: Scott, Ernest & Mountain.
- MSC. USE: Marpower Service Commission.
- Municipal Museum of Science & Engng (Nels). USE: Museum of Science & Engng (Nels).
- Museum of Science & Engineering (Nels). SN: previously Mus of Sc & Industry. RT: Tyne & Wear Museums (Nels) 059:0256; 053:0053; 103:0071.
-
- Nagasaki Tech Inst (Japan). USE: Mitsubishi Heavy Engineering Ltd.
- National Chemical Lab. BT: Great Britain. 075:0095.
- National Coal Board. BT: Great Britain. 082:0142.
- National Engineering Labs. BT: Great Britain. 076:0183; 079:0021; 090:0077; 092:0530.
- National Gas Turbine Establishment. BT: Great Britain. 055:0085; 074:0235.
- National Gas & Oil Engine Co Ltd. 069:0317.
- National Maritime Institute (Foltham). SN: formerly N.M.I. USE: NMI.
- National Physical Lab. USE: NPL (Teddington & Feltham).
- National Ports Council. SN: = NPC. BT: Great Britain. 085:0145.
- National Research Council of Canada. RT: Canada. 088:0175.
- National Westminster Bank Ltd. 102:X005.
- Naval Construction Research Est. USE: NCRE (Dealcliffe).
- NCB. USE: National Coal Board.
- Nels. USE: Newcastle upon Tyne.
- NCRH (Dundermillner). SN: = Naval Construction Research Establishment. BT: Great Britain. 066:0031; 074:0221; 087:X005.
- NECET (1992-). SN: = North East Coast Engineering Trust. USE: NECIES.
- NECTES. SN: = North East Coast Institution of Engineers and Shipbuilders, 1885-1992. 1992 continues as North East Coast Engineering Trust (= NECT). NT: NECIES sub-sections & committees. RT: (NECTES) in Subject Index. 064:0355; 064:0343; 023:0115; 025:0047; 027:0013; 031:0171; 033:0251; 034:0050; 034:0085; 036:0311; 047:0011; 048:0121; 077:0151; 100:X000; 100:X000; 101:0145; 101:0208; 108:0084; 108:0095; 108:X000.
- NECIES Consultative Committee. 021:0027; 022:0207; 024:0019; 024:0351; 025:0311; 027:0297; 028:0395; 029:0361; 030:0601.
- NECIES Council. USE: NECIES.
- NECIES Education Committee. BT: NECIES. 019:0219; 020:0055; 024:0063; 025:0101; 046:0704; 060:0295.
- NECIES Graduate/Student/Junior Section. BT: NECIES. 020:0241; 062:0271; 063:0183; 064:0151; 065:0029; 066:0197; 067:0311; 068:0271; 069:0137; 070:0497; 071:0363; 072:0273; 073:0449; 074:0395; 075:0473; 077:0475; 078:0233; 079:0291; 080:0239; 081:0371; 082:0229; 083:X000; 086:0013; 086:0147; 086:X000; 088:X000; 090:X000; 092:X000; 094:X000; 095:0029; 096:0045; 097:X000; 098:0025; 101:0199; 102:0039; 102:X000; 103:0107; 103:0159; 104:0143.
- NECTES President & Secretary. USE: NECIES (in Subject Index).
- NEL. SN: = Northern Engineering Industries. NT: NEI various company names. 105:0001.
- NEI IRD. BT: NEI. 041:0155; 092:0111; 105:0075.
- NEI Parsons Ltd. SN: formerly Parsons, C A, & Co Ltd (licensing). BT: NEI. RT: Parsons. RT: Parsons, C A, & Co Ltd (Heaven). 096:0095; 097:0023.
- NEI Power Engineering Group Inc. BT: NEI. 103:0647.
- NEI Syccolite Inc. BT: NEI. 106:0049.
- NEL. USE: Natural Engineering Lab.
- Neptune Works (Walker). USE: Wigham Richardson, J. Ltd.
- NEL. USE: North East Shipbuilders Ltd.
- Netherlands. BT: Countries. NT: Delft Univ of Technology. NT: Netherlands Shipbuilding Co Ltd. NT: NSMB. NT: Shell Plastics Lab. NT: Stork. NT: VME/Stork Workspoor Group.
- Netherlands Ship Model Basin. USE: NSMB.
- Netherlands Shipbuilding Co Ltd. BT: Netherlands. 048:0167.
- Newburn Steel Works (Nels). USE: Spencer Newburn Steel Works.
- Newcastle upon Tyne. SN: abbreviation Nels. NT: Armstrong Col. (Nels). NT: Dorman Col of Science (Nels). NT: King's Col. (Nels). NT: Museum of Science & Engng (Nels). NT: Newcastle upon Tyne various corporate names. NT: Rutherford Col (Nels). NT: Univ of Newcastle upon Tyne.
- Newcastle upon Tyne Electric Supply Co. 056:0036; 045:0347.
- Newcastle upon Tyne Poly. SN: previously Rutherford Coll (Nels). 1992 called Univ of Northumbria at Nels. RT: Rutherford Coll (Nels). 020:0111; 100:X000; 101:0145; 102:0071; 105:0059.
- Newcastle upon Tyne Royal ... Exhibition. 093:0279.
- Newcastle & District Electric Light Co. 012:0051.
- Newport News Shipbuilding & Dry Dock (USA). BT: USA. 065:0315.
- Nippon Kogan K K (Japan). BT: Japan. 098:0075.
- NKK. USE: Nippon Kogan K K.
- NMI. SN: = National Maritime Institute (Foltham). Formerly called NPL. 1985 merged into HSRA as part of NMI. BT: Great Britain. RT: NMI. RT: NPL (Teddington & Feltham). 054:0117; 096:0189; 098:0016; 098:0121.
- Noble, W J, Co Ltd. SN: after W J Noble. NT: Cairns Noble Ltd. 021:0013; 022:0015.
- Norske Veritas Det. USE: DNV.
- North East Coast Engineering Trust. SN: = NECET. USE: NECIES (in NECET).
- North East Coast Institution of Engineers. USE: NECIES.
- North East Shipbuilders Ltd. SN: 1986-1989, formed 1986 from merger of Austin & Peckersill Ltd & Sunderland Shipbuilders Ltd. 103:0107.
- North Eastern Electric Supply Co Ltd. 062:0225.
- North Eastern Marine Engineering Co Ltd (Walker). 026:0151; 027:0127; 029:0013; 022:0229; 022:0241; 023:0079; 025:0025; 026:0153; 026:0167; 040:0528; 044:0245; 045:0093; 048:0110; 048:0135; 045:0237; 051:0443; 053:0159; 056:0097; 059:0061; 061:0019; 062:0019; 070:0913; 075:0351.

SECTION 2: CORPORATE NAME INDEX.

North Eastern Railway Co Ltd. 038:0172.
 North of Ireland Shipbuilding Co Ltd. SN 1912 (subs) of Swan, Hunter & Wigham Richardson 035:015.
 North Sands Shipyard. USE: Thompson, Joseph L. & Sons Ltd.
 Northern Engineering Industries plc. USE: NEI
 Northumbrian Water Group plc. 068:0005
 Norway. BT: Countries. NT: Aker Group. NT: DNV (Det Norske Veritas). NT: Helmer Stamsø & Co Ltd. NT: Norwegian various corporate names. NT: Sirenrenn Staal Ltd. NT: Univ of Trondheim.
 Norwegian American Line. BT: Norway. 073:0113.
 Norwegian Hydrodynamic Lab. RT: Norway. RT: Norwegian Ship Model Tank. 060:0008.
 Norwegian Institute of Technology. USE: Univ of Trondheim. (Norway).
 Norwegian Ship Model Tank. BT: Norway. RT: Norwegian Hydrodynamic Lab. 065:0047.
 Norwegian Veritas. USE: DNV.
 Nottingham Engine Works. 005:0017
 NPL (Teddington & Feltham). SN: - National Physical Lab. BT: Great Britain. RT: NMI. RT: William Frazer Lab (Teddington) 051:0294; 060:0528; 062:0015; 063:0225; 055:0111; 060:0029; 060:0209; 061:0279; 062:0025; 063:0333; 063:0345; 064:0193; 064:0289; 065:0451; 066:0180; 066:0255; 066:0417; 066:0193; 066:0194; 067:0047; 068:0155; 066:0027; 069:0345; 070:0193; 071:0122; 072:0257; 073:0035; 074:0341; 075:0255; 076:0011; 077:0167; 079:0095; 080:0017; 081:0233; 082:0255; 084:0129; 084:0145; 085:0073; 088:0031; 088:0131; 090:0031; 092:0052.
 NTPC. 077:0031.
 NSMB (Wageningen, Netherlands). SN: Netherlands Ship Model Basin. Contains as MARIN various former names including Wageningen Ship Model Basin. BT: Netherlands 054:0321; 056:0091; 056:0115; 067:0089; 070:0279; 079:0165.
 NYK (London). 027:0199.

Ocean Fleets Ltd. RT: Holt, Alfred, & Co Ltd (Liverpool) 088:0085; 102:0137
 Ocean Transport & Trading Ltd. RT: Holt, Alfred, & Co Ltd (Liverpool) 095:0145.
 Odense Steel Shipyard Ltd (Denmark). BT: Denmark 092:0003
 Open Univ. 104:0051.
 Osaka Univ (Japan). BT: Japan. 100:0093
 Overseas Containers (Finance) Ltd. 058:0095

P & O Co Ltd. SN: - Peninsular & Oriental Steam Navigation Co Ltd 013:0105; 034:0349; 069:0211; 069:0513; 070:0126.
 Palmers. SN: after Charles Mark Palmer & George Palmer. NT: Palmers various company names
 Palmers Hebburn Co Ltd. SN: 1912-1930. subsidiary of Palmers Shipbuilding & Iron Co Ltd. 1923 taken over by Vickers-Armstrongs. 061:0055; 064:0095
 Palmers Shipbuilding & Iron Co Ltd. SN: 1851-1933 subsidiary Palmers Hebburn Co Ltd. BT: Palmers. 001:0052; 002:0217; 003:0229; 003:0279; 005:0043; 014:0173; 023:0226; 023:0231; 024:0137; 029:0307; 047:0369; 049:0052; 051:0059.
 PAMETRADA Research Station (Walsend). SN: - Parsons and Marine Engineering Turbine Research and Development Association. USE: PAMETRADA Research Station (Walsend).
 Parsons Marine Steam Turbine Co Ltd. SN: 1894-1957. then taken over by Richardson, Westgarth & Co Ltd. LF: Turbine Works (Walsend). BT: Parsons. 023:0157; 026:0257; 035:0109; 035:0073; 043:0135; 049:0017; 050:0217; 051:0429.
 Parsons, C A, & Co Ltd (Heaton). SN: continues as NEI Parsons Ltd. UF: C A Parsons & Co Ltd. BT: Parsons. RT: NEI Parsons Ltd. 026:0257; 029:0025; 029:0309; 030:0325; 036:0321; 043:0099; 043:0155; 046:0260; 046:0358; 065:0365; 074:0225; 075:0225; 077:0031; 081:0069; 084:0071; 089:0031.
 Pattison & Stead Ltd. 029:0142
 Peninsular & Oriental Steam Navigat Co. USE: P & O Co Ltd.
 Personal names. NT: (personal surnames associated with corporate names) eg Parsons. RT: Corporate names. RT: (personal names in Personal Name Index). eg Parsons C A.
 Phillips Petroleum Co. 090:0004.
 Pickersgill. SN: after William Pickersgill. NT: Austin & Pickersgill Ltd (Sunderland)
 Pigrim Engineering Developments Ltd. 095:0019
 Platt. RT: Fieding & Platt
 Pollock, W. (consultants). SN: after Walter Pollock. 042:0175.
 Part of Tyne Authority. SN: previously Tyne Improvement Commission. RT: Tyne Improvement Commission. 102:0087.
 Portsmouth Poly. 087:0013
 Power Engineering Group NEI. USE: NEI Power Engineering Group.
 Power Plant Co Ltd. 040:0239.

Raddcliffe Observatory (South Africa). BT: South Africa 057:0115
 RAE. USE: Royal Aircraft Establishment.
 RANC. SN: - Royal Corps of Naval Constructors. 047:0072; 090:0035
 Readhead, John, & Sons Ltd. SN: after John Readhead. 1865-1967. then continues as part of Swan, Hunter Shipbuilders Ltd 059:0065; 077:0089; 079:0015
 Reavel Ltd (Pswych). 058:0317.
 Rederi AB Transatlantic of Gothenburg. BT: Sweden 058:0549
 Reynolds, A, & Co Ltd (Hullburn). SN: after A Reynolds 077:0011
 Ricardo Consulting Engineers plc. 100:0009
 Richardson, J Wigham, Ltd. USE: Wigham Richardson, J Ltd.
 Richardsons Westgarth Group. RT: Richardsons, Westgarth & Co Ltd. 075:0191
 Richardsons, Westgarth & Co Ltd. 1910 merged from Thomas Richardson & Sons, & Sir C Furness, Westgarth & Co Ltd. 1957 took over Parsons Marine Steam Turbine Co Ltd. UF: Harland & Wolff Engine Works. BT: Westgarth. RT: Furness, Sir C. Westgarth & Co Ltd. RT: Parsons Marine Steam Turbine Co Ltd. RT: Richardson, T. & Sons Marine Engine Works. 018:0085; 021:0192; 021:0255; 027:0051; 031:0025; 038:0241; 041:0120; 042:0225; 042:0099; 046:0029; 051:0161; 051:0500; 056:0171; 063:0027; 064:0333
 Richardson, T. & Sons Marine Engine Works. SN: after Thomas Richardson. 1909 merged with Sir C Furness, Westgarth & Co Ltd in form. RT: Richardsons, Westgarth & Co Ltd. 005:0061; 006:0115; 009:0109; 011:0012; 013:0221; 014:0269; 015:0182
 RINA. SN: - Royal Institution of Naval Architects. 1860-1959 called Institution of Naval Architects (= INA). 1960 called Royal (= RINA). 003:0279; 033:0321; 040:0517; 040:0528; 065:0193; 066:0194; 067:0181; 092:0057; 098:0075; 100:0099; 103:0071; 106:0017
 River Tyne Commissioners. USE: Tyne Improvement Commission.

SECTION 2: CORPORATE NAME INDEX.

RNLI, SN - Royal National Lifeboat Institution. 075 0473.
 Rolls Royce & Co Ltd. 0620147.
 Ropner, SN: after Robert Ropner (1828-1924). NT: Ropner various company names.
 Ropner Management Ltd. BT: Ropner. 098:0339.
 Ropner Shipping Ltd. SN, 1888-. BT: Ropner. 100:0147.
 Royal Aircraft Establishment, SN: - RAF. 075:0381
 Royal Corps of Naval Constructors. USE: RCNC.
 Royal Institution of Naval Architects. USE: RINA.
 Royal Mail Line. 063:0205
 Royal National Lifeboat Institution. USE: RNLI
 Royal Naval Coll Greenwich. BT: Royal Navy. 050:0117.
 Royal Naval Scientific Service. BT: Royal Navy. 068:0019
 Royal Navy. BT: Great Britain. NT: Royal Naval Coll Greenwich. NT: Royal Naval Scientific Service. 016:0383; 018:0095; 020:0231; 026:0351; 031:0023; 034-0369; 043:0528; 049-0029; 062:0103; 068:0133; 069:0267; 072:0021; 082:0017; 083:0063; 087:0037; 094:0143; 100:X001; 102:0123.
 Royal Society, (The), (London). 055:0033.
 Rundman, Walter, Ltd. SN: after Walter Rundman. 350:0071; 060:0039; 081:0015; 086:0109
 Russia. (R): Countries. RT: USSR.
 Rutherford Coll Nels. SN: continues as Newcastle upon Tyne Poly. RT: Newcastle upon Tyne Poly. 017:0077.

Saint (corporate names). USE: St (corporate names)
 Saint Andrews Iron Works. 033:0027.
 School of Science & Art. 014:0542; 016:0043
 Science & Engineering Research Council. USE: SERC
 Scientific & Technical Services Ltd. 088:0117
 Scott Lithgow Ltd. SN: 1957 formed from merger of Scott's Shipping & Engng Co Ltd. & Lithgow Ltd. 1977 part of British Shipbuilders Ltd. BT: Lithgow. 087 X009; 092:0047
 Scott, Ernest, NT. Scott, E. & Co Ltd (Nels). NT: Scott, Ernest, & Mountain.
 Scott, Ernest, & Mountain, SN: after Ernest Scott, & (S) Mountain. BT: Mountain. 012:0113; 023:0129.
 Scott, E. & Co Ltd (Nels). SN: after Ernest Scott. BT: Scott, Ernest. 007:0269
 Scott's Shipbuilding & Engng Co Ltd. SN: after John Scott, & sons James & Henry; Scott. 1711-1986. 1954 took over Greenock Foundry Co Ltd. 1957 merged to form Scott Lithgow Ltd. RT: Greenock Foundry Co Ltd. 038:0118; 054:0365; 061:0137
 Sealink Ltd. 086:0057.
 SEF. USE: Shipbuilding Employers Federation
 SERC. SN: - Science and Engineering Research Council. BT: Great Britain. 096:0155; 104:0031
 Sheffield University. USE: Univ of Sheffield
 Shell Plastics Lab (Netherlands). BT: Netherlands. 078:0277.
 Shell Research Ltd. 078:0277.
 Shell Tanker Co Ltd. 064:0289; 070:0377; 074:0371; 076:0361
 Shell U.K. (Oil) Co Ltd. 099:0019
 Shipbuilding Conference. SN: 1935-?. 064:0211
 Shipbuilding Employers Federation. SN: - SEF. 063:0295.
 Shipbuilding Industry Training Board. SN: - SITB. 098:0067.
 SITB. USE: Shipbuilding Industry Training Board
 Smith's Dock Co Ltd. SN: 1788-1968. SN: after T & W Smith. SN: taken over by Swan Hunter. 1969. BT: Smith. 035:0349; 045:0408; 046:0019; 049:0147; 069:0271; 072:0229; 085:0093; 100:0097.
 Soil Machine Dynamics Ltd. 102:0095
 Soudes Place Research Institute. 077:0379.
 South Africa. BT: Countries. NT: Radcliffe Observatory.
 South Shields Marine & Tech Coll. 015:0333
 Spencer Newburn Steel Works (Nels). 063:0077; 011:0165
 SSPA (Sweden). UF: various similar names. RT: Sweden. 076:0279; 087:0123; 105:0085

St (corporate names). USE: Saint (corporate names)
 Steel, W H, & Iron Co. 005:0061
 Stephenson, SN: after Robert Stephenson. NT: Stephenson Clarke Shipping Ltd. NT: Stephenson, Robert, & Co Ltd
 Stephenson Clarke Shipping Ltd. BT: Clarke. BT: Stephenson. 103:0029
 Stephenson, Robert, & Co. SN: after Robert Stephenson. NT: Stephenson. 013:0257.
 Stone Manganese Marine Ltd (Hinkenhead). RT: Manganese Ore Ltd. 083:X004; 091:0051; 093:0075; 064:0199; 100:X004.
 Stork (Netherlands). BT: Netherlands. RT: VMT/Stork Wespennor Group (Netherlands) RT: Werkspoor. 073:0273.
 Stroumen Stahl Ltd (Norway). BT: Norway. 093:0075.
 Sturtevant Engineering Co (London). 016:0017; 017:0075.
 Sulzer Brothers Ltd (Switzerland). BT: Switzerland. 044:0121; 051:0207; 062:0233; 078:0243; 082:0189; 090:0061; 094:0181; 098:0137.
 Sumitomo Heavy Industries Ltd (Japan). BT: Japan. 106:0167.
 Sunderland Corporation. 021:0153.
 Sunderland Poly. SN: previously Sunderland Technical Coll. 1992 continues as Sunderland University. RT: Sunderland Technical Coll. 094:0077; 103:0371; 104:0109; 105:0041; 106:0095.
 Sunderland Shipbuilders Ltd. SN: 1973-1988. Previously called Duxford & Sunderland Ltd. 1977-1985 part of British Shipbuilders Ltd. 1986 part of North East Shipbuilders Ltd. RT: British Shipbuilders Ltd. RT: Duxford & Sunderland Shipbuilders Ltd. RT: North East Shipbuilders Ltd. 101:0087.
 Sunderland Technical Coll. SN: continues as Sunderland Poly. RT: Sunderland Poly. 032:0194; 038:0129.
 Swan. SN: after C. S. Swan. NT: Swan various company names.
 Swan Hunter Group of Companies. RT: Hunter. BT: Swan. 075:0021.
 Swan Hunter Shipbuilders Ltd. SN: 1939-. 1977-1986 part of British Shipbuilders Ltd. 1986 privatized. 087:0009; 087:0069; 091:0079; 091:0109; 092:0009; 095:0197; 100:0077; 102:0059; 102:0123; 101:0045; 107:0067; 108:0065.
 Swan, C S, Hunter & Co Ltd. SN: 1872-1923. then merged with J Wigham Richardson to form Swan, Hunter & Wigham Richardson Ltd. After C S Swan, & G B Hunter. BT: Hunter. BT: Swan. 012:0093; 013:0013; 017:0031.
 Swan Hunter & Wigham Richardson Ltd. SN: 1903. formed from Swan, C S, Hunter & Co Ltd, & Wigham Richardson, J, & Co Ltd. BT: Hunter. BT: Swan. RT: Wigham Richardson. RT: Swan, C S, & Hunter Ltd. RT: Wigham Richardson, J, & Co Ltd. 020:0015; 023:0014; 025:0055; 021:0031; 024:0061; 028:0095; 029:0085; 033:0243; 037:0152; 038:0408; 039:0143; 039:0215; 039:0375; 016:0179; 048:0221; 050:0083; 050:0197; 051:0259; 051:0371; 022:0051; 055:0319; 057:0179; 058:0241; 062:0089; 066:0252; 068:0271; 071:0013; 072:0229; 073:0113; 074:0201; 075:0472; 076:0039; 077:0095; 077:0101; 079:0043; 082:0041.
 Sweden. BT: Countries. NT: Gotaverken Ltd. NT: Rederi AB Transocean of Gothenburg. NT: SSPA.
 Switzerland. RT: Countries. NT: Sulzer Brothers Ltd

Technical Univ of Norway, Trondheim. USE: Univ of Trondheim (Norway)
 Technische Hochschule (BTHB, Germany). USE: Berlin Tech Coll.
 Teddington Motor Car and Launch Works. 027:0232.
 Teishinsen Ship Expt Tank (Japan). BT: Japan. 064:0381.
 Thompson, Joseph L, & Sons Ltd. SN: after Joseph L. Thompson. 1845-1966. 1961 acquired by Duxford & Sunderland Ltd. RT: North Shields Shipyard. 054:0065; 065:0073; 069:0011; 079:0271; 052:0215; 059:0061; 073:0131

SECTION 2: CORPORATE NAME INDEX.

Thornycroft, SN: after Sir John J Thornycroft. NT: Wasper Thornycroft (UK) Ltd.
 Trade, USE: Board of Trade, USE: Department of Trade, USE: Department of Trade and Industry.
 Trafalgar House plc, 102.X005.
 Transatlantic A/B, USE: Rederi A/B Transatlantia of Gothenburg.
 Turbinia Works (Wallsend), USE: Parsons Marine Steam Turbine Co Ltd.
 Turkey, BT: Countries NT: Univ of Istanbul.
 Tyne Boiler Works Co (Ncle), 006:0029; 007:0219.
 Tyne Forge Co (Ncle), 001:0037.
 Tyne Improvement Commission, SN: continues as Port of Tyne Authority UF: River Tyne Commissioners, RT: Port of Tyne Authority 003:0021.
 Tyne Shiprepair Group, 097:0058.
 Tyne & Wear Metro (Ncle), 006:0095.
 Tyne & Wear Museums (Ncle), RT: Museum of Science & Engineering (Ncle), 103:0072.

UKAEA, SN: = United Kingdom Atomic Energy Authority, BT Great Britain, 072:0183; 075:0027; 075:0461

Ulster University, USE: Univ of Ulster.

Union Ironworks (San Francisco, USA), BT, USA, 021:0077.

United Kingdom Atomic Energy Authority, USE: UKAEA.

United Steam Navigation Co Ltd, 066:0023; 067:0011.

United Steel Co Ltd, NT: Appleby-Frodingham Steel Co Ltd 034:0177

Univ Coll Hull, 054:0301.

Univ of Bath, 088:X007.

Univ of Cambridge, 007:0205; 032:0199; 030:0433; 037:0255; 068:0031; 093:0127; 066:0027

Univ of Durham, SN, 1963 separated from Univ of Newcastle, NT Armstrong Coll (Ncle), NT Durham Col of Science (Ncle) NT King's Coll (Ncle) RT: Univ of Newcastle upon Tyne, 095:0113; 105:0045.

Univ of Ghent (Belgium), BT: Belgium 075:0155; 081:0037; 083:0017; 085:0029; 091:0297

Univ of Glasgow, 026:0119; 030:0151; 031:0321; 040:0528; 046:0291; 077:0197; 091:0267.

Univ of Istanbul (Turkey), BT: Turkey 069:0107; 071:0119

Univ of Liverpool, 044:0143; 050:0020; 082:0017; 089:0071.

Univ of London, NT: Imperial Coll of Sci & Tech.

Univ of Manchester, 071:0067; 074:0163.

Univ of Melbourne (Australia), BT: Australia, 054:0353.

Univ of Newcastle upon Tyne, SN: 1963 formed from King's Coll (Ncle), 1871-1963 previously part of Univ of Durham 1871-1832 called Armstrong Coll, later Durham Coll of Science, 1937-1963 called King's Coll, RT: Armstrong Col (Ncle) RT: Durham Col of Science (Ncle) RT: King's Col (Ncle) RT: Univ of Durham 078:0123; 059:0219; 030:0261; 081:0093; 081:0141; 081:0201; 081:0371; 082:0229; 083:0017; 083:0075; 083:X030; 083:X003; 081:0029; 081:0029; 081:0061; 085:0051; 085:0093; 086:0119; 087:0139; 087:X006; 088:0091; 088:X000; 088:X001; 089:0023; 089:0101; 090:0031; 090:X003; 091:0015; 091:0085; 091:0159; 091:0161; 092:0077; 092:0051; 092:0145; 093:0029; 093:0215; 092:0061; 094:0199; 094:X003; 054:X006; 095:0029; 096:0045; 096:0115; 096:0165; 097:0018; 097:0023; 097:0151; 097:X002; 098:0025; 099:0091; 099:0106; 099:0085; 099:0106; 100:0011; 100:0087; 100:0123; 100:X005; 101:0049; 101:0181; 101:0099; 102:0059; 102:0075; 102:0137; 102:X000; 103:0017; 103:0077; 103:0089; 105:0167; 104:0031; 104:0093; 104:0129; 104:0143; 105:0015; 105:0037; 105:0059; 105:0108; 105:0127; 106:0027; 106:0045; 106:0067; 107:0001; 107:0045; 108:0079; 108:0087; 108:0093; 108:X030.

Univ of Northumbria at Newcastle, SN: previous Newcastle upon Tyne Poly USE: Newcastle upon Tyne Poly.

Univ of Sheffield, 047:0109

Univ of Southampton, 107:0041.

Univ of Strathclyde, SN: previously Glasgow Royal Technical Col, RT: Glasgow Royal Technical Coll 083:X002.

Univ of Trondheim (Norway), UT: various former names: Tech Univ of Norway, Norwegian Inst of Tech, BT Norway, 056:0083; 060:0059; 066:0194; 075:0087; 076:0105; 079:0357; 100:X008

Univ of Ulster, 104:0073.

Univ of Wales Coll of Cardiff, SN: formerly UWIST RT: UWIST, 105:0097.

Univ of Wales Institute of Science & Tech, USE: UWIST.

US Navy, SN: = USN, BT: USA, 021:0077; 047:0317; 054:0415; 051:0311; 063:0215; 067:0355.

USA, BT: Countries, NT: Union Ironworks (San Francisco) NT: AIS, NT: Cramp Shipbuilding Co NT: General Electric Co, NT: MIT, NT: Newport News Shipbldg & Dry Dock Co NT: US Navy, NT: Webb Institute of Naval Arch

USN, USE: US Navy

USSR, BT: Countries, NT: Leningrad Shipbuilding Institute RT: Russia.

UWIST, SN: = Univ of Wales Ins. Sc. & Tech, continues as Univ of Wales Coll of Cardiff, RT: Univ of Wales Coll of Cardiff 097:X001

Vacuum Oil Co (London), 022:0061

Vickers, SN: after Alban Vickers, NT: Vickers <various company names> NT: Vickers-Armstrongs <various company names>

Vickers Ltd, SN: 1871-1928, previously called Harrow Shipbuilding Co Ltd, RT: Harrow Shipbuilding Co Ltd, 039:0021

Vickers Offshore Engineering Group, RT, VO Offshore 095:0049

Vickers Shipbuilding Group Ltd, 052:0217; 052:0047; 090:X002; 055:0217.

Vickers Shipbuilding & Engineering Ltd, SN: 1977-1985 part of British Shipbuilders Ltd, 1985 part of VSEL Corporation plc, 1985 took over Cammell Laird Shipbuilders Ltd, 102:0127.

Vickers-Armstrongs Ltd, SN: 1928-1965, 1928 formed by partial merger between Vickers Ltd, & Sir W.C. Armstrong Whitworth & Co Ltd, BT: Armstrong, BT: Vickers, NT: Vickers-Armstrongs <various companies>, 063:0247; 015:0263; 071:0363.

Vickers-Armstrongs (Engineers) Ltd, SN: 1958-1965, 075:0109

Vickers-Armstrongs (Shipbuilders) Ltd, SN: 1955-1965, 1977 continues as Vickers Shipbuilding & Engng Ltd, 076:0045; 077:0053; 077:0077; 080:0185; 081:0071

VMEFStork Wapenpoort Group (Netherlands), BT: Netherlands, RT: Stork (Netherlands) RT: Wapenpoort (Netherlands), 089:0029

VO Offshore Ltd, RT: Vickers Offshore Engineering Group, 101:0049

Vosper Thornycroft (UK) Ltd, BT: Thornycroft, 103:0159.

Wageningen Ship Model Basin (Expt Tank), USE: NSMB (Netherlnd)

Walker Wingsail Systems Ltd, 103:0127

Walsend Shipway & Engineering Co Ltd, SN: 1971-1977, 1977-1994 part of British Shipbuilders Ltd, 1977 part of Tyne Shiprepair Group Ltd, 001:0006; 001:0131; 002:0067; 005:0252; 013:0131; 017:0001; 017:0157; 046:0043; 048:0134; 050:0137; 051:0457; 076:0021

Wartsila (Finland), BT: Finland, 104:0143.

Wartsila Diesel (Finland), BT: Finland, 107:0019

Watson, H. & Sons Co, 013:0053

SECTION 2: CORPORATE NAME INDEX.

- Watts, Watts & Co. 066:D191.
- Wear Dock Yard. USE: Astor, S P & Son Ltd (Sunderland).
- Wearside Iron & Coal Co (Spennymoor). 067:0440
- Webb Institute of Naval Arch (USA). BT: USA. 062:0235.
100:X006.
- Weir, G & J, Ltd. SN: after G & J Weir. 014:0199; 035:0288;
062:0051.
- Welding Institute. SN = WI. 103:0523.
- Welding Research Council. SN: = WRC. 065:0699.
- Werkspoor (Netherlands). RT: Stork. RT: VMF/Stark
- Werkspoor Group (Netherlands) 040:0328; 054:0137;
065:0375.
- Westgarth. SN: after Tom Westgarth. NT: Furness, Sir C, West
garth & Lid (Midd). NT: Richardson, Westgarth & Co Ltd.
- Whessoe Ltd. 050:0165.
- Whessoe Systems & Controls Ltd. 103:0072; 107:0149.
- White Patent Oil Burning Co Ltd. 037:0209
- Whitworth. SN: after Sir Joseph Whitworth. NT: Armstrong, Sir
W G, Whitworth & Co Ltd.
- WI. USE: Welding Institute.
- Wigham Richardson, J, Ltd. SN: after J Wigham Richardson.
UF: Napier Works (Walker) 1850-1933, then continues as
part of Swan, Hunter & Wigham Richardson Ltd. BT: Swan,
Hunter & Wigham Richardson Ltd. 007:0317. 309:0253;
013:0185; 019:0073. 019:0219
- William Froude Lab (Teddington). SN: after William Froude.
? c1930. Also previously called Wilton; Froude National
Exptl Tank. Also part of NPL. Continues as NPL then NMI
then HMT. BT: Froude. RT: NPL (Teddington & Feltham).
032:0041; 036:0269; 039:0476; 092:0051; 043:0144. 046:0087;
047:0133; 048:0026; 048:0065; 049:0077; 049:0259; 050:0249;
051:0323; 052:0065; 053:0055. 054:0033; 054:0239. 054:0327;
055:0121; 055:0177. 056:0025. 057:0049. 058:0081. 059:0023
- Willy, E, & Co Ltd. SN: after Ernest Willy. 1901-1909. LE:
Middlen Shipyard (W. Hartlepool). RT: Furness, Willy &
Co Ltd. 024:0267. 305:0151; 315:0151; 017:0217; 018:0017
- Wolff. SN: after Gustav Wilhelm Wolff. NT: Harland & Wolff
Ltd.
- WRC. USE: Welding Research Council.
-
- Yarrow (Shipbuilders) Ltd. SN: after Alfred Fernandez Yarrow.
1842-1932. 1977-1985 part of British Shipbuilders Ltd
100:X006-104:0012.

SECTION 3: PERSONAL NAME INDEX.

How to Use the Personal Name Index.

Arranged in alphabetical order by surname, initials, first names, dates of birth/death, titles. Including authors of papers, abstracts and biographies. Entries are of the form: <surname> <initials> (<first names>, <date of birth> <death>, <personal titles>), <index number>

Find your names, then, by using the Index Numbers given, search for the full bibliographic references in Section 1 Chronological Index. Note that the Index Number given for abstracts and biographies may not correspond exactly to the page number where the article is published, however, the exact pagination is given in the Chronological Index. This is because several have been grouped together under a single Index Number.

Personal Names:

- Aaron P. (Paul), 196:0139.
Abel T. (Thomas), 072:0165.
Abell T. B. (Thomas Bertrand, 1880-1958, Prof), 050:0020.
Abell W. S. (Westcott Stile, 1877-1961, Sr.), 035:0048, 038:0037, 045:0325; 046:0292; 048:0121, 058:0033; 078:0151.
Abrahamsen E. (Egil), 087:0103.
Adam J. L. (John Leithman, c1884-1s54), 045:0400; 047:0395, 059:0159, 064:0139; 065:0099, 071:0129.
Adams D. (David, c1871-1948), 060:0188.
Adams H. J. (Henry John), 069:0157; 079:0229.
Adams T. C. (Thomas Galton, c1873-1924), 041:0432.
Adamson D. (Daniel, c1869-1931, Dr.), 047:0438.
Adamson D. (David, c1880-1956), 073:0147.
Addison C. (Christopher), 024:0132.
Adey A. M. (A. Michael/Mike, ?-1989), 059:0081, 096:0155.
Aertssen G. S. T. (Georgie Straphin Joseph, Prof), 075:0165; 081:0037; 085:0013; 085:0029; 087:0055; 090:0019; 093:0087; 100:0109.
Ainsie A. F. (Alexander Friderick, c1876-1948), 040:0139; 065:0151.
Ainsworth G. (George, c1850-1928), 036:0574.
Aisitt M. W. (Matthew Whelan, c15163).
Akagi S. 000:003.
Alcock W. (William, ?-1964), 080:0079.
Aldwinckle D. S. (David Shirley, 1904), 086:0119.
Alexander F. H. (Francis Herbert, 1865-1939), 019:0155; 020:0159, 023:0135; 025:0183, 056:0149.
Alexander J. L. (John Lindsay, Sr, 1920), 065:0145.
Allan A. (Archie, ?-1952), 069:0123.
Allan J. (John, c1865-1921), 038:0589.
Allan J. F. James Feggo, c1901-1957), 024:0289, 066:0193; 069:0245, 072:0257, 079:0147.
Allan J. M. James McNeal, 012:0059; 025:0115.
Allan R. L. (Robert James, c1884-1954), 044:0141.
Allan W. C. (William Campbell, c1886-1961), 078:0151.
Allen A. (Alfred, c1875-1919), 035:0534.
Allen R. W. (Richard William, 1887-1955, Sr.), 047:0032, 072:0155.
Alla L. J. (Lars Johannes, ?-1940), 061:0221.
Anderson C. 085:0087.
Anderson A. R. (Arthur Rowland, 062:0051).
Anderson J. (John), 040:0528.
Andrikanis J. P. (Joseph Paul, 1908-1962), 083:0077.
Andrew D. (David, c1841-1919), 034:0079.
Andrew J. H. 036:0055.
Andrews J. (James, c1864-1931), 014:0199, 054:0172.
Andvig T. A., 077:0427.
Annable J. J. (Jefford John, c1877-1929), 054:0149.
Anthony J. T. (John Thomas, c1881-1951), 067:0187.
Appleton A. D. (Anthony D.), 082:0111; 108:0075.
Appleton E. V. (Edward Victor, 1892-1965, Sr.), 071:0089.
Appleyard K. C. (Kelsin Charles, 1894-1967, Maj Gen), 084:0101.
Archbold W. (William, c1868-1896), 013:0269.
Archer S. (Simon, Dr), 089:0010.
Arifa T., 095:0061.
Arkless J. (John, NECHS Secretary), 102:0041.
Arkwright B. G. (Bernard George, 1861-1917), 034:0175.
Armstrong, (1863-1941), Baron of Hamburg & Craignac), 021:0013; 022:0013; 058:0161.
Armstrong A. L. (Adam Latimer, c1891-1916), 032:0225.
Armstrong E. (Ernest, ?-1952), 069:0122.
Armstrong G. (Graeme), 096:0115, 102:0088.
Armstrong G. R. (George Robt, ?-1945), 061:0221.
Armstrong R. B. (Robert Bales, c1867-1931), 047:0428.
Armstrong W. G. (William George, 1810-1900, Lord), 013:0280.
Arnell C. C. (Charles Christopher, c1881-1948), 064:0191.
Arneser K. (Karl, c1901-1948), 066:0155.
Arnison G. N. (Inr), 064:0037.
Arnold G. (George), 099:0037.
Arthur G. (Dr), 040:0131.
Arjashkov I. S. (Leonid Sergeevich), 085:0035.
Asher J. C. (Joseph Charles), 100:0071.
Atherton J. 083:0157.
Atherton W. H., 016:0151.
Atkinson A. M. (Alan Magnay, c1905-1959), 075:0175.
Atkinson F. H. (Frederick H.), 046:0107.
Atkinson H. (Harry, 1882-1917), 034:0387.
Atkinson J. A. (John Joseph, c1850-1935), 052:0139.
Atkinson P. (Pearl, 1937), 045:0127.
Atkinson R. (Robert), 076:0005.
Atkinson R. M. (Robert Mason, ?-1960), 077:0121.
Auld S. J. M. (Samuel James Murray, 1884-1963, Lt Col), 058:0113.
Auterson G. (George, c1912-1938), 074:0141.
Axhey I. H. (Ivo Haraki, c1922-1944), 060:0188.
Ayling P. W. (Peter William), 079:0331, 078:0151.
Ayre A. L. (Anna Lowery, 1885-1952, Sr), 044:0047; 049:0171; 059:0022; 061:0551; 054:0211; 068:0154.
Ayre W. (Whitby, 1890-1971), 032:0164, 037:0333, 050:0263.

Baba E. 000:0007.
Baker J. P., 083:0089.
Bacon F. (Francis Prof), 051:014.
Baggallay R. (Robert, ?-1918), 025:0574.
Bagnall T. W. (Thomas William, 1861-1907), 124:0367.
Bailey A. (Arthur, c1936-1953), 070:0109.
Bailey C. H. (Charles Henry, 1847-1909), 023:0295.
Bailey R. W. (Richard William, 1855-1957, Dr), 066:003.
Bain D. C. (Lt Col), 028:0021.
Bain J. James, c1841-1922), 038:0589.
Bainbridge E. P. (Edgar Paul, 1908-1964), 081:0107.
Bainbridge T. L. (Thomas Lindsay, ?-1915, Lieut), 031:0205.
Balnes G. H. (George Henry, c1844-1913), 011:0281; 017:0051, 029:0374.
Balrd G. (George, c1842-1948), 052:0080; 054:0222.
Baker G. P. (Ernest for col. Eng-1), 020:0251.
Baker C. S. (George Stephen, 1877-1s49, Dr), 032:0641, 036:0259, 039:0470, 042:0051, 045:0144, 046:0085, 051:0305, 054:0033, 054:0234, 055:0025, 057:0049, 058:0023, 061:0279, 066:0190.
Baker J. F. (Prof), 057:0255; 068:0031.
Bald G. C. B. (George Christopher Brian, c1908-1945), 062:0166.
Balard M. (Maurice), 099:0085, 051:0152.
Bald R. M. (Robert Minford, c1907-15:06), 057:0140.

SECTION 3: PERSONAL NAME INDEX.

- Bannerman-Phillips H. (Maj) 021 0050.
 Barford J M. (Jens Magnus). 079:0391.
 Bari A. (Abdullah). 1952-). 100:0153.
 Barker F H. (Francis Henry, 1865-1922, Sir). 038:0549.
 Barker H R. (Harold William, c1905-1954). 071:0129.
 Barnard R. (Robert, ?-c1901). 018 0355.
 Barnes H. (Henry, c1862-1959). 076 D101.
 Barrett K D. (Kenneth Deimar, ? 1925). 342 0588.
 Barrillon E G. 045:0025.
 Barringer H. (Herbert, c1856-1932). 049:D179.
 Barry M J. 091 X054.
 Barry R. (Ralph, c1868-1947). 053:D235.
 Barting W. (Capt). 025:0249.
 Barratt W N. (William N., 1862-1923). 040:0547.
 Bateman J. (John, ?-1915). 052:0525.
 Bates A G. (Austin Graves, 1891-1961, Lt Col) 057:0027; 079:D152.
 Batey F. (Frank, c1881-1948). 064:0291.
 Batey J L. (John Leslie, 1890-1962). 052:0193; 079:D159.
 Batey J T. (John Thomas, 1862-1931). 051:0017, 052:0019 067:D189.
 Batey R P. (Robert Fenwick, c1905-1953). 080:0079.
 Batho W T. (William Thompson, c1867-1924). 050:0172.
 Batten B K. 077 0293; 079:0189.
 Baxter B N. (Brian Newbold, 1915-). 104:0019.
 Bayles H. (Henry, c1878-1941). 057:D140.
 Beak K H. (Kenneth Henderson, c1879-1959). 075:D175.
 Beattie D H. 055:0127.
 Beattie J F. (John). 105:0015.
 Beatty, (David, 1871-1936, Earl, Adm. Fleet). 052:D137.
 Beach P. 082:X003.
 Beckingham C W. (Clive Walter, c1878-1954). 071:D129.
 Beckwith L. (Leslie). 093:0145.
 Bedford F G. (Frederick Gordon, ?-1964). 081:0107.
 Beck A R. (Alexander Ross, 1920-), Sgt. 087:X000; 092:007.
 Bell A G. (Arthur G.) 080:0115.
 Bell G T. (George Thomas, c1902-1941). 060 D189.
 Bell H. (Hugh, 1844-1931, Sir). 047:0425.
 Bell J. (John, c1909-1959). 076 D101.
 Bell W. (William). 010:0219.
 Belsay W J. 042:0249.
 Belyasin P. (Paul, c1886-1947). 038 0405; 029:0575; 064:0151.
 Benedict J D. 059:X057.
 Bengough G D. (Guy Darston, 1876-1945, D). 040:0023, 059:0183.
 Benson F W. (Francis Walter, ?-1952). 051:0566; 061:0157; 069 D173.
 Benson R C. (Ronald Carey). 065-0515.
 Berg E. (Evel) 042 0249.
 Berg T H A. (The. Gustaf Alexander, c1897-1951). 067:D159.
 Bergson M. 028 0127.
 Bergstrom G. 005:0135; 006:0215; 008:0231.
 Berntson A E. (Algeron B). 030:0200.
 Berry I. W. (Leonard Walker). 063:0133.
 Berry W J. (William John, 1845-1937, Sr) 053 D173.
 Bescolty J B. (John B.). 092:0077.
 Bigge C W. (Charles Wilcoxon, 1858-1916). 034 0279.
 Biles J H. (John Howard, 1854-1932, Sir) 026:0119; 060:0152; 030:0751; 040:0525.
 Billetp A A C. (Adelph Anthony Christian, c1888-1931) 049:D179.
 Billetp T C. (Theodor Christian, c1852-1931). 013:0053, 047:0458.
 Bindeshell S C W. (Severn Claudius Wilkin, c1857-1924) 041:0052.
 Bingham J E. (John Edward, 1899-1915, Col. Sr) 052:0525.
 Binns A B. (Aubrey Brian, c1875-1956). 075:D148.
 Bird A J. (Augustus John, c1883-1949). 065:D151.
 Bird T G. (Thomas Griffin, c1872-1945). 061 D221.
 Birks J. (Jack) 109:0101.
 Bisset W T. (William Turner, 1877-1928). 045 0474.
 Bittleston W H. (?-1891). 007 M044.
 Bjorklund J. (Jan). 035:0085.
 Bluchford N. (Nicholas, c1870-1941). 057:D140.
 Black I M. 068:0132.
 Black J G L. (Joseph Gavin Landels, c1921-1959). 073-D175.
 Black M. 081:0125.
 Black T. (Thomas, c1851-1929). 036:0574.
 Black W. (William, 1823-1905). 021 0335.
 Blackadder W F. (William Francis, 1913-). RT: Blackadder
 League (in Subject Index). 080:0239; 081:0015.
 Blackburn P. (Persival, c1890-1960). 077 D121.
 Blakeley T H. (Dr) 075 0231.
 Blakey G W. (George William, c1874-1958). 075:D175.
 Blackynden A. (Alfred, c1849-1897). 003:0179; 007:0179.
 Blase C. (Charles, c1870-1951). 068:D164.
 Blaxie C D. 073:0063.
 Boardman R. (Robert, c1886-1966). 048:0159; 055:0029; 082:0033.
 Boater H. (Harry, c1877-1959). 056 0241, 075 D131.
 Bodin L M. (Laurez M., ?-1917). 023 0295.
 Boggis A G. 057:0155.
 Bond W A. (William Arthur, 1871-1938, Prof.). 029:0191.
 Bonchucker I W. (Ian William, Prof.). 067:0277, 070:0475.
 Bonney P M. (Peter M.) 103 0025.
 Bourne A. (Alfred, ?-1947). 063:0235.
 Bunny A D. (Arthur Douglas, c1899-1958, Cdr). 073:0253.
 Booth J W. (John William, 1847-1905). 019:0253.
 Booth S. 050:0187.
 Bottomevan W C. (W. Jay Cannon). 016:0115.
 Bouschart L F G. (Leonard Francois Gerard, ?-1951). 068 D' 64.
 Brearley G S. 090:0111.
 Bottomley G B. 049:0297.
 Bottomley W T. (William Thompson). 049:D115; 050:0137; 053 0065; 057:0021.
 Boudet R. (René). 092:0101.
 Bowden A T. 069:0197; 075:0225; 077:0031.
 Bowen I G. 071:0009.
 Bowen R. (Robert, c1868-1932). 049:0179.
 Bow E. (Edward, c1860-1938). 005:D167.
 Boyd W. (William, 1839-1919). 001:0503; 002:0007; 006:0233; 335 0574.
 Brackenbury H L. (Hereward Penton). 043:0099.
 Braddy H J R G. 075:0135.
 Bragg L W. (Lawrence William, 1893-1971, Sir). 055:0033; 060 0299; 062 0025.
 Braiken P M. (Paul Mayn, Prof.). 105:0045.
 Braithwaite J C. 079 0149.
 Brammell W T K. (Dr). 045:0211.
 Breckon L F. (Lancelot Fowler). 043:0295.
 Brigham E R. (Edward Ronald, c1898-1959). 075:0148.
 Brims C W. (Charles William, ? 1946). 061 D221.
 Brims D N. (David Nicholas, 1851-1912). 024:0403.
 Briner M L. (Max) 094:0181.
 Brinkhurst J. (John) 102:0087.
 Bristol (Marguis of), USE: Harvey F W F.
 Broberg H. (Harv) 105 0085.
 Brock H W. (Henry W, 1859-1906). 022:0217.
 Brockat J. (John, 1835-1887). 003 M023.
 Bronie G. (Gordon, c1877-1956). 053:D173.
 Brook A K. (A. Keith). 103:0215; 104 0083.
 Brooke S J. (Stephen John, 1955-). 104:0093.
 Brookfield J W. (John Walter, c1879-1947). 064 D142.
 Brotherton J. (James, 1858-1925). 037 0287.

SECTION 3: PERSONAL NAME INDEX.

- Brown A. H. (Anthony Holland, c1902-1941, Lt Col E). 660:D166.
- Brown D. (Dennis, c1920-1992). 106:0045; 108:0094
- Brown D. G. (David Gardner, c1899-1963). 079:D159.
- Brown D. K. (David K.). 000:X010; 106:0177.
- Brown D. M. (David McCutcheon, c1879-1939). 076:D103
- Brown D. S. (David Somers, c1877-1950). 067:D190.
- Brown G. M. (George Matthews). 017:0099
- Brown H. A. (Harold A., c1878-1968, V-Admiral Sir). 064:0158.
- Brown J. (James, c1862-1941). 057:D146.
- Brown J. S. (John S.). 044:0285
- Brown R. (Robert, c1923-1991, Lt Col). 057:D143
- Brown T. S. (Thomas Sealie, c1886-1952). 069:D124
- Brown T. T. (Thomas Thompson, ?-1955). 071:D151.
- Brown T. W. F. (Thomas Walter Falconer, Dr). 055:0127; 056:0021; 055:0117; 056:0315; 072:0373; 071:0427.
- Brown W. (Walter, c1878-1934). 051:0192
- Brownhill H. G. S. (Herbert George Smeester 081), ?-1951) 107:0159.
- Browne R. C. (Benjamin Chapman, 1839-1917, Sir). 0:5:0113; 016:0013; 033:0072
- Bruggemann H. S. L. (Hermann Stephanus Lambertus, c1931-1959) 076:D162.
- Bruhn J. (c1899-). Dr. 064:0029
- Brunton E. C. (Ernest Cameron, c1887-1958). 075:D175.
- Bryers C. (Charles, c1874-1947). 060:D189
- Buchanan G. (George, c1872-1937). 064:D232
- Buchanan G. (George, ?-1952). 066:D165.
- Buchanan S. (Samuel, ?-1921). 018:0589
- Bull F. B. 067:0237
- Bull J. C. (John Cathartes, 1859-1912). 024:0403.
- Bull J. H. R. (CJr). 072:0021.
- Bullivant F. A. (Frederick Arthur, ?-1925). 041:0432.
- Bulmer J. (John, 1834-1903). 020:0267
- Bunney A. (Andrew). 103:0159
- Bunnie J. B. (John Bernard, 1930-). Dr. 060:0699.
- Bunyan T. W. (Thomas Walter). 068:0513; 095:0019.
- Burgess N. B. (Neville Henry, c1880-1960). 065:0193; 076:0109.
- Burkhardt J. E. (John Ernest, c1897-1954). 071:D151.
- Burn N. F. (Norman Festen, ?-1945). 061:D221
- Burn W. S. (Walter Scott). 030:0505; 038:0241; 042:0325; 045:0029; 051:0141; 056:0171.
- Burnett J. E. (Jacob Edward, ?-1964). 060:D179
- Burnett N. (Norman 1856-1919). 036:0574
- Burns T. F. 072:0229
- Burrell D. (David). 105:0119.
- Burrill L. C. (Leonard Constantine, 1905-1955, Prof). 096:0179; 051:0259; 060:0269; 062:0249; 065:0261; 067:0155; 070:0121; 072:0057; 075:0025; 077:0475; 078:0325; 079:0295; 081:0141; 081:D107
- Burston A. F. (Aubrey Frederic, c1902-1984, Prof). 104:0137; 054:0357; 080:0261; 085:0051; 101:0045
- Bushell C. A. (Charles Andrew, 1842-1908). 025:0321
- Bushell T. W. 068:0277.
- Bustard E. E. (Ernest Edward) 057:0179.
- Butler G. 070:0095.
- Butler J. F. (John Frank, c1912-1992). 088:0015; 102:0070
- Butterwick W. T. (William Tom, 1888-1969). 063:0027; 085:0088.
- Buston I. L. (Ian Lynn, 1937, Dr). 065:0091; 102:0085; 105:0060; 106:0187; 107:0501; 108:0087; 108:X000.
- Buxton J. L. (John L.). 140:0179.
- Byrne J. A. R. (Louis Alan Romaine, c1926-1955). 072:D155.
- Cairns C. W. (Charles Walter, c1873-1951). 029:0220; 034:0083; 034:0151; 036:0281; 041:0325; 067:D190.
- Cairns J. A. 094:X032
- Cairns T. R. (T. Russell, 1882-1963, Maj). 051:0018; 056:0020; 056:0195; 091:D110.
- Caldeira-Saraiva F. (Fernando) 106:0057.
- Caldwell J. (James, 1897-c1982). 039:0145; 044:0121; 057:0207; 062:0283; 072:0261; 099:0365.
- Calwell A. (Alan, c1890-1932). 069:0124.
- Calwell J. B. (John B., 1976, Prof). 086:0301; 093:0039; 105:0108; 108:0095.
- Cameron D. (Daniel, c1874-1936). 052:D173.
- Cameron H. 002:0235.
- Cameron H. R. (Hugh Robert, c1874-1923). 036:0576.
- Cameron R. R. G. (Robert R. G.). 087:0153.
- Campbell J. A. (James Allan, c1878-1925). 041:0433
- Campbell J. J. (J. Jennings). 088:0069.
- Campbell J. M. (John McLeod, 1841-1903). 019:0235
- Campbell M. (Mungo, 1901-1983). 165:0023; 066:0027; 067:0011; 099:0113.
- Campbell R. S. (Robert Stanley, c1885-1931). 067:D191
- Campbell T. L. (Thomas Louie, c1924-1984). 071:D132.
- Campion A. (Fred). 030:0526; 031:0546; 042:0201
- Camps H. E. J. (19:0097; 051:0547.
- Campy D. W. (Derrick William) 059:0115
- Carek G. (George). 090:0035
- Carew A. (Dr). 058:0109.
- Carnegie A. Q. (Alfred Quintan, c1875-1944). 050:D172.
- Carozzi J. L. (Joseph Louis, c1880-1933). 049:D175.
- Carr G. V. (Gordon V.) 102:0087
- Carshaw W. H. (William Henderson, c1894-1958). 075:D176
- Carstairs R. 061:0223.
- Carter G. J. (George John, 1862-1922, Sir). 088:0589.
- Carter G. M. (George Murray, c1895-1945). 061:D222.
- Carter N. (Norman, ?-1979). 065:0731; 073:0113; 074:0149; 075:1045; 087:0238
- Carter R. O. (Richard Owen, 1951-). 106:X000
- Cartwright A. (Alfred, c1915-1987). 078:D157
- Cartwright A. B. (Alfred Bruce, c1873-1940). 046:0057.
- Casbourne C. B. (Charles Basant). 036:0095.
- Catley D. (Donald). 093:0049
- Catto J. (John, c1868-1912). 058:D161.
- Catto J. (John, c1901-1914, Lt Col). 061:D222.
- Cave F. E. (Francis Edward, c1846-1909). 010:0103; 011:0091; 018:0161; 021:0335.
- Chadborn J. E. (John). 083:X003; 089:0121.
- Chadburn W. R. (William Roy, c1896-1957). 174:0141
- Chambers G. H. (George Hudson, Prof). 074:0189; 082:0229.
- Chambers H. H. 077:0279
- Champruss E. C. (Edward Connor, c1853-1917). 033:0272.
- Champruss E. L. (Edward Leslie, ?-1978). 047:0238; 047:0389; 079:0052; 081:0053; 091:0065; 164:0063; 060:0141
- Champruss E. T. (Eric Trevor, 1890-1916, R. S. M. Lt). 042:0409
- Chapman E. B. (Edward Brooke, c1875-1927). 045:0299
- Chapman J. C. (8:0175
- Chapman J. K. (James Kennedy, c1861-1925). 142:0388.
- Chapman K. R. (Kerrie-J. Ronald, 1939-). Dr). 081:0271; 083:0051; 100:0097
- Charlesworth A. S. 083:X007
- Charlesworth G. (Glyn). 108:0059.
- Charlton F. J. (Francis J., ?-1908). 104:0332
- Charlton H. (Henry, 1833-1903). 019:0233
- Charlton R. B. (Ray Herbert, ?-1948). 064:D192.
- Charlton T. M. (Thomas M. Taylor) 055:0029; 071:0067; 074:0163
- Chaston E. C. (Edward Cameron, c1859-1923). 015:0149; 018:0051; 040:0547.

Caslick W. A. (William Aphanus, c1882-1930). 147:0458

SECTION 3: PERSONAL NAME INDEX.

- Chesley N R. (Norman Roger, 1929-) 101:0148.
 Chumereau A. 096:0397.
 Cheng P. (Peter, 1935-). 106:0109.
 Chilton H. (Harry, c1919-1960). 077:D121.
 Chilton J. (Joseph). 027:0267, 035:0109.
 Chilton J P. 061:0281.
 Chilton M. (Michael, 1924-1991). 107:0159.
 Chipchase R S. (Robert Stanley, c1887-1971. L1 2). 087:0170.
 Churton A B L. (Alan Ernest Leofric, 1874-1948). 039:0055.
 Chowdhury P C. 091:0015.
 Christenson P J. (Peter John, 1962). 132:0133.
 Christensen C P. (Christian Frederik, c1883-1964). 047:0124, 352:0024; 081:D116.
 Christianson W A. 048:0399.
 Christie C. (Charles, c1890-1922). 038:0593.
 Christie D. USE: Denham Christie.
 Christie T. (Thomas). 087:0019.
 Church J E. (John Edward, c1915-c1993). 099:0039; 103:0041.
 Clark E A. (Edward Arnold, c1885-1977). 045:0299.
 Clark E E. 085:0137.
 Clark G. (George, 1842-1901). 017:0255; 051:D173.
 Clark H [T H]. (James) Henry (Havelock), c1858-1953). 070:D199.
 Clark L J. (Leslie J.). 093:0049.
 Clark W J. (1847-1887). 005:M023.
 Clarke D. (David, 1958-. Dc). 099:0087.
 Clarke E F. (Edward F.). 025:0051.
 Clarke J F. (Joseph F.). 105:Y007, 101:0145, 103:0071, 105:0059.
 Clarke W. (William, 1831-1895). 006:A092.
 Clarkson J. (John). 073:0145, 074:0021.
 Clayton J A. 082:X004, 100:X004.
 Cleff P H. (Peter Herbert). 077:0227.
 Cleghorn A. (Alexander, c1861-1922). 033:0592.
 Clements R E. (Robert E.). 073:0197, 074:0115.
 Clemmetsen O M. (Oscar Mitchell, 1921). 097:0001.
 Clerk D. (Dagali, Dc). 035:0411.
 Clothier H W. (Harry William, 1872-1978). 054:D232.
 Clouston J C. (John Claver, c1875-1947). 054:D192.
 Cluff O R D. (Omer Richard Dale, c1901-1980). 077:D122.
 Coats R. (Robert). 081:0105.
 Coatsworth H M. (Harry Mitchell). 059:0093.
 Cochran A H J. 035:0479.
 Cochran C A. (Cecil Algernon, 1869-1960. Sir). 077:0122.
 Cochran E L. (Edward Luit, c1892-1955, V. Admir.). 075:D103.
 Cockburn G B. (George Barr, ?-1957). 069:0174.
 Cockcroft J D. (John Douglas, 1897-1967, Sir). 045:0027.
 Cohen E A. (Edward Arthur, 1849-1916). 032:0125.
 Cohen W M. (William Margreux, c1869-1958). 054:D232.
 Coleman F C. (Frederick Charles, c1879-1935). 051:D192.
 Collen L T. (Lars Thebjorn). 076:0051.
 Collingwood F V. (Frank Vincent, ?-1941). 058:D161.
 Collins D F. 071:0257.
 Colvin D D. (Cliver Dyett). 063:0215.
 Common B E. (Brian Elton). 089:0085.
 Common J W. (John Walford, 1921). 089:0009.
 Conn J F C. (John Farquhar Christie, 1901-1995, Pres.). 077:0107, 091:0167.
 Conn R D. (Robert Baldwin). 095:0051.
 Connolly W B. (William Bernard, c1911-1941). 058:D162.
 Connor F P. (Frederick Percy, c1950-1951). 068:D155.
 Constant H. (Haynes). 069:0111.
 Constantine R. (Robert, c1889-1948). 064:D192.
 Constantinescu C. 040:0111.
 Cook F J. 056:0166.
 Cook R F. (Robert Farquhar, ?-c1961). 085:0120.
 Cook R T. (Robert Thomas, c1892-1945). 062:D222.
 Cook S S. (Stanley Smith, c1815-1952). 043:0155; 046:0040; 065:0065; 068:D165.
 Cooke C H. (Charles Herbert, c1858-1950). 067:D192.
 Cooke J. (John, ? 1916). 033:0293.
 Cooper I C G. 036:0138.
 Cooper J M. (John Menzies, c1893-1959). 067:D182.
 Coote A. (Arthur, 1841-1906). 022:0217.
 Corlett E C B. (Ewan Christian Brew, Dc). 065:0051, 058:0221; 091:0273.
 Corlett E W. (Ernest William). 053:0137.
 Curt A J C. (Andrew John Constanine, 1962-). 101:0199.
 Cury J. (John, c1855-1931). 044:0206.
 Couchman A J. (Alexander Angus Cook). 079:0189.
 Cault T B. (Thomas Barkhead, c1892-1951). 068:D165.
 Courter-Dunton W T. (c1898-1903). 020:0067.
 Croves H A. (Harry Augustus, c1876-1937). 053:D173.
 Cowan M C. (Malcolm Colquhoun, c1899-1951). 064:D196.
 Cowan W. (William, c1879-1925). 041:0433.
 Cowans N B. (Norman Balfour, ?-1963). 079:D160.
 Cowens W K. (William Edward). 015:0221.
 Cowper A H. (Alexander Bruce, c1921-1941). 058:D162.
 Cowper W B. (William Binas, c1893-1946). 063:D235.
 Cox H L. 066:0192.
 Crages E H. (E. Hall). 024:0389.
 Craig G D. (George Duncan, c1924-1949). 066:D196.
 Craig J. (John, 1874-1946). 055:0149.
 Craig R. (Robert, 1842-1911). 024:0401.
 Crencher D W. (Donald William). 069:0155.
 Craven C W. (Charles Worthington, 1884-1944. Cdr. Svc.). 061:D222.
 Crawford T. (Thomas, 1825-c1909). 025:0023.
 Crexis A. 099:0049.
 Crosby N. (Nicholas). 100:0057.
 Cross W. (William). 012:0021.
 Cronry E P. (Eugene Porter, 1925-). 062:0059; 088:0051; 094:0027, 095:0409, 100:0027, 105:0066.
 Cronin H. (Henry, c1878-1924). 040:0547.
 Crozer T W. (Thomas William, c1873-1944). 061:0223.
 Culpin F D. (F. David). 109:0055.
 Cuthning G P. (George Paterson, c1872-1939). 055:D167.
 Cumming W. (William, 1837-1914). 031:0626.
 Cummins W R. (William Russell). 007:0047; 009:0233; 012:0185, 021:0031.
 Cunningham A. (Andrew, 1883-1961, Adm. Flt. Vise. Hydrogr.). 075:D166.
 Curchin H W. (Henry Wallace, c1878-1934). 040:0187; 051:D192.
 Currie G W. (George W., ? 1962). 073:0160.
 Currie R M. 085:0207.
 Cury A E. (Arthur Edward, ?-1905). 010:0199.
 Cutland R S. 069:0245, 072:0257, 074:0341.
 Cutler M H. (Maurice Harold, ?-1920). 036:0574.
-
- Dalhiring G S. 084:0317.
 Dalton A D. (A. David). 047:0109.
 Dale C B M. (Charles Brock McKinnon, c1895-1956). 073:D148.
 Dale S. (Stanley, c1911-1957). 073:0145.
 Daniel F J. (Francis James, c1881-1923). 029:0676.
 Daniel R J. (Robert J., 1920-). 093:0031.
 Darling H. (Henry, c1860-1931). 046:0457.
 Darling R F. (Robert F.), 069:0127; 073:0131.
 Darling S J. (Sydney James, c1886-1941). 058:D162.
 Davidson J. (Joseph, c1890-1943). 060:D189.
 Davidson S A M. 067:0015.
 Davies J A C. (John Arthur Caswell, c1884-1929). 045:0434.

SECTION 3: PERSONAL NAME INDEX.

- Davies J. B. (John Burton). 101:0208
 Davis A. (Alfred, ?-1948). 064:D193
 Davis A. W. (Allen William, Dr) 063:0571, 078:0517.
 Davis V. O. (Vivyan Oswald, c1885-1918). 034:0182.
 Davison J. (Joseph, 1830). 101:0348; 103:0071.
 Day J. G. (Jason Graham, 1933-). Sir? 162:X101
 De Cambre R. 081:0037; 083:0015; 086:0099, 087:0083; 090:0619
 De Russett F. W. (Edwin William, c1841-1921) 026:0093; 033:0243; 037:0449.
 Delport T. F. A. (Theodore Felix Albert, 1851-1932). 044:D296.
 Denham R. F. (Richard Ernest, c1941-1952). 079:D161.
 Denham Christie C. J. (Charles John, 1831-1905). 091:0535.
 Denham Christie J. (John, c1850-1901). 051:0311; 067:D191.
 Denham Christie P. (Peter, 1912-1992) 075:0473; 077:0085; 092:0095; 108:0099.
 Denholm-Young J. (John, 1864-1935). 007:0123; 016:0011; 017:0051; 019:0151; 023:0063; 045:0053, 045:D180.
 Denness B. (Bruce, Prof) 069:0091
 Denny A. (Archibald, 1862-1935, Sir). 152:D139
 Denny M. E. (Maurice Edward, 1886-1955, Sir). 066:D193.
 Denny P. (Peter, 1852-1917). 034:0382
 Dent A. (Alan, ?-1963). 080:D050
 Derry L. D. (Leonard David, ?-1952) 059:0174
 Desch C. H. (Dr) 055:0111.
 D'Eyncourt, USE: Tennyson D'Eyncourt.
 Dick C. (Creighton, c1901-1954). 073:D199
 Dick J. W. (Fritz Wesley, ?-1909) 034:0322
 Dick W. H. (William Henry, c1881-1940, Maj). 056:D149.
 Dickie J. (James, c1847-1922). 021:0077; 058:0593.
 Dickie J. (James, c1843-1924) 140:0547.
 Dickinson A. (Alfred, c1878-1925) 031:0433
 Dickinson F. T. (Frederick Thomson, c1864-1926). 045:0299
 Dickenson J. (John, ?-1917) 033:0295
 Dickenson T. (Thomas, ?-1952). 064:D125
 Dickson R. E. (Richard Elliot, 1843-1895) 012:0243
 Dieudonne J. E. P. (Jean Eugene Pierre). 076:0295
 Dimmock W. 039:0032.
 Die W. (Walter, c1857-1926) 043:0301
 Dixon H. R. (Harold Raydon, c1873-1950). 056:D196.
 Dixon J. (James, c1865-1934) 051:0152
 Dixon J. R. (John Rochester, c1867-1929) 047:0124
 Dixon R. (Raydon, 1878-1913, Sir) 017:0258.
 Dixon R. (Ralph, c1918-1940). 057:D143
 Dixon R. B. (Robert Bined, 1867-1939, Eng. V-Acad. Sir) 056:D151
 Dixon W. (William, c1883-1959) 075:0104
 Dobson D. (Douglas, c1862-1943). 069:0186.
 Dobson H. J. (Henry James, c1874-1949) 055:D151
 Dobson W. (William, c1835-1907) 023:0295.
 Dobson W. G. (William Gordon, c1877-1941) 057:D143.
 Dodds J. B. (John B.) 005:0195.
 Dodsworth R. L. (Robert Irving, 1874-?) 042:0175
 Donati E. (Luigi, 1856, Dr) 297:0053.
 Dorey S. F. (Stanley Fabes, 1891-1972, Dr). 047:0229; 055:0203, 060:0507, 061:0267, 067:0389, 072:0127
 Douglas K. (Kenneth). 083:0129; 094:0087
 Douglas L. M. (Louis Mortimer, ?-1915, Lt). 032:0529; 057:0067.
 Doust D. J. (David John, 1925). 075:0555, 079:0895.
 Dove E. J. (Edward John, c1856-1930). 046:0457
 Downs J. (James, c1856-1926). 045:0301.
 Doxford A. E. (Albert Ernest, 1867-1957). 012:0149; 036:0050; 037:0029; 054:D233.
 Doxford C. D. (Charles David, c1857-1935). 051:D123
 Doxford R. P. (Robert Pale, c1851-1932). 048:0266.
 Doxford W. L. (William Theodore, 1841-1916, Sir). 182:0069, 094:0013; 093:0272
 Driver S. C. (Sivarak Cawasji, c1890-1947). 063:D235.
 Drummond W. J. (Walter James, 1891-1965, Sir). 045:0211; 082:0083.
 Duckitt J. B. (John Bennett, 1845-1917, NERCIES Sec). 025:0047, 033:0272.
 Dugdale F. W. (Francis William, c1892-1951). 031:0417; 068:D167.
 Dugdale W. H. (William Henry, 1859-1928). 023:0013; 024:0021, 045:0436
 Duly S. J. 063:0219.
 Dubeau H. M. 056:0321
 Duffin W. J. (William Jolly, 1894-1950, Prof) 054:0301.
 Dunlop L. V. (Louis Vardale, c1879-1953). 072:D236.
 Dunn H. H. (Herbert Herketh, c1872-1982). 068:0154
 Dunn J. L. (John Thomas, 1858-1939, Dr) 039:0571
 Dunne W. F. (Walter Francis, ?-1953). 071:D132.
 Durham (Earl of), USE: Lambton (Earl).
 Dykes G. (George). 014:0237.
 Dykes J. (James, 1851-1915). 021:0375
-
- Earne C. 055:0059.
 Easton R. W. S. (Robert William Stephen, 1922-). Sir) 102:X001.
 Eckhard J. W. (Julian Walter, c1923-1982) 099:0111.
 Edgar G. H. (George Russell ?-1968) 069:0537, 084:0168.
 Edgar J. (Joe) 083:X004
 Edmiston J. B. (James B., c1840-c1906). 078:0169, 077:0217.
 Edmundson I. F. 081:0198.
 Edstrand B. (Hans). 072:0279.
 Edwards G. T. (George Thomas, 1882-1961, Sir). 076:D103.
 Edwards J. (Prof). 069:0117.
 Edwards J. H. (James Henry, 1870-1945). 061:D223.
 Edwards L. (Lawrence (Lawrie), 1836-1968, Sir) 063:0135, 085:0057.
 Edwards R. W. (Robert William, ?-1909) 025:0323
 Egerton A. C. G. (Alfred Charles Glyn, 1886-1959, Sir). 063:0125
 Eginton A. J. 084:0031.
 Elder E. (Edward, c1869-1927). 043:0301
 Elder F. C. 032:0287.
 Elliot J. W. (John William, c1887-1957) 073:D149.
 Elliot R. G. (Richard Gray, c1878-1943). 050:D169
 Ellis J. S. (James Stuart, c1922-1949) 066:0197.
 Ellis J. W. (James William, c1855-1938). 054:0233
 Ellison H. B. (Henry Bernard, c1901-1963, Capt) 080:0080.
 Emerson A. (Arnold, 1913-1982, Dr) 055:0177, 053:0133; 054:0289, 066:0295, 070:0121, 076:0859, 079:0295; 081:0201; 087:0139, 094:0059, 089:0017
 Ende M. (Michonasa), 1913:55
 English J. W. (John Walter, 1930-). Dr. 068:0031, 092:0053; 094:0117.
 Erlsson A. F. (Axel Fredrick, c1853-1919). 035:0574.
 Errington G. (George, ?-1917) 034:0589.
 Esmeray W. (William, ?-1915) 039:0329
 Evans J. (James, 1913-?) 156:0081.
 Evans K. G. (Kenneth C.). 068:0086.
 Everett J. T. 054:0129
 Everett F. P. (Thomas Frederick, 066:0407.
 Ewart W. D. (William Douglas) 012:0473
 Eynon J. J. R. (John James Rees, c1876-1936). 052:D159.
 Eyles G. M. (Geoffrey Mableton, c1869-1945). 061:D224
 Eyles R. J. (Reginald John, c1873-1933). 043:0061; 049:0186.
-
- Faerman W. (William, c.1866-1951) 148:0167
 Fairburn W. A. (Walter Armstrong, c1856-1947) 065:0123

SECTION 3. PERSONAL NAME INDEX

- Fairweather C. W. (C. Emma Wilson, ?-1916). 032:0329
 Fallinsen O. M. (Oss M.). 101:X038.
 Farlam G. W. (George William, ?-1952). 059:D125
 Farmer J. D. (John Drummond). 063:0205.
 Farmer J. H. (John Hall, c1855-1959). 067:D192.
 Fawcus W. (Walter, 1880-1918). 034:L367.
 Feather T. (Tom, c1880-1952). 059:D125
 Featherstone J. (John, c1888-1951). 068:D161.
 Fells L. (Ian, Prof.). 105:0037.
 Fenner A. J. 076:0183
 Fenwick J. James, 1864-1940. 057:D143.
 Fernando V. 081:0037-063:0013
 Ferguson A. W. 066:D194
 Ferguson W. 066:D194
 Fernie D. B. (David Barclay, c1893-1952). 069:D125
 Ferriter R. M. (Robert M.). 012:0141
 Ferris J. R. (James Edward, c1872-1965). 079:D161.
 Fejo N. A. (M.J. Agnar, c1893-1941). 060:D190
 Fielder J. H. 095:0153.
 Field J. R. 076:0183
 Finch A. H. (Alfred Henega). 028:0715.
 Finckle W. (Walter, ?-1945). 052:D159
 Finniston H. M. (Hilda Mary, 1912-c1991, Sr.). 061:0235, 087:0257.
 Firth D. 074:0285
 Fishenden M. (Margaret Dr.) 067:0325.
 Fisher E. H. (Eric H.). 100:0187
 Fisher J. A. (John Arbuthnot, 1841-1920, Baron Kilmacross, Adm'l Fleet). 036:0576.
 Fisher J. W. (John W., Sr.) 068:0019.
 Fitzgeorge D. (D.). 071:0163; 075:0285.
 Fitzgerald D. W. (Dorhan Walker, c1849-1925). 041:0475.
 Fitzsimmons P. A. (Patrick A.). 101:X025.
 Fleming C. R. J. 082:X005.
 Fleming G. 092:X004.
 Fleming T. (Thomas, c1887-c1950). 016:D197
 Flecker A. (Alfred, c1900-1959). 075:D105.
 Flecker J. W. 102:X013
 Fletcher W. F. (William Frederic, c1880-1950). 030:D201.
 Flett H. (Harry, c1890-1961). 078:D153
 Flett A. R. (Dr.). 072:0083.
 Focht F. (Ferdinand, c1852-1929). 045:0435
 Foggan J. (John, ?-1917). 032:0293.
 Ford J. (John, c1869-1955). 070:0210
 Forrest P. D. (Peter David, 1940-). 107:0267
 Forster A. L. (Alfred Lindsay, c1870-1945). 055:D159.
 Forster J. T. (John Thomas, c1892-1945). 067:0254
 Forsyth G. B. (George Howard, 1902-1989, Dr.). 063:0267; 096:0240.
 Fort G. 104:001
 Fortune T. C. (Tom Cameron, ?-1945). 062:D169.
 Foster H. (Henry, 1857-1928). 005:0077, 011:0765, 015:0426.
 Foster J. A. 108:0025.
 Fothergill H. (Harry). 032:0259
 Fothergill J. R. 039:0343-039:0149-032:0235
 Fottenger H. 030:0321
 Fowler A. (Alan, Dr.). 106:0067.
 Fowkes H. (Henry, ?-1904). 001:0037, 021:0542
 Fox C. (Carter, c1876-1955). 073:D149
 Fox S. (Samson, 1838-1902). 020:0267.
 France A. B. (A. Sam Byram, c1860-1929). 105:0421
 Frankel E. G. (Fred G.). 087:X002; 088:X024.
 Frankl J. P. (James Peter, ?-1924). 040:0547.
 Franks M. L. 095:0065
 Fraser K. (Kenneth, 1871-1911). 05:01143.
 Fraser-Smith E. W. F. (Edwin William Frederick, c1880-1939, NEDS secretary). 051:0177; 055:1267
 Fraser-Smith P. D. (Philip Dacre, c1925-c1982). 069:0066
 Fraser A. S. (Anthony Strong, ?-1921). 038:0593.
 Freeman S. B. (Sterry James, 1875-1953). 047:0851.
 Frewer M. (Mason). 035:0213.
 Fricke W. (Wolfgang). 107:0123
 Frost W. E. 069:0291.
 Fullagar H. F. (Hugh Francis, c1873-c1917). 030:458; 033:0287.
 Fullerton R. A. (Robert Arthur, ?-1943). 060:D130.
 Furness (Christopher, 1852-1912, Lord). 029:0374.
 Gudd G. F. (George, Dr.). 090:0051
 Gallagher C. C. (Colin C.). 102:0371.
 Gallin C. (Constance, 1928-, Prof.). 091:017
 Gannaway H. G. (Henry George). 003:0149.
 Gardner J. S. (Edgar Sydney). 039:0676
 Gardner A. M. (A. McInnes). 046:0191.
 Gardner J. H. (John Howland, c1871-1941). 061:0224.
 Garrett G. H. (?-1855). 025:0042.
 Gartwalde J. R. (John Robert, c1860-1924). 041:0434.
 Gavin R. W. L. (Richard William Lewis, c1894-1957). 054:0311, 158:0245, 065:0334, 073:0154
 Gayner R. H. (Robert Hayden, ?-1948). 060:D190.
 Gearing E. G. (Ernest George, c1890-1907). 023:0295
 Geary A. E. (Alfred Ernest, c1870-1932). 059:D190
 Gebbie D. B. (Donald Beris, c1883-1928). 045:0436.
 Gebbie J. R. (John Ramsay, 1839-1958). 029:0019; 059:0168, 062:0217, 081:0168.
 Geddes C. (Christopher, c1846-1919). 036:0576.
 Geddes E. M. R. 073:X001.
 Gelling D. W. (Douglas Wesley, ?-1963). 080:D083
 Gier J. R. (Jan R., Prof.). 021:0121.
 Gibb C. D. (Claude Dixon, 1898-1959, Sr.). 075:D76
 Gibb M. S. (Marion Sylvester, 1878-1950). 015:0215; 044:0019; 045:0017, 066:D197.
 Gibson J. H. G. (John Henry, 013:0764; 019:3053; 024:0751; 045:0261.
 Gibson T. W. (Thomas William, c1890-1958). 074:D142.
 Gilchrist G. 081:0046.
 Gilchrist A. (Anthony, ?-1942). 095:0111.
 Gilchrist N. (Norman). 112:0122.
 Gil D. (David, 1847-1914, Sr.). 059:0253
 Gilman S. (Sydney). 099:0071
 Giss W. H. (William H.). 056:0221.
 Gizebrook R. T. (Richard Teague, 1854-1935, Sr.). 031:0294; 049:0225.
 Glover E. J. (Edward Joseph, 1929-) 083:0075
 Glover J. 019:0229
 Goodkoop D. (Doris, c1875-1947). 062:D215.
 Goring G. D. 090:X004.
 Goldsworth J. (John, c1860-1951). 058:0168.
 Goodall F. B. (Francis Basil, ?-1915). 035:0297
 Goodall S. V. (Santee Vernon, 1883-1915, Sr.). 061:0027
 Gooday R. W. 060:X010
 Goodrich G. J. (Goodfrey John, 1925-, Pract.). 082:0235.
 Goodwin G. G. (George G., 1862-1945, Engr.-Adm.-Supt.). 061:0224
 Gordon E. H. (LJ). 004:0359.
 Gordon W. J. (William James, c1861-1926). 042:0288.
 Gordon W. J. (William Leslie, 1851-1919). 036:0576
 Gordon-Lubbs H. (Henry, 1880-1954, Lt. Col.). 071:D132.
 Goss R. O. (Richard O., Prof.). 097:X001, 105:0197.
 Gouge A. 051:0277
 Gowen A. B. (Arthur Byram, c1852-1944). 060:D190.
 Graham A. (Alfred, c1890-1940). 061:0225
 Graham E. (Edward, 1837-1897). 013:0259.

SECTION 3: PERSONAL NAME INDEX.

- Graham E. (Edwin, c1889-1952). 079:D161.
 Graham F. (Frank, c1854-1931). 028:D206.
 Graham J. S. (Joseph Simpson, 1864-1915). 032:D329.
 Graham J. T. (John Thomas, c1866-1942). 061:D225.
 Graham T. (Thomas, c1887-1958). 075:D178.
 Graham W. (William, c1862-1932, Sir). 048:D237.
 Grant J. (John, c1893-1952). 068:D168.
 Gravell J. (John). 003:0027.
 Gray G. R. 071:0403.
 Gray H. (Harry). 007:0373.
 Gray R. C. (Robert "Robin" Crane) 036:0131; 037:0069; 101:0148.
 Gray W. (William, 1821-1898, Sir). 015:0263.
 Gray W. C. (William C.). 030:0526.
 Gray W. R. 035:0151.
 Greaves A. G. (Arthur George, ?-1947). 064:D194.
 Green I. C. 051:0119.
 Green W. G. (William George, c1863-1941). 057:D146.
 Greenshields J. (James, c1891-1945). 062:D169.
 Gregory R. W. (Richard Walter, c1855-1938). 074:D142.
 Gregson W. (Mr.). 049:0205.
 Gresham D. F. (David F.). 089:0055.
 Greve E. M. 090:X004.
 Grier D. (Douglas, c1889-1942). 061:D225.
 Grier G. W. (George William, c1872-1926). 042:0388.
 Griffin A. (Anthony, 1926, V-Adm Sir). 094:X000; 100:0099.
 Griffith E. (Edwin). 3:7:0157.
 Griffith R. 098:0347.
 Griffiths E. (Sam, 1898-1962, Dr). 053:0267.
 Grime T. (Thomas). 039:0592; 055:D157.
 Grimes T. B. (Thomas Benjamin, c1854-1928). 044:0387.
 Grindall A. R. (Alan R.). 135:0059.
 Gueritte T. J. 034:0211.
 Gunn J. (John, 1837-1918, Sir). 036:0391.
 Gurney A. S. (Amos Stafford, c1890-1949). 086:D198.
 Guthrie W. J. (William James, c1877-1940). 043:0590; 056:D251.
 Gysler G. 079:032 .
-
- Haag J. (Joseph, Jr, c1856-1958). 074:D142.
 Haavie T. O. (Thor Ove, 1941-). 094:0115.
 Haclcock A. G. (Alan George, 1851-1956, Sir). 054:0367; 052:D141.
 Haddock G. F. (Gilbert Forster, ?-1951). 022:0331.
 Hadjiopyrian A. G. 066:0371.
 Hadlow W. H. (William Henry, 1856-1927, Sir). 057:D174.
 Haig, (Douglas, 1861-1928, Earl of Balmorude). 044:0387.
 Haigh B. P. (Bernard Parker, 1884-1941, Prof). 056:0164.
 Hall C. D. (Carrington Dale, c1903-1940). 072:D122.
 Hall H. (Hewitson, c1874-1930). 050:D172.
 Hall J. (John, ?-1920). 056:0395.
 Hall J. P. 061:0229.
 Hall J. P. (John Percy, c1882-1954). 073:D200.
 Hall W. (William, c1874-1955). 058:D168.
 Halley G. B. (George Benson, ?-c1982). 076:0021; 100:0071.
 Hall-Brown E. (Ebenezer, c1851-1920). 003:0115; 056:0560.
 Hamer P. 061:0223.
 Hamilton A. (Andrew, 1862-1934). 048:0244; 049:0081; 050:D174.
 Hamilton J. James, ?-1927. 044:0587.
 Hamilton J. H. 005:0217.
 Hamilton R. C. C. (1871-1931). 015:0356.
 Hamilton W. (William, c1876-1946). 083:D239.
 Hamlin S. A. (Norman A.). 100:X026.
 Hammar H. G. (Rags Gibbs, c1865-1947). 063:D236.
 Hand R. K. (Robert F.). 051:0121.
 Hand J. O. (Isaac O.). 026:0181.
 Hankins G. A. (George Alexander, 1895-1950, Dr). 060:0023.
 Hanson C. G. (Charles G.). 094:X006.
 Hanson R. P. (Robert Philip). 082:0041; 088:0117.
 Haramishi M. (Masao, c1870-1934, Dr). 052:D141.
 Harde D. (Doris, c1923-1985). 102:0165.
 Harding A. S. (Alan S.). 088:D145.
 Harding E. J. (Edward J.). 088:X004.
 Harding W. (William, ?-1987). 104:0042.
 Hardy A. C. (Alfred Cecil, c1898-1961). 078:D153.
 Hardy E. (Edward, ?-1922). 039:0676.
 Harey G. F. 052:0143.
 Hardy H. T. (Henry Thomas, c1874-1950). 069:D198.
 Hargreaves M. R. (Mervyn Richard, 1912-1987). 083:X003; 091:0181; 104:0079.
 Harriman W. A. (William Ambrose, c1884-1962). 079:D155.
 Harrington J. L. 086:0057.
 Harris D. W. (David West, c1914-1940). 053:D146.
 Harris H. (Dr). 060:0214.
 Harrison A. (Alfred, c1856-1928). 044:0387.
 Harrison H. S. (Henry Sepamus, c1882-1930). 047:0440.
 Harrison J. (John, ?-1905). 082:0283; 104:0071.
 Harrison R. (Robert). 046:0655.
 Harrison S. H. (Stanley Howard, c1886-1931). 047:0440.
 Harrison T. (Terence). 100:0001.
 Harrison T. (Thomas, c1859-1926). 045:0443.
 Harris A. B. (Alan B., ?-1991). 100:0150.
 Harrold P. C. (Peter Cosobon, ?-1931). 048:0207.
 Harrovey G. M. (George Mitchell, c1883-1943). 050:D191.
 Harvey E. M. A. (Ms). 060:0227.
 Harvey E. W. (Ernest Walter, c1882-1937). 045:D180.
 Harvey L. (Leverance, ?-1952). 070:D220.
 Harvey R. C. (Roger C.). 105:0041.
 Haswell R. (Robert, c1888-1941). 056:0162.
 Hatfield W. H. (William Herbert, 1882-1942, Dr). 036:0321; 058:0273; 060:0277.
 Haug K. (Karey). 073:0113.
 Hauffmann H. 052:0103.
 Havelock T. H. (Thomas Henry, 1877-1968, Prof). 042:0071; 062:0047.
 Haver A. H. (Arthur H.). 028:0257; 028:0059.
 Hawdon L. (Leslie). 100:X004.
 Hawkes C. J. (Charles John, 1881-1953, Prof). 037:0037; 060:0185; 052:0025; 082:0113; 053:0019; 054:0018; 060:0295; 063:0025; 069:0125.
 Hawkins R. S. 081:0021.
 Hawley R. (Robert, 1936-). 066:0065; 103:0047.
 Hayden R. L. J. (Robert Leslie James). 070:0151.
 Heath G. E. (Gina E., Prof). 084:0053; 097:0063; 107:0045.
 Heath J. D. M. 087:X001.
 Heath T. H. (Frank Henry, 1867-1946, Sir). 035:0069.
 Heavyside G. C. 069:X005.
 Hees J. H. (John H.). 019:0005; 050:0097; 024:0029.
 Heesle W. P. (William, Plsco). 077:0089.
 Heddie A. T. (Austin Thomas, c1867-1937). 074:0142.
 Heine R. S. (Herbert Spencer, ?-1917). 062:D236.
 Hemmings F. H. (Thomas Harry, ?-1924). 040:0349.
 Henderson J. (John, ?-1919). 025:0046; 066:0125.
 Hendin A. J. (Alexander James, ?-1944). 060:D191.
 Hendy J. N. (John Nicholas). 048:0089; 061:0267.
 Henry P. (Peter, Sr, ?). 1:0:0071.
 Henry W. P. (William Peter, ?-1928). 044:0389.
 Henshall S. H. (S. Henry). 095:0051.
 Hengell R. (Robert, ?-1927). 046:0058.
 Hepburn A. (Alexander, 1848-1889). 000:0042.
 Herbert A. (Arthur, 1866-1937, Sir). 035:0179.
 Herbert D. C. 069:0027.

SECTION 3: PERSONAL NAME INDEX

- Harvey F W E. (Frederick William Jane, 1867-1951, Marcus of Bristol, R-Adm) 068:D164
 Hesar M A. (Majd A.). 115:002.
 Heslop R O. (Richard Oliver, 1842-1916). 002:0330.
 Hickey F. 063:D103.
 Hickman M J. 059:0037
 Hicks C. (Christopher). 105:0645.
 Hiers J O. (John Oswald) 053:D174
 Hise W S. (Walter Seymour, c1861-1932). 049:D183.
 Hicks S. (Shunichiro). 103:0159.
 Higginson G R. (Gordon Robert, 1929-. Sn.) 107:0041
 Hill R S. (Robert S., Dr). 092:0091.
 Hill S B N. (Sidney Brown Nicholson, ?-1958) 075:D178
 Hill W S. (W. Scott, Eng R-Adm) 046:0325.
 Hillhouse P A. (Percy A., 1868-1942, Prof). 046:0391.
 Hills P J. 138:0075.
 Hills W. (William (Bill), 1941-) 102:0077, 106:0007
 Hims H E C. (Cdr). 073:0179.
 Hinchliffe R. (Robert, c1875-1958). 063:0183, 074:D143.
 Hinde W S. (W. Stanley). 067:0041
 Hindmarsh G. (George, ? 1946). 063:0237.
 Hindson R J. (Renold John, c1905-1941). 055:0159.
 Hindson W. (William, ?-1856). 013:0253
 Hirst R. (Richard). 008:0259.
 Hishop J D. 069:0275
 Hjørving S. (Sverre, c1980-1956) 072:D166
 Ho D. 081:0175.
 Hobhouse J R. (John Richard, 1893-1961, Sic) 066:0117.
 Hobbick G C. (? 1924). 060:0549.
 Hobson J W. (John W-Adm). 025:0287, 037:0091, 041:0145, 048:0045.
 Hodges F A J. (Frederick Alexander John, 063:0142).
 Hodgkinson P G. (Peter Geoffrey) 083:0193
 Hodgson B. 080:0157.
 Hodgson J D. (John Deane, 1856-1918). 470:0382
 Hodgson S D. (Stanley Dalkor, 1910-1968). 076:0105.
 Hong A. (Ardobek) 074:0015; 015:0125; 019:0185; 022:0171, 036:0033.
 Hok C W. (Christopher Wilhear, c1859-1934) 011:0087, 007:0235; 010:0021; 050:D174.
 Hoffer H K. (Herta Klaus), 195:0085
 Hollis B. (Basil, ? 1917). 033:0295
 Hollis H E. (Henry E., c1854-1921). 008:0793.
 Holzapfel A C. (Alfred Charles). 028:0244; 028:0245.
 Holzapfel M. (Max, c1861-1921). 042:D294.
 Hook C. (Christopher) 087:0165
 Hooker S G. (Stanley George, 1919-1984, Sir). 062:0145.
 Hoopsen A. (Aunt) 072:0273
 Hopkinson B. (Bernard, 1874-1918, Prof). 040:009; 030:0433
 Hopwood A R. 083:0161.
 Horn F. (Prof). 054:0251.
 Horne L B. (Leonard Ralph, ?-1963) 055:0081, 067:0021, 090:0080.
 Hornsby G. (George, c1856-1949) 065:D251
 Horstley W D. (William Douglas). 046:0256; 081:0069.
 Houlden G H. (George Haldenorth, ?-1936), 077:0077
 Houston J D. 085:0045
 Howd D. 084:0041
 Howden W H. (William Hig, c1884-1943) 050:D191
 Howe R. (Robert, c1869-1941) 056:D751
 Howlett I. (Jan). 087:0149.
 Hoyland A. 095:0177
 Hryniskak W. (Waldemar). 084:0021.
 Hudson A G. (Alexander George, c1872-1934). 050:D179
 Hudson W T. (William Thomas, c1891-1936). 057:0179.
 Hughes W L. (Walter Laurence, 065:0273)
 Hull D. (Dereck). 105:0207.
 Hume G. (Graydon, 1857-1911). 024:0103
 Hume W C. (William Crawford, ?-1965). 080:D080.
 Humphreys G. (George c1871-1944). 061:D225
 Humphreys H S. (Herbert Septimus, c1896-1952). 051:0219; 069:0127.
 Huntington A M. (Anthony Michael) 035:0012, 068:0005.
 Hunter B J. (Ernest John, 1912-1983, Sir) 064:0059, 075:0021; 105:0109.
 Hunter G A. (George Albert, ?-1936) 052:D141
 Hunter G B. (George Ruston, 1845-1917, Sir). 026:0095; 057:D174.
 Hunter G E. (George Ernest, c1875-1954). 071:D132.
 Hunter H. (Harry, ?-1973) 040:0528, 045:0135, 053:0159; 056:0093; 029:0064; 085:0151.
 Hunter N M. (Norman MacLeod, c1878-1969). 048:0221, 050:0082; 052:0051; 085:0120.
 Hunter N M. (Norman Mace, ?-1966) 083:D083
 Hunter S. (Somerset, 1856-1940). 025:0025; 026:0153; 048:0234; 059:0151
 Hunter S. (Somerset, Jr, 1890-1963, Sir) 061:0403, 061:0119, 062:0019, 079:0161.
 Hunter W W. (William Wilson, ?-1887) 106:0044.
 Hunting C S. (Charles Samuel, c1853-1921). 056:0090.
 Hunting P E. (Percy Llewellyn, 1885-1973, Sic) 089:0080.
 Hurley S. (Susan) 104:0031
 Hurst O. (Osborn). 069:0225.
 Hurst R. (Robert, Lt) 063:0047
 Hutcheson C W. (Charles Wesley, c1861-1920) 036:0580.
 Hutchinson B. (Gilbert, ?-c1982). 199:0066.
 Huther M. 090:0153.
 Hutton W R. (William Ross, c1877-1941) 058:0163

 Huxon R. (Reginald, c1944-1983) 077:0078, 078:0233; 061:0049; 101:0148.
 Huxstaitlen A B. (Alwinus Ferdinand, c1891-1955). 072:D187.
 Ieda S. (Sawash) 096:0131
 Ieda T. (Taro) 101:0155
 Iffe C E. (Cedric Egan). 066:0155, 072:0183
 Ingalls B P. (Bernard Elmer, c1501-1962). 078:0154.
 Inglis C E. (Cdr). 081:0111.
 Ingalls J. (John, 1864-1919) 075:0582
 Inghs N P. (Dr). 057:0101
 Inghyby M K. (Maurice Ken, c1859-1939). 056:D155.
 Innes C H. (Charles Hy, 014:0143), 016:0043; 017:0027
 Innes G. (Gilbert, ? 1973). 084:0186
 Ireland H J. 083:0121.
 Ireland J. (John) 065:0173
 Irvin C W. (Charles Walter, c1911-1969) 051:D117
 Irving D. (Der, c-1911) 052:0207
 Irwin T F. (Thomas F., 1868-1929) 013:0269.
 Isherwood J W. (Joseph William, 1878-1933, Sir). 045:0289; 050:0269, 054:0223
 Isherwood W. (William, 1858-1940, Sn.) 062:D177
 Ishigai S. 100:0023.
 Ishikawa H. 094:0069
 Ison H C K. 076:0098
 Itoh S. (Senza) 059:0071
 Ives H J. 061:0287.
 Iwata S. 101:0157

 Jackson A S. (?-1965) 015:0230
 Jackson P. (Percy, c1897-1989) R7 Jackson Lecture (in Subject Index). 069:0179, 080:0045, 082:0047, 101:0045.
 Jackson W D K. (Walker David Russell, 1896-1956, Sir). 077:0149

SECTION 3: PERSONAL NAME INDEX.

- James M. C. (Matthew Coulson, c1859-1934). 002:0157, 008:0105; 012:0111; 018:0239; 035:0349; 050:D174
- James R. L. (Robert Lago, 1885-1944). 061:0226.
- James R. K. (Capt.). 067:0355.
- Jamnejad G. H. (Gholam H.). 105:0041.
- Janczyński T. E. (Tadeusz Jędricki). 077:0345.
- Jarvis H. R. (Harry Robert). 024:0121
- Jefferson J. L. (John Lancelot). 075:0419; 074:0235.
- Jefferson L. W. 077:0322.
- Jeffrey J. R. (James Robert, c1891-1962). 078:0354
- Jellison J. R. (John Rushworth, 1856-1935, bar., Adml Fleet) 052:D139
- Jenkins C. L. 082:X002
- Jenkins G. E. (Gomer Edward, c1882-1963). 077:D122.
- Jenkins L. C. W. (Leslie C. W.). 056:0281.
- Jenkins W. (William, 1825-1895). 012:0245
- Jenkins W. (William, 1805-1954). 071:0133
- Jenkinson E. A. 069:0027.
- Jennings F. W. 015:0017; 017:0071
- Jensen C. J. G. 061:0323, 065:0099; 068:0377.
- Jevons F. B. (Frank Byron, 1858-1934, Dr.) 029:0127, 052:D137
- John N. H. (Norman Harry, c1874-1940). 056:D135.
- Johling R. (Robert, ?-1952). 069:D127
- Johling W. H. (William Harold, c1893-1963). 080:0308
- Johannsen A. A. (Alexander A., c1859-1921). 047:0440
- John T. G. 030:037
- Johns A. W. (Arthur Wilbur, 1875-1937, Sn). 051:0470; 055:D179.
- Johnson A. J. (Alexandra Johnson). 057:0235; 069:0045; 070:0193; 070:0255; 073:0331; 078:0161.
- Johnson D. R. 089:013
- Johnson H. C. (Harvey Fletcher, ?-1959, R Adml). 076:D106.
- Johnson J. (John, c1859-1921). 035:0073, 038:0505.
- Johnson L. (Lennard). 087:0059.
- Johnson P. B. (Philip Burton, 1857-1964, Sn). 067:0019; 080:D08
- Johnson R. S. (Robert Stanley, c1888-1940). 057:D140
- Johnson T. A. (Thomas Allan, c1865-1930). 017:0413
- Johnston J. 044:0031
- Johnston J. J. (Joseph James, c1902-1920). 080:0155
- Johnston M. J. J. (Mc John James, c1875-1932). 048:0307
- Johnstone W. (William, ?-1904). 021:0342
- Jolsey J. (John, c1890-1959). 076:0109.
- Jones A. C. 081:0213.
- Jones D. A. (David Arthur, c1925-1946). 062:D170.
- Jones G. (George, c1846-1933). 039:0677.
- Jones P. L. (Percy Lewis, ?-1961). 050:0197; 064:0177; 071:0117, 082:D084.
- Jones W. D. 059:0139
- Jordan J. G. 105:0275
- Jordan J. W. 092:X004
- Jordan M. L. J. 088:X008.
- Jourdain M. 076:0095
- Joyce G. W. (George William, ?-1926). 062:0389
- Judd P. H. (Peter Henry). 077:0052.
- Kac G. 097:0135.
- Kalogerakis J. M. 102:0009.
- Kameen T. (Thomas). 085:0147
- Kamlerkar A. G. (Dr.). 095:0151.
- Kanuta T. (1945-). 094:0091
- Kantrovitz O. P. T. 076:0051
- Karl A. (Alexander, c1898-1958). 057:0133; 052:0157, 074:D145.
- Karsoulakos P. S. (Panayotis S., 1952-). 096:0115, 101:0029
- Katlan M. R. (Mohamed Razaq, 1956-). 105:0111.
- Keary E. M. (Mrs). 040:0128.
- Keble H. H. W. (Harry Hiram Wheaton, c1879-1946). 063:D237.
- Keller K. O. (Karl Otto, c1877-1942). 045:0185, 051:0481, 054:D163.
- Kemnal J. H. R. (James Belmont Rosenthal, 1864-1927, Sn) 057:0185; 043:0301.
- Kemp D. (David, c1866-1926). 042:0389.
- Kemp G. (Dr.). 050:0225; 051:0739
- Kendall S. O. (Steward O.) 049:0377; 071:0209.
- Kennrick S. 087:X005
- Kennaugh J. C. (John Carrick, c1829-1952). 068:D168.
- Kenningh T. T. (Thomas Trehear, c1873-1921). 049:0183.
- Kennedy A. M. (Alexander McAnslane, 1860-1939, Sn) 055:0169.
- Kent J. L. (James Lovist, 057:0055; 054:0327; 065:0451; 056:0417; 066:D194, 098:0155.
- Kerfoot J. (James, ?-1924). 040:0549
- Kerr J. H. (John Blair, 1891-1970). 087:0088.
- Kerr N. 092:0038
- Kerr W. (William, Prof) 037:0249; 033:0311; 041:0243.
- Kilchenmann W. A. (Dr.). 082:0189, 060:0061
- Kilvington W. (William, 1857-1895). 006:0157; 012:0245.
- Kimber D. B. (Derek B., 1917-). 093:0001.
- King G. W. (Geotrey William, c1921-1941). 057:0147
- King J. T. (James Foster, c1862-c1940). 041:0061; 040:0393; 051:0151; 060:0141, 064:0194.
- King J. P. R. (James Fabian Rosenthal, 1852-). 065:0029, 013:0001.
- King J. H. (James Harold, c1892-1953). 070:D201.
- Kirk J. H. (John Hodgson, c1915-1959). 076:D106.
- Kirkaldy J. (John, 1853-1920). 037:0449.
- Kirkley (Lord). USE. Noble W. J.
- Kirkpatrick W. R. 097:X003
- Kitching G. W. (George W., ?-1963). 082:D086
- Kjellberg O. (Oscar, c1871-1932). 047:0442.
- Knights H. L. (Henry L., Mrs). 093:0217
- Knox R. (Robert, ?-1928). 044:0389
- Koch R. D. 090:X005.
- Koong M. 051:0347.
- Kramer J. B. 056:0274.
- Kroese W. T. M. (W. Lien Tate Meent, c1887-1949). 066:D108
- Krohn R. (Ragnvald, ?-1919). 039:0677
- Kurz L. 100:X010.
- Kusina T. (Talia). 102:0159
- Kuyt K. (Klara, c1894-1954). 071:0133
- Laing A. (Andrew, 1856-1921). <F. Laing Lecture (in Subject Index) 045:0429; 06:0425; 065:0729
- Laing A. (A. A.), 1856-1901). 017:0258
- Laing G. A. (George Alexander, c1884-1916). 064:D195.
- Laing H. (Hugh, c1872-1930). 046:0458
- Laing J. (James, Jr., c1560-1895). 012:0249.
- Laing W. A. (William Alexander, c1902-1907). 066:D165
- Laird A. M. 074:0311.
- Lamb J. (John, c1891-1958). 049:0288; 070:0377, 054:0371, 075:D178
- Lambie W. (William, ?-1963). 050:D087.
- Lambley J. G. (Gen). 103:0059
- Lambrechtshen J. A. (John Andreas, c1884-1928). 046:0458
- Lambton, (c1855-1928, Lord, Earl Durham). 065:0434.
- Lambton N. (Norman, 1942-). 101:0089.
- Lambt R. S. (Ernest S.). 061:0307
- Lane P. H. R. (Pearl H. R.). 107:0113.
- Lang B. B. (Berns Esper, c1896-1920). 040:0549
- Lankaster S. G. 071:0291

SECTION 3: PERSONAL NAME INDEX.

- Larocño A. (Albert), 096-0197
 Larkin J. (James, ?-1904), 023-0342.
 Latebe M. 090-0133
 Latimer W. (William, ? 1923), 040-0549.
 Latta J. (John, 1867-1946, Sir), 043-D237
 Lawrie C. (Charles), 058-0161; 058-0173.
 Laws B. C. 020-0121, 046-0347; 046-0221
 Laws F. 063-0345.
 Le Fleming H. M. (Hugh Morton, c1802-1858), 078-D152
 Le Maître C. 029-0477; 043-0269; 059-0113.
 Le Mesurier L. J. (Louis John, Eng Lt-Col) 058-0101, 041-0313; 048-0195; 051-0229; 053-0223.
 Len F. C. (Frederick Charles, ?-1952, Prof), 050-0025.
 Leuch A. J. (Adrad John, ?-1946), 063-D237.
 Ledgard P. (Percy, ?-1953), 059-D127.
 Lee H. W. (Hugh Warren, c1870-1938), 054-D250.
 Leonard W. J. P. (Walter James Puxon, c1921-1965), 061-D226.
 Levy J. C. (Jack C., Prof), 104-0031.
 Lewis E. A. (Eric A.), 107-0122
 Lewis R. I. (R. Ivan, Dr) 080-0091; 090-0088
 Lewis W. E. (William E.), 052-0127.
 Lewthwaite G. W. (George William, c1852-1952), 068-D127.
 Liddell A. R. 010-0287.
 Lightbott J. (James, Sir), 093-0127.
 Liley W. G. (William Gilbert, c1879-1955), 072-D167
 Lillierup C. S. (Charles Swift, 1887-1956, Sir), 061-0233; 082-0084.
 Lindsay R. 060-0029.
 Link R. P. (Rois Perival), 028-0311
 Lithgow J. (James, 1883-1952, Sir), 066-0153; 068-D176.
 Little J. (Frank) 021-0109
 Littleboy C. W. (Charles William, c1858-1930), 041-0414
 Littledale J. W. E. (John W. E.), 018-0021
 Livestey B. K. (Dr), 071-0057
 Livingston T. L. (Thomas Linton, c1862-1916), 033-0293.
 Lloyd M. E. (Michael F.), 057-X054
 Lochhead J. M. (James MacCulloch, ?-1890), 050-D192.
 Lock G. S. H. (Dr), 088-0175.
 Lockwood Taylor J. (Dr), 041-0123, 044-0143; 050-0082; 058-0161, 060-0059, 056-0194.
 Loder C. (Cornelis, c1898-1954), 070-1901
 Logan A. 076-0051.
 Logan J. A. (John Alexander, 1955), 100-0137
 Lubmeyer H. G. C. (c1845-1926), 041-0435.
 Londonderry (Marquis of), USE Vane-Tempest-Stewart
 Long A. E. (Ardagh E., 1856-1917), 060-0053, 000-0017; 014-0173, 023-0205, 024-0197, 029-0385,
 Long S. H. (Dr), 054-0557
 Longbottom J. G. (John G. Prof) 030-0346
 Lotvelt M. (Magnus), 075-0087.
 Loveridge W. E. (William Edwards, c1887-c1980), 064-0330, 057-0082
 Love W. 084-0105.
 Lubbock E. 067-0121
 Luckenbach J. L. (John Lewis, c1864-1951), 067-0193
 Lugt G. J. (Gerard John, c1885-1948), 040-0528, 051-0137; 064-D155.
 Lumsden T. (Thomas, c1887-1904), 100-0057
 Lund P. (Pearson, ?-1915), 052-0031.
 Lunde J. K. (Johnnes Krywanski), 065-0047
 Lunn J. R. (John Ramsey, ?-1927), 059-0077.
 Lusted J. 097-X002
 Lynam F. S. 078-0035
 Lynch D. B. (Denis Bevis, 1930), 101-0105.
 Lyon W. M. (William M.), 075-0225.
 Lyster C. A. 095-0217
 Mac, RT: Mc.
 McCarthy G. E. 006-0013
 MacColl H. (Hugo, 1861-1915), 052-0030
 MacDonall C. (Charles, c1854-c1927), 045-0441.
 MacDonnell D. R. (David Ross, c1864-1944), 061-D226
 Macdonald K. (Capt) 051-0237
 MacDonnell T. (Thomas, ?-1954), 080-0082.
 MacFarlane A. P. (Archibald P., c1860-1965), 059-0121, 082-0085.
 MacGregor I. (Joseph, 1832-1967), 084-0001.
 MacGregor R. A. (Robert Anderson, 1873-1956), 046-0721, 051-0151; 073-D150.
 MacHaffie J. (John, c1858-1931), 050-D178.
 MacKay J. R. (James Robertson, ?-1952), 076-0136, 090-0115.
 MacKay J. S. (John Searon), 071-D133
 Mackley E. N. (Edward N., c1878-1930), 046-0060.
 MacLaren F. L. 063-0281.
 MacLay J. P. (Joseph Paton, 1827-1951, Baron), 057-0032
 MacMillan W. C. (William Christie, ?-1952), 069-D128
 MacNay M. W. (Marcus Wood, c1888-1943), 060-D191.
 MacNay R. W. (Reginald Wilson, c1878-1949), 051-D103
 MacNeill D. (Donald, c1883-1927), 053-D179.
 MacCall H. (Hugo, 1841-1897), 010-0269
 MacTier R. S. (Reginald Stewart, 1868-1954, Sir), 083-0111.
 Madsen T. 038-0549.
 Mann H. (Henry, c1889-1949), 065-02151.
 Marler C. (Clara, c1893-1951), 057-D193
 Manly C. V. 066-D194
 Manly R. G. (Ronald George, c1921-1950), 064-0177; 066-0198.
 Marquell J. A. (John Andrew, 1870-1921), 038-0095.
 Manson P. (Peter), 100-0150
 Marple G. E. 057-0115
 Marlborough R. (Richard) 040-0275.
 Marr A. J. (Alan James, 1907-1989), 075-0449, 083-0039; 060-0304
 Marr J. (James, 1854-1932, Sir), 049-D186.
 Marr J. L. (John Lyon, 1877-1931, Col), 047-0442.
 Marsh A. J. (Alexander James, 1948 ?), 102-0125.
 Marsh H. (Clara), Prof), 095-0113.
 Marshall F. C. (Francis Carr, 1831-1903), 012-0289; 013-0250, 015-0033, 019-0235
 Marshall F. T. (Frank Theodore, c1866-1905), 021-0142
 Marshall G. (Graham, c1894), 101-0115.
 Marshall B. (Banjamin, 1825-1902), 003-0291.
 Martin H. E. L. (H. E. Lancel), 053-0755.
 Martin-Jenkins D. E. (David E.), 083-0063.
 Martin D. R. (David Roy, 1957-), Dr), 099-0106, 101-0127
 Marwood W. E. 064-0153, 070-0192.
 Mason F. T. (Frank Tombridge, 1900-1988, Sir, Eng Ch Plum), 075-0037
 Mason R. (Roy), 081-0098
 Mastuda Y. 095-0135
 Matheson J. R. (Jan Ross, c1870-1931), 048-0229
 Mathias E. V. 065-0286, 070-0177
 Mathieson D. (Danzie, c1850-1943), 060-0185.
 Maughan W. (William, ?-1916), 035-0582
 Maunter L. (Leonard, c1927-), Prof), 064-0061
 Maunsell G. A. 072-0229.
 Mayo L. (Leon, c1860-1886), 002-0059, 003-0167, 003-M023
 May N. (Noel), 058-0095.
 Maxwell W. G. (William George), 075-D178.
 May R. 040-0723
 Mc, RT: Mac.
 McBride T. B. (Thomas Barrie, c1884-1937), 053-D180.
 McBride W. (William, c1890-1941), 058-0163.
 McCulloch J. (John), 071-0025

SECTION 3: PERSONAL NAME INDEX.

- McCann D. M. (David M.). 093:0691.
 McClelland W. G. 089:0007.
 McClelland W. (William). 068:0245; 080:0101.
 McCulloch D. C. (Duncan Craig, c1868-1961). 078:D154
 McCulloch J. A. (John Arthur, c1882-1941). 057:D147.
 McCulloch J. S. 067:0175.
 McDonald R. 064:0119.
 McDougle J. H. (James Hector) 040:0551
 McGlashan A. (Archibald, 1855-1945). 014:0577; 061:0227.
 McGookin C. S. D. (Charles Sidner Demck). 063:D237.
 McGovern J. (John, 1878-1959). 038:0149; 045:0249; 046:0417; 047:0021; 048:0519; 051:0393; 075:D178.
 McGovern P. (Peter). 102:0053.
 McGregor R. (Robert, c1884-1922). 049:D155.
 McGugan J. (?-1965). 082:0085.
 McIver J. D. (John D.). 092:0001.
 McIver R. (Robert, c1894-1939). 076:D107.
 McIver T. (Thomas, 1918-1982). 079:0101; 087:0009; 098:0158.
 McKay W. (William, c1859-1931). 047:0442
 McKechnie J. (James, c1859-1931, Sr.) 048:D009.
 McKenzie K. 080:0085.
 McLaren R. M. (Robert McNair, c1850-1923). 040:0071
 McLarty D. L. (David Lyon, ?-1962). 079:0162.
 McLaughlin W. (William) 071:0219; 078:0243
 McLean J. H. K. (John Hure Kirk, c1857-1924). 048:0460
 McLellan W. (William, c1874-1904). 051:D193
 McLennan J. C. (Prof.). 034:0565; 035:0386.
 McLeod J. R. (John Ramsay, ?-1954). 071:D134.
 McPherson T. (Thomas, c1872-1947, Sr.) 031:0457; 063:D208.
 McQuistan A. N. (Andrew Nashel, c1880-1947). 065:D238.
 McRae A. (Alexander, ?-1923). 039:0677
 Meade T. P. (Thomas Francis, c1834-1950). 067:D194.
 Meekel H. (Hennar). 134:0007.
 Medhurst J. S. (John Stephen, 1947 ?). 100:0006.
 Meek J. H. (John Hudson, c1866-1945). 061:0227
 Meek M. (Marshall, 1925?). 071:0252; 100:0141; 100:0702; 101:0001; 102:0069
 Mein M. M. (Matthew McNaughton, c1854-1937). 053:D180.
 Melanby A. L. (Alexander Lawson, 1871-1951, Prof.) 014:0237; 077:0249; 039:0411; 041:0243; 053:D181; 068:D170
 Melanby T. G. (Thomas Graham, c1891-1926). 045:0302.
 Melanby W. R. (Walter Roy, ?-1972). 075:0247; 088:0185
 Melvin E. W. (Eric Wilson, c1909-1963). 079:D152.
 Melvin R. (Robert, c1857-1915). 031:0705
 Menzies W. (William, 1840-1858). 015:0263.
 Meredith A. C. 056:0293.
 Merz C. H. (Charles Esterman, 1874-1940). 057:D147
 Messenger T. (Thomas). 014:0155; 015:0067
 Messent P. J. 003:0291.
 Metcalfe C. W. (Charles White, c1871-1943). 050:0395.
 Metcalfe T. (Thomas, 1859-1925). 042:0389.
 Metwelson J. (Jules, c1871-1952). 065:D128.
 Meyer A. (Dr.). 063:0169
 Micheli P. (Pierre, 1860-1907). 023:0298.
 Middlemass T. (Thomas, c1856-1922). 048:0209
 Middleton R. A. (Roderic A., c1856-1927). 064:0389.
 Middleton R. S. (Richard Stephenson, c1569-1939). 055:D160.
 Milburn A. (Alfred, c1835-1930). 046:0460.
 Miller A. L. (Arthur Liberty, 1881-1918). 034:0789.
 Miller G. H. 030:0331.
 Miller T. (Thomas). 002:0059
 Miller W. (Wallace, ?-1928). 045:0461.
 Miller W. (William, c1849-1929). 045:0461.
 Miller N. S. (Neil S.). 077:0107
 Millican T. 047:0361
 Mills F. (Frederick, c1879-1945). 065:0251
 Mills J. P. (Jennifer Padget, c1851-1956). 042:0258
 Milne G. F. (Grant F.). 100:0097.
 Milne J. A. (James A., ?-1986, Sr.) 092:D085.
 Milne P. A. (Peter Alexander, 1915-?) 096:0151; 103:0001.
 Milne W. J. (Walter J., ?-1937). 053:0188.
 Milne W. J. (William J., c1859-1932). 048:0006.
 Milton J. H. (James Hugh). 073:0255; 078:0193.
 Milton J. F. (James Taylor, c1850-1932, Dr.). 004:0245; 050:D178.
 Minnaus K. J. (Knut J.). 100:0009
 Mitchell C. (Charles, 1829-1893). 012:0245.
 Mitchell G. H. G. (George H. G.) 093:0015.
 Mitchell J. A. 067:0351.
 Mitchell J. M. 097:0025.
 Miyazaki T. 073:0135.
 Moffatt W. G. (William Graham, c1866-1940). 059:D147
 Mohr G. (George, c1859-1926). 046:0460
 Mohr A. A. (Alexander Andri, c1867-1944). 061:0227
 Mulligan J. 043:0281.
 Moncrieff J. M. (John Michael) 022:0121.
 Monkhouse S. L. (Samuel Brass, c1886-1947, Lt. Col.) 062:0225; 062:0209.
 Montgomery L. (James, c1873-1962, Dr.). 044:0197; 054:0155.
 Moore D. L. (David Ian) 076:0445; 080:0185; 082:0271; 101:0019.
 Moore H. (Harold) 039:0192.
 Moore J. (John, c1882-1929). 056:D155.
 Morrison A. M. (Andrew Morrison, c1885-1953). 070:D205.
 Morrison D. B. (Donald Burns, c1858-1925). 009:0109; 013:0321; 015:0183; 015:0295; 021:0192; 021:0255; 029:0351; 031:0023; 041:0435.
 Morrison T. (Theodore, Sr.). 045:0017
 Morrison T. (Thomas, ?-1946). 063:0209.
 Morrison W. M. (William Macdonald) 063:0027
 Morley T. B. (Thomas Turner, c1882-1941, Dr.). 055:0055; 057:0149
 Moxall A. (Arthur, 1939-?) 058:0151
 Morris J. F. (James Foster, c1922-1950). 066:D189.
 Morrison R. C. (Robert Christopher) 065:0153
 Morris J. (John, c1876-1949). 026:0301; 034:0083; 036:0381; 065:D153
 Mortensch K. (Karl). 093:0059.
 Morton K. S. (Kenneth Stoney, c1907-1945, Maj.). 060:D186.
 Morton L. T. (Leslie Taylor). 057:0151
 Morton W. (William, c1873-1956). 072:D168.
 Moss B. (Ben, Dr.) 091:0158
 Mountain K. A. (Kenneth Arthur, c1874-1956). 072:D168
 Mountain W. G. (William Charles) 007:0268; 011:0113; 023:0129
 Mowat G. A. (George Alexander, 1847, Dr.) 091:0089
 Muckle W. (William (Doc), c1912-1977, Prof.). 059:0209; 060:0101; 072:0329; 074:0223; 065:0413; 070:0320; 072:0029; 074:0391; 079:0154; 080:0219; 092:0149; 083:0105.
 Mudd J. W. (Joseph William, c1897-1962). 080:D082.
 Mudd P. A. (Percival Arthur, c1897-1957). 074:D142.
 Mudd T. (Thomas, 1852-1890). 003:0355; 015:0263
 Muir J. (John, c1868-1933). 066:0460.
 Muir R. (Robert, ?-1928). 064:0389
 Muir R. H. (Robert Hore, c1852-1915, Maj.). 012:0095; 02:0314.
 Muirhead P. H. (Peter Hugh, c1905-1958). 074:D142.
 Mutherie G. F. (George Frederick, c1859-1961). 058:0165
 Muller J. C. F. (J. C. F., ?-1921). 048:0351.
 Munnick O. H. (Ove Holger, c1875-1948). 065:D133
 Munnella V. A. (Victor Alessandro). 032:0191
 Munro D. J. (D. J., Capt.). 040:0528
 Murdoch R. (Robert). 079:0237
 Murata M. 069:0075.

SECTION 3: PERSONAL NAME INDEX

- Murphy T. J. 080:0101.
 Murray A. J. (Ainsie J.). 025:0227
 Murray D. (David, ?-1923). 036:0588
 Murray J. C. (J. Campbell). 103:0092.
 Murray J. M. (John M.). 075:0239; 081:0261, 083:0092.
 Murray-Phillipson H. R. (Hylon Ralph, c1902-1934). 056:D178
 Myerz N. (Norbert, c1877-1948). 055:D151.
 Myles D. (David, c1857-1934). 006:0157; 050:D178
-
- Napier R. J. (Richard John, c1859-1893). 007:M044.
 Nell J. (John, ?-1964). 022:0241; 023:0279; 045:0293; 081:D111
 Nelson D. (Douglas, ?-1962). 080:D082.
 Nelson G. (George, c1877-1963). 179:D182
 Nevils W. (William, 1833-1928). 024:0122.
 Newall F. S. (Frederick Stirling, c1855-1930). 045:0463
 Newbigin H. T. (Henry Thornton, c1854-1928). 045:0441
 Newell P. B. (Percy Bramwell). 027:0233
 Newell W. S. (William Stark, c1879-1954). 071:D134.
 Newitt L. 009:0043
 Newman A. D. (Arthur Derek). 072:0265; 074:0357; 086:0057.
 Newman B. (Brian, 1947-). 105:0002
 Newton R. N. (Robert N.). 076:0079
 Nichol B. G. (Byron Gray, ?-1832). 003:0027, 068:0103.
 Nicholson T. C. (Thomas Carrons, ?-1929). 056:0380.
 Nicol T. S. (Thomas Stirling, ?-1973, NECIES Sec.). 077:0151; 190:0029.
 Nicolson D. (Cap.). 054:0099.
 Nicolson J. H. (John Heslop, c1884-1931). 147:1442.
 Nicolson J. T. (Prof.). 007:0205
 Nisbet W. R. (William Bradford, c1830-1942). 159:D159
 Nishikawa K. 106:X016.
 Nishimura M. (1936-). 054:0091.
 Nithsdale W. (W. Helen, c1909-1949). 065:D133
 Nixon J. (John, c1851-1903). 023:0587.
 Nixon W. (William, 1824-1916). 033:0287.
 Noble A. (Andrew, 1821-1915, Sr.). 025:0033, 031:0002; 032:0314
 Noble C. S. (Charles Sidney, c1832-1959). 075:D181.
 Noble G. (George, 1842-1901). 01:0255
 Noble H. (Harry, 1861-1929). 046:0462
 Noble P. (Percy, c1899-1964). 080:D082.
 Noble T. (Terry). 130:0033
 Noble W. J. (William Joseph, 1823-1925, Hazon Kirkcaldy). 028:0025; 052:D137.
 Noether J. (Joseph, c1851-1904). 010:0067, 021:0345.
 Nordberg B. V. E. (Bruno Victor Edward, c1844-1946). 062:0238.
 Nordenström N. 083:X076
 Norch J. M. 073:0087.
 Norris C. 028:0049.
 Northumberland. (Duke of, 1846-1918). USE: Percy F. G.
 Northumberland. (Duke of, 1830-1832). USE: Percy A.
 Noton F. R. (Francis Robert, c1863-1937). 054:1087
-
- Oatley H. B. (Henry Bejelow, c1876-1962). 079:D165
 O'Brien T. P. (Thomas Praeger, c1719-23; 073:0403; 075:0355; 081:0233; 084:0149
 O'Connor F. R. C. 080:0185.
 Odabasi A. Y. (A. Yusef, Dr.). 064:0053, 100:X165.
 Ogilvie D. G. (Douglas Gordon, ?-1985). 102:0055
 O'Hara D. (Desek, 1927. R. Adm.). 089:0051.
 Ohbayashi S. (Shigeko). 097:0135
 Ohno I. (Osae). 196:0127.
 Ohno K. (Kenichi). 097:0135.
 Oltham M. C. 075:0139.
 Oliver J. S. (James Stuart, ?-1952). 095:D128
 Olton P. J. (Fred J.). 091:0109
 Oram H. J. (Henry John, 1858-1939, Engg. V-Adm. Sr.). 055:D169
 Orbeck F. (Fritz). 079:0263; 079:0301; 133:0058.
 Orde E. L. (Eaton Lancelot, 1853-1929). 017:0641, 028:0249, 032:0233, 034:0007; 034:0683; 053:0003; 057:0449.
 Orde S. (Simon, c1854-1933). 099:D138
 Ormstein H. (Hansig, c1888-1956, Dr.). 051:0075; 073:D130.
 Ormond J. G. (John Grey, c1871-1929). 046:0442
 Ormston J. M. (John Maurice, c1886-1971). 065:0261; 087:0179
 Orr L. F. (Leonard Frank, c1889-1922). 039:0678
 Osborne-Mass D. M. (David M. J.). 104:0075.
 Osborne T. B. (Thomas Broadbent, c1888-1959). 077:D123
 Osler A. G. (Adrian G.). 103:0072.
 Ostery J. (Joseph, c1874-1940). 056:0205.
 Ouley A. (A. Fred, ?-1934). 071:D134
 Ouzwa H. (Hassan). 102:0139
-
- Paddon W. W. (William Wase, c1884-1950). 066:D159
 Paffen J. A. H. (James A. H.). 066:0031; 098:0015.
 Page F. J. (F. J., ?-1916, Engg. L. Cdr.). 032:0354
 Pains H. E. H. 078:0657
 Palmquist A. V. (Alf Valdemar, ?-1941). 058:D160
 Panagopoulos E. (Eugenos). 059:0147
 Parish W. E. (W. F. Jun.). 022:0061
 Park R. (Robert, c1831-1906). 142:0389
 Parker G. (George). 078:0215
 Parker M. N. (Maurice Norman). 078:0387; 082:0115; 088:0151; 111:0198
 Parker T. J. (John J.). 097:0005
 Parry M. R. (Michael R.). 151:0183.
 Parsons A. D. C. (Arthur David Clerk). 013:0035.
 Parsons A. G. (Algernon George, ?-1918, son of C.A. & K.). 024:0282
 Parsons C. A. (Charles Algernon, 1854-1931, Snr, wife K.; son A.G.). RT: Parsons Laurence (in Subject Index). 034:0177; 023:0157, 028:0249, 029:0257, 029:0025; 029:0100; 050:0025, 050:0382, 043:035, 047:0405, 053:0031; 053:0053.
 Parsons G. L. (Gregory Lawrence, c1879-1956). 072:D168.
 Parsons K. (Katherine, ?-1933, Lady, Easton C.A., son A.G.). 035:0227, 050:D181
 Parsons N. C. 089:0331
 Pashley R. L. 102:X038.
 Paterson J. W. P. 093:0165
 Patteeve G. (Guerra, 1941. Dr.). 091:0051; 100:X004.
 Paton D. S. 025:0093.
 Paton W. E. (William Evans). 072:0217.
 Patterson J. (James). 100:0173; 064:0038.
 Patterson J. R. (John Roland, c1902-1960, Cdr E.). 077:D123.
 Patterson R. G. (Robert Owen, c1877-1949). 062:0170
 Patterson T. H. (Thomas Harry, c1879-1928). 146:0462.
 Patterson W. S. (W. S., Dr.). 068:0093.
 Pattie B. (Brian, c1924-1945). 062:D170.
 Patton J. (James). 059:0147.
 Paulin W. J. (William Joseph, c1870-1952). 159:0101; 069:0129
 Paulin W. S. (William Spencer, 1907-1996). 050:0301; 074:0395; 085:0009; 107:0036.
 Payne J. (Jack, c. 1871-1907). 049:0185
 Peach R. W. (Robert W.). 103:0086; 103:0115.
 Pearson D. L. (Douglas Lee). 156:0886.
 Pearson H. M. 082:0059
 Pettison T. E. 072:0157.

SECTION 3: PERSONAL NAME INDEX.

- Peel D P. (David Park, ? 1955). 071:0135.
 Fellow E L. (Ernest John, c1886-1942). 059:0159
 Pemberton H N. (Horatio Nelson, ? 1867). 055:0205; 076:0285; 082:0215; 083:0149.
 Penny P W. (Peter William, c1909-). 038:0109; 101:0349; 103:0903; 104:0129.
 Pennington W A. 083:0245.
 Pepper D J. (Donald John). 076:0135.
 Percy A. (Alan 1880-1930, Duke of Northumberland). 046:046.
 Percy E. (Eustace, c1867-1958, Lord Percy of Sikel). 066:0153; 074:0145.
 Percy H G. (Henry George, 1846-1918, Duke of Northumberland). 034:0379.
 Perrett J R. (Joseph Richard, 1848-1918). 030:0377; 034:0385.
 Perring W G A. 090:0321
 Perrod J H. (Joseph H.). 019:0107.
 Peterson C E. (Carl Edward, c1897-1946). 061:0227
 Peterson T. (Thomas, c1891-1947). 061:0210.
 Petre J. (James). 067:0393
 Petersen J W E. 087:0117.
 Peterson C E. (Carl Edwin, 1843-1917). 034:0357
 Pethbrick R H. (Richard Hugh, 1950-). 092:0177
 Phillips H. (Hylton, c1866-1935). 052:0144.
 Phillips R. (Roland, c1863-1906). 023:0598.
 Pickering A B. (Alfred Ernest, ? 1935). 071:0135.
 Pickworth A. (Alfred, c1885-1956). 038:0509; 073:0150
 Pierce F. (Frank). 050:0127.
 Pieterse G W. (Gerardus Wilhelmus, c1918-1967). 079:0116
 Pigott S J. (Stephen Joseph, 1871-1955, Sir). 057:0095.
 Pimour W H. (William Henry, c1877-1952). 048:0175
 Pinkney E W R. (Edmund Walker Kerry, 1876-1960, Col). 057:0149
 Pinkney T. (Thomas, c1843-1932). 050:0191
 Pirl J W. (James Wilson, ? 1947). 064:0195.
 Pirret R. (Rudolf). 040:0023.
 Pitid s-Proutans T M. 087:0093.
 Plamix J M. (Dr). 090:0133.
 Platt E W H. (Edward W H, Gen). 082:0017.
 Playle T S. (Thomas Samuel, ? 1910). 031:0305.
 Poilock W. (Walter). 042:0175
 Polikas C N. (Costas N.). 103:0089
 Poole L P. (Dr). 060:0077.
 Poole A H. (Arthur Henry, ? 1961). 058:0165.
 Pope J A. (Dr.). 072:0153; 075:0285; 075:0731
 Porcius R M. (Ross Mackinnon, c1930-1982). 078:0155
 Porthouse D T C. (David T C.). 099:0088
 Potter M R. (Marcus Rankin, c1896-1956). 077:0151
 Potts F J. (Frederice John, c1905-1961). 078:0155
 Potts R S. (Robert Sydney, c1907-1957). 073:0151
 Potts T G. (Thomas Gibson, c1875-1956). 039:0541; 053:0157; 073:0152
 Pounder C C. (Cathryn Coulson, 1891-1982). 061:0183; 062:0211; 065:0253; 074:0311; 096:0165
 Powell L S. (Lewis Stanley, c1904-1940). 057:0149
 Powton W A. (W. Allan). 104:0117
 Pratt T. (Thomas, c1890-1953). 070:0202.
 Pratt W. (Walter). 051:0103; 076:0157
 Preese A. (Arnold), c1865-1958, Prof). 075:0181.
 Prescott J C. (James Cumber, 1894-1964, Prof). 057:0155.
 Prest S E. (Stanley Faber, c1899-1932). 047:0443.
 Preston J H. (Dr.). 092:0017.
 Price J. (John, 1825-1903). 105:0243; 015:0275
 Pringle A. (Alfred, c1898-1926). 042:0389.
 Pringle J G. (James Guilliam, ? 1935). 050:0144.
 Prohaska C W. (Carl William, Prof). 078:0148
 Pullin V B. 166:0315.
 Purdie A. (Alexander, c1886-1941). 060:0193.
 Purdie P. (Peter, ? 1951). 067:0144
 Purdie W H. (William Hamilton, 1888-1971). 065:0207; 066:0231; 070:0497; 087:0170.
 Purvis F W. (Frederick W, ? 1915). 022:0334.
 Purvis R D. (Richard Des, c1871-1925). 042:0389.
 Putnam W. (William, 1835-1897). 013:0269
 Pyk H. 064:0071.
 Pymon F C. (Frederick Crosswell, ? 1986). 082:0392.
 Pymon M F. (Michael Francis). 047:0059
 Pyne F D. (Frederick Denis, c1883-1919). 026:0585.

 Quack E A. (Eric Aiken, c1874-1950). 066:0199.

 Rartliff A T. (Aron T. Dr). 063:0015; 101:0183
 Raine A J. (A. Fred Ingh, c1884-1940). 066:0155.
 Raiaic J E. (James Edmondson, c1885-1928). 045:0443.
 Ramage J T. (John Thompson, c1865-1934). 051:0187
 Ramsay J W. (John Walter, c1852-1905). 022:0277
 Ramsay N F. (Norman Frederick, c1863-1935). 051:0193
 Ramsay R. (Raymond). 085:0073.
 Ramsey B W. 072:0021
 Ramzan F A. (Fakhir A.). 100:0075
 Rang E J. (Edmund John, c1800-1957). 073:0152
 Rang H A J. (Henry Albert John, ? 1941). 057:0149.
 Rappoport F G. (Frederick Gould, c1876-1934). 051:0135.
 Raver V L. (Vincent L. Sir). 038:0175.
 Rayleigh (Lord), USE Steph R J
 Rayner L W A. 075:0267.
 Read A. 096:0363
 Readhead J. (James, c1853-1930). 046:0155.
 Readhead J. (John, c1840-1926). 043:0302
 Readhead J H. (James Hunter, 1879-1940, Sir). 056:0156
 Reay B W. (William, c1866-1948, Sen). 038:0317; 064:0196
 Rebeck F E. (Frederick Ernest, c1878-1964, Sen). 080:0182.
 Redpath D G. (David G.). 046:0013
 Redshaw J S. (Joseph Stanley, 1885-1957). 054:0146
 Reece A R. (Alan R., Dr). 062:0058.
 Reed B. (Brian). 058:0143.
 Reed J W. (Joseph William, c1855-1932). 048:0211.
 Reed N H. (Norman Henry, c1890-1952). 069:0129
 Reed T A. (Thomas Alfred, c1860-1931). 048:0211
 Reed W. (Walter), c1875-1948). 065:0159
 Rees D. (Daniel, c1867-1929). 040:0551
 Rees W J. 017:0139.
 Reeves F. (Capt). 094:0147
 Reid F H. (Francis Henry). 058:0129.
 Reid W. 082:0143
 Reimism J. (John, ? 1923). 040:0553
 Renbaldson C. (Charles, c1858-1924). 040:0553.
 Renbaldson J M. (Joseph M., 1867-1916). 033:0287
 Renon R. (John, ? 1954). 071:0136.
 Renwick G. (George, c1850-1931, Sen). 017:0443
 Reynolds E. (Edward, 1825-1885). 012:0045
 Rhind G M. (George Mackenzie, c1873-1920). 036:0585
 Rhodes H C. (Robert Cecil, c1898-1961). 047:0124.
 Rhinart H R. (Harry Robert, 1883-1944, Sen). 034:0257; 067:0069.
 Richards J E. (Joseph L., Dr). 063:0051; 069:0045; 070:0343
 Richards W G. (Walter Cargill, c1875-1950). 066:0199.
 Richardson D G. (David G.). 103:0089.
 Richardson E G. (Dr.). 048:0131; 054:0277
 Richardson J. (James, c1800-1828). 062:0301; 045:0443
 Richardson J R. (J. Roy). 095:0189
 Richardson J W. (John William, 1817-1938). 067:0317; 024:0757.

SECTION 3: PERSONAL NAME INDEX.

- Richardson P D. (USE: Denham-Richardson P)
 Richardson T. (Thomas, 1821-1890) 007-M044
 Richardson T. (Thomas, 1846-1906, Sir). 011-0012; 023-0022
 Rickaby A A. (Alfred Austin, c1839-1924). 021-0045.
 Riddlesworth W H. 040-0528.
 Ridgely Nevitt C. (Cedric). 062-0351
 Ridley M W. (Matthew White, 1932-1954, Viscount). 080-0083.
 Ridley T. (Tony). 102-0033.
 Rigg E H. (Ernest Haerford, c1876-1956). 073-0212
 Rilser R M. (Rolf Martin, 1958-). 101-0049.
 Rilken H. 079-0165
 Rikshrim J B. (Jens B.). 098-0023.
 Riner W T. (William Thomas, ?-1950) 067-D194
 Riseley H E. (Harry Lorimer, c1870-1933). 049-0185.
 Ritchie R J H. (Ronald James Hewson, c1893-1955) 051-D'95.
 Ritson A. (Arthur, ?-1920, Sir) 036-0585.
 Ritson S M. (Stanley McKenzies, c1869-1938) 055-D171
 Rizek W. 101-0075.
 Roberts D K. (David) Kerr, ?-1951) 077-D124.
 Roberts H T. (Hugh Forsdale, 1882-1958). 080-0257.
 Roberts K A. 104-0031
 Roberts T J. (Thomas Joseph, c1888-1958). 074-0146.
 Roberts W C. (William Cringle, c1843-1919) 036-0587.
 Roberts W J. (William J.). 086-0042.
 Robertson J M. (John MacTavish, c1897-1963, Dr) 070-0217, 079-0162
 Robertson N P. (Nas. Philip, c1875-1944) 061-0227.
 Robertson W S. (William Scot, 1898-1978) 034-0391
 Robinson A. (Albert, c1874-1931) 047-0443
 Robinson C O. (Charles Ogilvie, c1876-1919). 055-0585.
 Robinson J. James, c1862-1922). 043-0181.
 Robinson S. (Sammy, c? ? ?-1940, S-L) 057-D151
 Robinson W L. (William Ewart, ?-1915, 2nd Lt). 032-0331.
 Robson A. 095-0177.
 Robson E. (Edward, c1864-1922) 034-0629.
 Robson F. (Frederick, 1844-1901) 017-0255
 Robson G. (George, 1844-1908). 024-0367
 Robson J M. (?-1927) 057-0452
 Robson M. (Mark, c1872-1940). 056-D156.
 Robson N E. (Nathaniel Edwards, c1871-1946). 063-D240
 Robson S J. (Stanley James, c1889-1949). 085-D154.
 Robson W. (William). 078-0025.
 Rock G H. (George H., ?-1946, R-Adm). 054-0113; 063-0040
 Rodetick J W. 057-0255.
 Rodgers H K. (Henry Knight, c1920-1955) 072-D169
 Rogers C H D. (Charles Hartley Schoount, c1901-1958). 054-0083 076-D107
 Rogers W. (William, c1886-1953). 072-D169.
 Roith O. (Oscar). 104-0053.
 Rolland A. (Alexander, c1857-1923). 037-0453
 Rolland J. (John, c1857-1943). 050-D181.
 Ropner J V. (Jeremy V.) 100-0147
 Ropner L. (Leonard, 1873-1937). 084-0237.
 Ropner R. (Robert, c1893-1933) 050-D181
 Rosen E. M Q. 083-0006.
 Rose A. 090-0077
 Rose M. (Matthew, c1866-1937) 053-D149
 Rosen J. (Jesse, ?-1963) 080-0083
 Ross A J C. (Archibald John Campbell, 1867-1932) Sir, 032-0417; 039-0007, 040-0028, 040-0517, 047-0425
 Ross C T F. (Carl T. F., Dr). 087-0013.
 Rotherham L. 058-0277, 060-0227
 Routhwaite J M. (John Macrae, c1884-1953). 073-D169
 Rowan J. (James, 1851-1906) 024-0298
 Rowe J A. (John A.). 061-0073; 065-0135.
 Rowe S J. 088-0031.
 Rowell H B. (Harrier, Babington, 1836-1921, Sir). 057-0005, 038-0586.
 Rowell H B R. (Harrier Babington Rowell, 1836-1921, Sir) 051-0139, 057-0017; 054-0217; 098-0074.
 Rowley C. 076-0079
 Rowson N S. (Norman Stanley, c1901-1957) 076-D146
 Roy W A. 076-0157.
 Ruck-Kuere H A. (Harry Arthur, c1866-1932) 049-D185.
 Ruddock P W. (Percy William, c1838-1948) 063-D154
 Rudkin R J W. (Richard J. W., c1924-1984). 101-0045.
 Runciman W. Walter, 1847-1937, Baron Shoreston. 054-D238
 Runciman W G. (W. Gary). 086-0105.
 Runciman W L. (Walter Leslie, 1906-3) 050-0271.
 Rusden L. (Lowry, ?-1917). 024-0587
 Rusford R. 053-0117
 Rutherford G. (George, 1855-1902). 08-0361.
 Rutherford K. (Koren) 065-0337
 Rutherford R T. (Thomas). 042-0389.
 Rutherford S E. (S. Eric). 092-0123
 Rutherford M W. (Morris West, Jnr, c1850-96). 012-0283.
 Ryan I K. (Ian K.) 104-0143.
 Ryan H S. 092-0025.
 Sachdeva R C. (Dr) 092-0017.
 Salmon J R W. 069-0115.
 Salmon P. (Patrick, c1813-1906) 020-0271
 Salzer J R. (John Richard) 106-0049.
 Sampson W. 080-0077
 Sandeman C H. (Christian Harold, c1878-1946). 062-D170.
 Sandeman J W. (John Watt, 1842-1927) 026-0351; 044-0397
 Sanderson F W W. (Frederic William Wright, c1892-1968) 033-0297
 Sannison M. (Magnus, 1857-1901). 062-0175, 007-0115, 018-0256.
 Sartorius G C L. 044-0345
 Savage A N. (Arthur Noel). 104-0153
 Schaeffer A G. (Anton Georg, 1834-1903). 050-0271
 Schaeffer A J. (Anton Joseph, ?-1958). 072-D169.
 Schaeffer K. (Dr). 040-0254
 Schmidt-Sorensen J. (Jens). 093-0014
 Schudel G. (Prof). 054-0119
 Schneider P. (Peter, 1946-). 098-0137.
 Scholfield C. (Charles) 022-0015
 Scholfield A. (Arthur, 1857-1930). 047-0443.
 Scholz W. (William, Dr). 070-0295
 Schroll P. 092-0006
 Scott A E C. (Albert Edward Clayton, c1878-1948). 064-D176.
 Scott A W. (Prof) 074-0311
 Scott J. (James, c1856-1926) 036-0687.
 Scott J L. (John Lewis, c1881-1941) 049-0178, 058-D165.
 Scott J R. (John R.). 084-0057.
 Scott K S M. (Keith Stanley Mackintosh, c1884-1954) 071-D139
 Scott R M. (Robert Muir, ?-1931). 076-0202.
 Scott W H. (William Henry, c1829-1867) 018-0356.
 Scott W. (Walter). 060-0193.
 Scott W. (William, c1864-1943). 017-0129.
 Seaton A E. (Albert Edward, 1848-1930) 046-0465
 Seckle J. (James, ?-1923). 016-0255.
 Seaton R D. 100-0006
 Seppel C. (Clarence). 063-0333.
 Sekiya O. 106-0027.
 Seltenrad A H. (Arvid Herdrick, c1889-1942). 060-D184.
 Sel P. (Pradyabh, 1918-). Dr). 102-0059.
 Shand J S. (James S.) 078-0091
 Sharp A E. 013-0105
 Sharp G G. (George Clive, c1874-1960) 077-D124
 Sharp W R. (William Reid, c1831-1936). 072-D171.
 Shaw R. (Robert, c1900-1961) 077-0124

SECTION 3: PERSONAL NAME INDEX.

- Shaw T. (Thomas, c1868-1954). 070:D202.
 Shaw T. E. (Thomas Elwen, c1891-1955). 072:D170.
 Shearer J. R. (John R.). 167:0242.
 Shearer K. D. A. 076:0229.
 Sheekleton W. L. C. (William Launce C., ? 1917). 033:0297.
 Sheedy M. P. (Martin Francis, c1881-1935). 052:D144.
 Shepherd R. B. (Rex Beaumont, ?-c1980). 062:0159; 053:0237; 095:0273; 057:0082.
 Shepherd V. G. (Victor George, 1893-1989, SA). 073:0501; 076:5001.
 Shimizu M. (1937). 093:0107.
 Shinzawa K. 092:X002.
 Shipley E. A. 071:0257.
 Short G. A. (George Anderson, c1887-1948). 061:D197.
 Short J. (Joseph, c1858-1917). 035:0287.
 Short J. H. (John Hadley, c1915-1988). 142:0116.
 Short J. Y. (John Young, 1844-1900). 017:0255.
 Short T. K. (Thomas Smart, 1874-1944). 061:D228.
 Shuttle A. M. (Alexander Montgomery, c1856-1930). 167:0666.
 Shubronk H. W. L. (Henry W. L., 1865-1929). 077:0452.
 Sigvaldson O. 087:0117.
 Silley J. H. (John Henry, 1872-1941). 055:D151.
 Silver R. S. (Dr). 052:0051.
 Silverleaf A. (Alex). 071:0122; 081:0017; 086:0078.
 Sim J. (James, c1884-1947). 064:0197.
 Simmons J. L. L. (John E. L., Dr). 095:0113; 106:0045.
 Simon R. A. (Ransay Alexander, ?-c1923). 040:0553.
 Simpson T. A. 086:0031.
 Sims A. J. (Alfred John, 1937-1977, SA). 077:0185; 094:0026.
 Sinclair J. B. 090:X002.
 Sincor L. (Leslie). 095:0075; 094:0169.
 Sinclair R. (Russell). 001:0131.
 Sisow G. M. 085:0027.
 Sisson H. A. (Henry Arnot, c1887-1963). 023:0247; 080:D083.
 Sisson H. T. (Henry Thomas, ?-1941). 059:D150.
 Sisson W. (William, c1854-1855). 051:D197.
 Sistrason G. (Gilbert, ?-1943). 061:D188.
 Sixwright G. W. 064:0267; 005:0151.
 Sjoberg H. (Harry). 107:0029.
 Skelton R. W. (Reginald Wilfrid, 1872-1956, Eng. V. Adm. Serv). 049:0029.
 Skillman M. R. 091:0147.
 Skinner J. (James, c1834-1920). 035:0587.
 Slaattellid O. H. 093:0075.
 Sloan R. P. 045:0347.
 Smalley G. 040:0355.
 Smart W. H. (Walter Henry, 1889-1918). 035:0585.
 Smalley G. P. 075:0285; 077:0243; 146:0273.
 Smith A. 096:0055.
 Smith A. E. (Gir E). 166:0267.
 Smith C. 092:X005.
 Smith C. H. (Charles Henderson, ?-1938). 144:0391.
 Smith C. N. (Charles Norman, ?-1952). 069:1929.
 Smith D. (Dempster, ?-1963, NSW). 046:0147.
 Smith E. (Eustace, 1861-1902). 018:0361.
 Smith E. H. (Ewen Henry, c1896-1937). 075:0153.
 Smith F. (Frank, Prof.). 043:0205.
 Smith F. C. (Fred C., c1898-1957). 073:0153.
 Smith F. E. (Frank E., Sr.). 073:0183.
 Smith G. A. (George Anthony, 1921-1982). 120:0071.
 Smith H. G. K. (Harold George Scott, c1858-1926). 062:0332.
 Smith J. 069:0317.
 Smith J. L. (James Edward, c1915-1962). 075:0191; 078:D155.
 Smith J. R. (John Edward, c1880-1916). 053:D181.
 Smith L. E. (Leucelot Eustace, 1888-1948). 035:0049; 046:0019; 065:D154.
 Smith S. L. (Stanley Lavigne, c1889-1958, Dr). 054:0135; 075:0181.
 Smith T. (Thomas, 1837-1939). 054:0322.
 Smith T. E. (Thomas Eustace, 1907-1971, Lt Col). 068:0021; 072:0229; 086:0144.
 Smith T. L. (Thomas Lawrence, c1912-1951). 068:0171.
 Smith W. S. (William Stewart, c1873-1947). 163:0241.
 Smith-Keary E. M. (Mrs). 045:0026.
 Smulders F. (Frans, c1871-1937). 054:0238.
 Snaith G. R. (George Robert, 1920-). 088:0151; 094:0216.
 Snel J. F. C. (John F. C.). 021:0152.
 Soliani N. (Nabor, Col.). 047:0446.
 Someya T. (Takemi). 099:0151.
 Sommerville W. M. 087:0251.
 Sopwith D. G. 079:0051.
 Sorensen A. P. A. (Anders Peter Arthur, c1902-1989). 075:D182.
 Soutter I. H. (Ian Brock, c1914-1941, Avig Lt). 058:D165.
 Souter M. J. 085:X005.
 Souter W. A. (William Alfred, ?-1958). 165:0267.
 Southcombe J. E. 044:0207.
 Spanger K. F. (Edward Frank, 1858-1953). 167:0072; 076:0320.
 Spence H. C. K. (Howard C. K.). 130:0011.
 Spence H. B. (Herbert Benjamin, c1877-1947). 164:D192.
 Spence J. C. 066:0153; 007:0219.
 Spence W. G. (William Geddes, 1861-1946). 004:0151; 024:0062; 047:0411; 062:0241.
 Spence J. W. (John Waver, ?-1938). 025:0131.
 Spence W. G. (William Greenfield, ?-1960). 077:D125.
 Spouter J. B. 093:0010.
 Spout W. (William, c1907-1962). 148:0136.
 Spunge J. R. (John Robert, ?-1921). 112:0011.
 Squance J. W. (John William, 1854-1916). 033:0295.
 Stabler G. B. 096:0191.
 Stafford W. (Walter), c1861-1898. 019:0257; 016:0027.
 Stallybrass W. S. (William Swan, ?-1919). 025:0585.
 Stanfield G. 158:0273.
 Stanfield R. 048:0195; 053:0223.
 Staples S. E. 040:0528.
 Stapleton C. L. C. (Charles Estre Croper, c1900-1945). 052:D171.
 Stad J. E. (John Edward, 1851-1925, Dr). 079:0142; 040:0554.
 Stead J. K. (John Kenneth, ?-1917). 033:0297.
 Steel A. (A. Jam). 057:0094.
 Steele R. (Robert, 1859-1915). 029:0071.
 Steele R. (Robert, Sr.). 016:0528.
 Steynag O. (Olof, c1906-1962). 074:0158.
 Stephens J. C. (Joseph Charles, c1869-1924). 040:0584.
 Stephenson C. (Christopher, c1853-1912). 029:0395.
 Stephenson C. (Christopher, c1895-c1961). 097:0382.
 Stephenson C. (Clarence). 071:0249.
 Stephenson G. (George). 133:0075.
 Stephenson J. (John, c1905-1938). 055:D171.
 Stephenson J. W. 062:0061.
 Stephenson R. H. (Richard Henry, c1884-c1955). 071:0136.
 Stevens J. C. 067:0907.
 Stevenson W. (William, c1852-1918). 032:0314.
 Stewart B. (Fred). 071:D137.
 Stewart J. (James, c1860-1943). 054:D160.
 Stewart J. C. (James Charles, ?-1955). 071:D156.
 Stewart W. A. 052:0055; 076:0405.
 Still A. M. (Alexander McArthur, c1873-1951). 067:D191.
 Still W. J. 040:0393.
 Stincker T. C. (1849-1907). 024:0367.
 Stobart F. (Frank, ?-1918). 014:0185.
 Stockbridge J. P. (Joseph Pease, 1885-1918). 034:0385.
 Stodola A. C. (Paul De). 069:0135.
 Stonebrats D. (Dennis). 102:X006.
 Stony G. G. (George Gerald, c1864-1942). 030:0218; 038:0156.
 Stony A. (Arthur, c1906). 072:0227; 002:0119; 103:0396.

SECTION 3: PERSONAL NAME INDEX.

- Stothard N. (Neal, 1969-). 102:0177.
 Straker C. E. (Charles Edmund, c1853-1934). 050:0185.
 Straker E. C. (Edward Charles, c1890-1943, Mgr.). 060:D194
 Straker N. (Neil). 105:0015.
 Stroud H. C. (Henry Clifford, c1894-c1918). 034:0091
 Strub R. E. 060:0143.
 Strutt R. J. (Robert John, 1875-1947, Lord Rayleigh). 253:0052.
 Surtees S. G. (Seiphus George, c1882-1947). 064:D197
 Sutcliffe T. H. (Tom Halwell, c1899-1956). 075:D151.
 Sutherland A. M. (Arthur Munro, 1867-1953, Sir). 069:D129.
 Sutherland W. R. (William Robertson, ?-1964). 282:D084.
 Sutton A. D. (Arthur David, 1953-). 098:0025.
 Sutton R. M. (Robert Morton, ?-1945). 062:D171.
 Svenson T. E. (Tor Egil, 1955-). 100:0011
 Sverdrup C. F. (Cato F.). 094:XD01.
 Swan W. A. 073:0165.
 Swallow G. W. M. (George William Maurice, c1917-1943, Lt.). 066:D188.
 Swallow M. G. S. (Marjorie Gustave Scotchman, c1875-1956). 051:0507; 072:D170.
 Swan C. S. (Charles Sherrin, 1870-1944, Sir). 051:0228.
 Swan E. W. (Ernest William, 1867-1942, Gen.). 049:0256; 054:0157.
 Swan G. (George, c1898-1958). 074:D146
 Swan H. F. (Henry F., 1842-1938). 013:0013; 024:0372
 Swan J. (James, c1883-1948). 064:D197.
 Swayne R. O. (Ronald O., ?-1902, Sir). 098:0065.
 Switzer R. W. 102:XD02.
 Swenson L. (Lester, c1926-1963). 079:D166
 Swift H. G. (Herbert George, ?-1942). 063:D241.
 Swinburne M. W. (Mark William, 1834-1912). 020:0403.
 Swinden T. (Dr). 054:0177.
 Sykes C. (Dr). 070:0061.
 Tabora M. 092:XD02.
 Tapsell H. J. 051:0151.
 Taranger H. 060:XD03.
 Tate C. B. (Charles Bennett, c1894-1941). 057:D151
 Tate C. H. (Charles Henry, c1818-1922). 038:0600.
 Tate W. B. (William B. M., c1853-1938). 054:D258
 Tatton-Brown P. D. (Capt). 082:0732.
 Taversey J. G. (John Gwynn, c1862-19-?). R-Adm. 052:D100.
 Tazawa K. 064:0151.
 Taylor A. (Alexander, 1844-1918). 101:0107; 104:0305
 005:0151; 022:0202
 Taylor B. (Brian). 105:0052.
 Taylor C. H. R. (Charles Reginald Readhead, c1839-1929). 046:0167
 Taylor C. W. (Charles Washhope, c1856-c1918). 054:0391.
 Taylor D. H. L. 100:0000.
 Taylor D. W. (David W., 1864-1901, R-Adm.). 047:0317
 057:D140.
 Taylor H. G. 034:0357.
 Taylor J. (James, c1890-1945). 064:D197
 Taylor J. (John, ?-1948). 065:D155.
 Taylor J. L. (JSE; Lockwood Taylor J.
 Taylor K. V. (Kenneth V.). 075:0057; 078:0081.
 Taylor M. E. (Maurice Edward, c1905-1938). 055:D171
 Taylor P. F. 081:0175.
 Taylor R. J. F. (R. John F.). 088:0083
 Taylor T. (Thomas, c1868-1939). 055:0131.
 Taylor W. (William, c1876-1949). 065:D155
 Teasdale J. A. (James (Jim) Arthur, 1921-). Dr). 075:0401;
 091:0181
 Tebbott F. B. (Frederick Brian, 1907-). 105:0072.
 Teller E. V. (Edmund Vernon, 1897-1977, Prof.). 079:0221;
 012:0439; 043:0063; 045:0115; 051:0029; 052:0139; 054:0207;
 056:0225; 068:0197; 070:0019; 072:0103; 076:0105; 079:0351;
 084:0161; 089:0067; 093:0105.
 Temple A. (Arthur, c1908-1962). 078:D156
 Temple W. J. F. (Wilfred Joseph Francis, ?-1953). 070:D203.
 Tennant S. M. (Stewart Martin, 1931-). 087:0153.
 Tennyson D'Eyncourt E. H. W. (Eustace Henry William, 1868-1951, Sir). 038:0157; 042:0023; 067:D195.
 Terrill B. J. (Basil Joseph, c1917-1959). 070:0093; 071:0051;
 075:D182.
 Tharfe S. J. P. (Samuel James Pope, 1845-1912). 016:0089;
 030:0636.
 Thomas D. W. 171:0257
 Thomas G. H. (G. Holt). 034:0570
 Thomas J. (John, c1884-1944). 060:D194
 Thomas K. H. W. (Keith H. W., 1923-). 106:0085.
 Thompson E. H. (Erno Eay, c1890-1923). 049:D188.
 Thompson F. (Frank). 105:0097
 Thompson J. (James, c1876-1924). 040:0056.
 Thompson J. L. (Joseph Lewis, 1853-1925). 020:0271.
 Thompson J. A. (Joseph Andrew, 1876-1918). 034:0385.
 Thompson J. S. 061:0051.
 Thompson J. V. (James Valentine, ?-1945). 062:D171.
 Thompson J. V. (John Victor, 1905-1970). 087:0170.
 Thompson J. Y. 081:0215
 Thompson R. (Robert, 1851-1908). 004:0055; 009:0011;
 010:0014; 024:0572
 Thompson R. C. (Reverend Charles, ?-1918). 064:0287
 Thompson R. C. (Robert Cyril, 1907-1967). 052:0215; 055:0061;
 075:0021; 083:0149
 Thompson R. N. (Robert Norman, c1878-1951, Sir). 065:0171.
 Thompson R. O. 105:0082
 Thompson R. V. (Raymond Victor, Prof.). 090:0031; 097:0161
 Thompson W. G. (W.). 060:0073
 Thomson A. S. T. (Phil). 068:D194; D74:0211.
 Thomson J. (James, c1859-1927). ?
 Thorman T. (Thomas, 1867-c1905). 021:0345.
 Thorn W. H. (1857-1908). 120:0322
 Thorne A. L. (Arthur Terrance). 049:0143.
 Thornton B. M. 061:0023
 Thornton J. M. (James M.). 057:0217.
 Thornton W. M. (Walt). 057:0027
 Thornycroft J. L. (John Isaac, 1863-1923, Sir). 044:0390.
 Thorp I. (Ian). 066:0115.
 Thulin I. G. (Ivan G.). 084:0017
 Thwaites R. M. (Richard M.). 075:0125
 Tindall W. H. 056:0279
 Tinger R. H. (Richard Ernie, c1905-1988). 075:D182.
 Tipler W. (W.) 009
 Tizard H. T. (Henry T., Sir). 027:0381.
 Titcher J. W. (Joseph Wright, c1867-1944). 061:D228.
 Todd F. H. (Frederick Henry, Dr). 048:0065; 049:0259;
 050:0249; 055:0021; 058:0081; 063:0345; 064:0192; 076:0021.
 Todd G. W. (1886-1983, Dr). 045:0202
 Todd J. S. (John Stanley, c1866-1956). 072:D171
 Todd S. M. (Stanley Muzatic, c1886-1929). 045:0413.
 Toomer C. R. (Charles Raymond, ?-1925, Lt-Com). 042:0092.
 Towers G. H. R. (G. Harold R., 1910-). 179:0015; 182:0168.
 Towers H. (Henry, c1898-1949). 065:0155
 Townsend H. W. (Howard William, c1888-1942). 052:0051;
 057:0151.
 Townsend R. L. (Robert Lewis, 1925-). Dr). 076:0445; 084:0309;
 089:0023; 091:0109; 095:0165; 100:0006
 Traill R. (Robert, 1869-1928). 045:0442.
 Traupel W. 062:0283.
 Trevena W. N. (William Nicholas, c1862-1943). 040:D185.
 Trevellick R. E. (Capt). 055:0061.
 Treweek H. C. (Harber, Charles, c1882-1963). 079:D164.

SECTION 3: PERSONAL NAME INDEX.

- Tilton S B. 068 0209.
 Tiron R S. (Raymond Smith, ?-1952). 069 D131
 Tivener L. (Laurens). 054-0321; 056-0691; 067-0289.
 Trause A. H0E:K012.
 Tsakalis N. 083.X007
 Tatch M. 098 0075
 Tauney R. 094:0151
 Tucker E G. 080.0041.
 Tucker J S. 095:0049.
 Tully J E. (James Ernest, c1851-1931). 047.E446.
 Tully R. (Robert, c1879-1914, Capt). 033 0606.
 Turnbull G. (George, c1868-1933). 050:0183.
 Turnbull J. (John, c1873-1926). 053 D181
 Turnbull N G. (Norman George, c1879-1954). 071:0137
 Turner J K. (John K.). 104:0117
 Turner R C. 074:0235.
 Tutin J. (John). 041.0053
 Twaddell J L. (James Lindsay, c1857-1932). 025:0231; 048 D211.
 Twaddell G H. (George Herbert). 033 0033.
 Twerdoff R H. (Ralph Hart, 843-1885). 032:0091; 012:0249.
 Tweedy G F. (George Frederick, c1871-1921). 072:D171.
 Tweedy J. (John, 1850-1916). 019:0013; 019-0219; 022:0015; 021:0035, 022 0314
-
- Uhlstrom O. (Olaf). 002:0131.
 Urvin A. (Alexander). 105 0086
-
- Valter A. (Arthur, c1867-c1955). 071:D137.
 Van Aalderen F G. (Francis Gerard). 065.0375
 Van Beurkom W B. (William H.). 097:0125
 Van Der Post J L. 091:0129
 Van Donselaar A. (Arie, 1899-1921). 048 0167; 053:0181.
 Van Lanoyeren W P A. (Wilhelmus F. A., Prof). 055-0115; 070:0279
 Van Maron J D. (Dr). 070:0278.
 Van Sandick R A. (Rudolf Adriaan, c1856-1933). 046 D188
 Vane-Tempest-Stewart C S H. (Charles Stewart Henry, 1879-1949, Manager of Londonderry). 065 D151.
 Vaughan R. (Roger, 1944-). (Dr). 085 0099; 091 D181; 094.X032; 100:0113; 108:0055.
 Vaughan W S. (William Stearns, c1844-1925). 041:0035
 Vaucuseur J. 003.0293
 Veikter B. (Dr). 107-0117
 Veikter G. (Georg, 1896-1967, Dr). 072:0045; 083 0149.
 Velch A P. 077.0225.
 Venus J. (James, ?-1992). 088:0131.
 Verrill F D. (Francis Denis). 042:0050.
 Verrill F H. (Francis Henry, c1875-1933). 051 D195
 Vick H H. (Henry Hampton, c1880-1952). 06:0111 31
 Visher S G. 014.0083 045 0055
 Vogel R F. 100.0049
 Valey G C. (Gus C.). 150 0135
 Van Guntzen H E. 079:0321.
 Vayse) R G. (Reginald George). 056 0065
-
- Wadapaki Y. (Yasuro). 025-0251.
 Waddingham W H. (William Hart). 022:0229
 Wadling J P. (Jack Tarr). 055:0019
 Wades E F. (Edward Frederick, c1895). 004.0097; 008:0018; 008 0141 012-0249.
 Wade J. (James, 1823-1899). 015:0253.
 Wade W G. (W. Godfrey). 070:0377
 Waike G H. (George Harry, c1889-1937). 053 0182
 Wakenon S W. (Samuel Wing, c1877-1940). 056.D156.
 Walker H. (Harry, c1856-1900). 046-0467
 Walker H G. (Herbert Oswald). 051:0141; 094:0126.
 Walker H P W. (Hugh Percy Wigham, 1885-1917). 033 0294.
 Walker J. (John). 103.0029.
 Walker J J. (John Johnson, ?-1918). 03F:0587
 Walker R J. (Robert John, 1870-1934). 033 0157; 028-0249; 028.0257; 035:0073; 043:0155; 049-0017; 050-0017; 051-0079; 053 D187.
 Wallace W. (William, 1851-1930, Sr). 075:0160
 Wallace W D. (William Dugald). 071-0291.
 Waller D N. (David N.). 105 0123
 Walliker J F. 008:0055; 012.0223
 Wallis R. (Robert, ?-1924). 013:0131; 040:0354.
 Wallis R P. (Robert, Perdurans, c1892-1965). 081 D111.
 Walton L B. (Laurence Ball, c1903-1948). 064:0199.
 Wans G. (Oswald, c1880-1951). 057:0198
 Warburton F J. 018 0071
 Warburton J. (John, c1846-1927). 043-0302.
 Warburton J A. (John Arthur, c1871-1929). 045 0446.
 Ward G. (George, 1930-). (Dr). 057-X035; 055:0177; 098-0049; 100 X392; 105 0051
 Ward J. (John, 1847-1921). 028:0136.
 Warley A. (Alexander, c1892-1954). 070 D203
 Watanabe T. 096:0075.
 Watson D W. (David William, c1921-1946). 033:0241.
 Watson J S. (Joseph Samuel, c1870-1934). 036:0486; 051 D196
 Watson K. (Kenneth, c1879-1953). 044.0245; 089:D131.
 Watson M. (Michael, c1855-1905). 02-01345
 Watson P H. (Patrick B.). 090-0165; 103:0172; 107:0149.
 Watson R G. (Richard Goswami, c1925-1944). 060 D194.
 Watson R H M. (Richard Henry Watson, ?-1955). 071:D137.
 Watts E H. (Edenrose Harney). 056 D194
 Watts P. (Philip, 1846-1926, Sir). 042.0592
 Wauv D. (Demetrius, c1871-1956). 107-0157
 Wawn E A. (Edgar Allen, c1880-1951). 068:D171
 Wawn T N. (Tom Noel, c1873-1948). 064 D199.
 Weatherley N. (Norman, c1888-1947). 062.0171.
 Wadgen J. 058:0051.
 Weighon R L. (Robert Leslie, 1851-1937, Prof). 002 0247; 005:0175; 013 0077; 076-0063; 074-0225 053:0182.
 Weir G D. (George Doherty, 1870-1925). 042.0392.
 Weir W D. (William Douglas, 1877-1935, Viscount Eastonhall). 045 0268; 075 D183
 Welch H C. (Hugh Cameron, c1870-1940). 057-0152.
 Welch J J. (John Joseph, 1861-1950, Prof). 025 0177; 032 0137; 066 D210
 Welcomme J F. (John Floyd, 1935-). 077:0161.
 Wells A A. (Dr). 071:0277.
 Welsh M. (John, 1903-). 100 0017
 Wesselo J H. 065.0225.
 West F B. (Frederick Brown, c1890-1955). 071 D138.
 West J. 075 0033.
 Westgarth T. (Tom, 1855-1924). 015:0087; 041.0020; 053 D184
 Wettoner C P. (Charles P., c1871-1938). 055:D173.
 Whately R F A. (Richard Frank T. A., 1914-1968, Cdr). 084 0177
 Wharton W M. (William Mather, 1870-1955, Eng R-6000). 043:0205.
 Whately C. 075 0031
 Whately J H W. 055:0131
 Whetton H. (Ruston, ?-1917). 104 0389.
 Whittis C. 038-0073
 White A F. 027-0189
 White A G. 051.0039.

SECTION 3: PERSONAL NAME INDEX

- White C. (Conrad, c1835-1885). 021:0222.
 White E S. (Ernest Saxton). 028:0029; 029:0047.
 White G J A. (G J A. Esq., ?-1992). 095:0231
 White P. (Peter, c1924-1944). 052:0171.
 White R S. (Richard Saxton, 1847-1922. Gs). 027:0017; 028:0018.
 White W. (William, c1837-1905). 022:0222.
 White W. (William, c1880-1954). 070:0203
 White W A. (William Albert, c1878-1940). 037:0209; 056:0156
 White W H. (William Henry, 1845-1912. Sir). 301:0021; 303:0291; 029:0374.
 Whitehead H H. (Harry Harding ?-1915). 032:0354.
 Whitfield E. (Ed., c1868-1927). 054:0090.
 Whitfield T. (1848-1907). 020:0271
 Whiting W R G. (William Robert Gerold, 1884-1947). 040:0219; 064:0199.
 Whitte D F. (Dudley Ferris, c1905-1967). 079:0164
 Whyte I M. (Ian M.). 091:0159.
 Wickens A J. (Anthony James) 096:0223
 Wigdor I S. 090:0036.
 Wigley W C S. 047:0153; 052:0065
 Wildridge R. (Richard, c1874-1928). 154:0238.
 Wilkinson H C. (Harry C.). 092:0123
 Wilkinson N. (Norman, Lt Col). 035:0237.
 William C L. (Cuthbert Isaac, ?-1953). 069:0131.
 Willenc F W. (Francis William, 1843-1896). 012:0253
 Wilbey H W. (Henry Walker, c1860-1940). 157:0152.
 Willcox P V C. (Percy F. C., c1868-1949). 065:0155.
 Williams H G. (Harris Gregory, 1870-1939). 041:0511; 066:0209; 065:0173
 Williams R. 079:0149.
 Williamson T T. (Thomas Troy, c1895-1937). 047:0446.
 Wilson A. (Albert, c1838-1860). 077:0125
 Wilson A M. (Alwyne Mary, Mrs. NEC Sect.). 101:0208.
 Wilson E. (Edmund, c1873-1936). 046:0351; 053:0182
 Wilson E P. (Edmund Patterson) 050:0325; 054:0067.
 Wilson H M. (Henry Macken). 020:0183.
 Wilson J F. (John Frederick, c1881-1949). 066:0230
 Wilson L B. 088 X001
 Wilson P. (Percy, c1890-1945). 062:0171.
 Wilson R M. (Robert Marshall, ?-1959). 075:0167
 Wilson R W. 079:0277.
 Wilson T. (Thomas, 1843-1893). 006:0047.
 Wilson W. (William) 015:0466
 Wilson W J B. (William James B.). 025:0105; 031:0227
 Wilson W S. (William Strickland, c1867-1953).
 Wilson W W. (William W., ?-1944). 067:0198
 Witton W. (William, c1880-1955). 073:0234.
 Wimple A S. (Arthur S., c1853-1927). 041:0302
 Winkworth W J. (Walter J.). 058:0011.
 Winship T S. (Thomas Syster, ?-1951). 068:0131.
 Winstanley P D. (Philip David, c1855-1943). 059:0160
 Winstanley R H. (Robert Haps, c1862-1950). 068:0200.
 Wise D A. 092:0051.
 Wisson W M. (Eugene Curt) 029:0051.
 Withy H. (Henry, 1852-1922). 017:0014; 018:0017; 018:0600.
 Whitney N A. 064:0389; 066:0295
 Wolfram J. (John, 1936-). 095:0677.
 Wood W. (William, c1836-c1915). 051:0305.
 Woodson J B. (James Brown, 1917-1960. Sr.) 077:0623; 056:0114.
 Woodson W A. (William Armstrong, 1869-1949). 057:0077; 058:0018; 066:0260
 Woodson W C. (Walter Edward) 018:046.
 Woodhead R G. (Richard Graham, 1953-). 059:0131
 Woodward J. 087 X012
 Wootton I R. (Iris) 062:0031
 Wortley H B. (Henry Bell, c1868-1919). 035:0585.
 Wright G H. (George Hudson, c1877-1957). 073:0154
 Wright H C. (Henry Clay, c1878-1950). 067:0195.
 Wright N. (Norman, ?-1961). 076:0156.
 Wright R. (Roger, c1865-1917). 015:0293
 Wurl M. (Max). 020:0017
 Wynd W A. (William Adam, ?-1917). 014:0389.
 Wynne J B. (J Ben). 091:0159; 066:0045; 066:0165.
-
- Yamagata M. (Masuo, Dr.). 054:0281
 Yamano K. (1931-). 093:0107.
 Yamashita I. (Isamu). 102:0037.
 Yarrow A F. (Alfred Ferrarazzo, 1842-1932. Sir). 048:0211.
 Yates H G. (Henry George, ?-1954). 065:0223; 071:0138
 Yellowley G. (George, ?-1980). 070:0343; 078:0351; 106:0115.
 Yeaman J. (John, c1872-1954). 051:0196
 Young A. (Andrew) 011:0057
 Young A W. (Andrew White, c1873-1960). 077:0125
 Young J. (James, c1881-1955). 032:0177
 Young J D. (J.D. Donald Young J.
 Younger M J. 088:0145
 Yousef M R. (M) 068:0059.
 Yuille I M. (Ian M.). 088 X002
-
- Zandiyeh A R K. (A. R. Karimz) 105:0085.
 Zeno G. (Guiseppe, c1902-1964). 080:0084
 Zoller R E. 062:0047; 074:0205.
 Zoller L. (Larus, c1855-1945). 061:0278
 Zousseld J J. 078:0277.

SECTION 4: SUBJECT INDEX.

How to Use the Subject Index:

Arranged in alphabetical order by subject, and then chronologically by index number. Entries are of the form: <subject heading>, <notes & cross-references>, <subheadings & index numbers>

Most subject headings, but not all, are cross-referenced in a thesaurus of controlled terms. Users may thus use the subject headings in a hierarchical manner. Terms used by authors in the titles of papers are included only when it is considered that the term will be useful to users. Extra terms have been added to clarify the titles used by authors.

The great majority of papers are about ships and marine-related activities and therefore the ship, marine, or sea are often omitted from subject headings.

Find your subjects, user, by using the Index Numbers given, search for the full bibliographic references in Section 1: Chronological Index.

Key:

- . = usually indicates inverted word order, e.g. boilers, watertube.
- < > "subject heading" is repeated
- - - "subject heading" and "presented subheading" are repeated, s.e.

Aluminium, RT: Metals - Presidential Addr 057:0017; superstructures: structural design: cargo ships 060:0101; - - 062:0221; - plates: structural strength 064:0223; etc.

Thus the 1st ppr 057:0017 is about aluminium Presidential Addr; the 2nd ppr 060:0101 is about aluminium superstructures: structural design; and that the 3rd ppr 062:0221 is also about the same subjects as the 2nd ppr, aluminium superstructures: structural design; the 4th ppr is about aluminium plates: structural strength.

Subjects:

42 (destroyer, type), USE: Warships.
Abandoning, USE: Casualties, USE: Lifesaving craft & appliances, RT: Boarding, RT: Salvage, RT: Shipping.
Access, USE: Boarding, USE: Cargo handling equipment.
Accidents, USE: Casualties, USE: Safety.
Accommodation design: ships, RT: Ship design, RT: Environment, RT: HVAC, RT: Outfitting, RT: Passengers, - passenger ships 038:0239; - interior design 046:0291; - passenger & cargo spaces: HVAC 056:0221 - HVAC 054:0119; - machinery spaces 067:0315.
Accuracy control: machine tools: gear cutting, RT: Quality assurance, - 013:0161; - 063:0267.
Acoustics, USE: Noise.
Added resistance, USE: Resistance.
Admiral Enterprise (merchant ship), USE: Barges, USE: Merchant ships, USE: Offshore drilling rigs.
Admiralty floating docks, USE: Docks, USE: Naval vessels.
Admiralty gunmetal, LSI: Metals.
Advanced marine vehicles, BT: Ships, NT: Air cushion vehicles, RT: High speed craft, - no specific ppr.
Aerocenter (heavy lift vessel), USE: Heavy lift vessels.
Aerodynamics, RT: Fluid dynamics, RT: Aerofols, RT: Air, RT: Aircraft, RT: Gases, RT: Hydrodynamics, RT: Wind, RT: Wind tunnels, - 052:0121; - ship design & propellers: research 056:0083; - engineering: Lung Lec. 060:0225; - design: propellers: ships 081:0141; - boiler tubes & heat exchangers: vibration 092:0081; - chimney stacks, wind loads: buffing 096:0189; - Shin Aikawa Maru (tanker, not assisted) 095:0075.

Aerofols: propellers: ships, RT: Aerodynamics, RT: Hydrodynamics - 054:0089; - design 081:0141.
Aesthetics, USE: Design, USE: Interior design.
Africa, RT: Continents, NT: Egypt.
Aft ends: ships: vibration, BT: Hulls, RT: Fore ends, RT: Stern gear, RT: Sterns - 087:0117; - hull: form, resistance 095:0197.
Aging, USE: Operations, RT: History.
Agricultural engineering, BT: Engineering, - electrical equipment 045:0547.
Air, BT: Gases, NT: Air carbines, NT: Compressed air, BT: Gases, NT: Wind, RT: Aerodynamics, - model tests at: tailshafts 075:0189.
Air conditioning, USE: HVAC.
Air cushion vehicles, BT: High speed craft, NT: Hovercraft, RT: Aircraft.
Air defence, USE: Aircraft, USE: Missiles, USE: Naval vessels, USE: Weapons.
Aircraft, RT: Structures, RT: Transport, NT: Airships, NT: Flying boats, NT: Helicopters, RT: Hovercraft, NT: Hydroplanes, RT: Aerodynamics, RT: Air cushion vehicles, RT: Aircraft carriers, - Presidential Addr 027:0017; - aerodynamics 030:0350; - warplanes 031:0059; - design 031:0284; - future trends 034:0370; - design: warplanes: WW I 035:0268; - 2-stroke heavy oil engines: propulsion 056:0171; - propulsion: gas turbines: jet engines 062:0143; - propulsion: gas turbines, vibration: research: tin 065:0085; - navigation: gyrocompasses 084:0161.
Aircraft carriers, USE: Warships, RT: Aircraft.
Airships, BT: Aircraft, - helium 025:0286.
Aker H-3 (semi-submersible vessel), USE: Offshore drilling rigs, USE: Semi-submersible vessels.
Alloys, USE: Metals.
Alternating current machinery, USE: Electrical equipment & machinery.
Aluminium, BT: Metals - Presidential Addr 057:0017; - superstructures: structural design: cargo ships 060:0101; - 062:0221; - plates: structural strength 064:0223; - superstructures: structural strength 065:0413; - United States: passenger liners 068:0221; - superheater tubes: steam turbines: creep: steel 069:0227; - plates: riveting: structural analysis: ships 072:0083; - Berge'sford (passenger ship): superstructures 073:0112; - stiffeners: structural strength: ships 075:0225; - ships 076:0085; - testing: metallurgy 076:0183; - decks: scuffings: superstructures: passenger ships 077:0221; - shipbuilding: structural design: fire prevention 080:0219; - structural design: ships 082:0149.
Anti-submersible, USE: Submersibles.
Ammonia: liquefied, USE: Liquefied gases.
Amphibious vessels, BT: Air cushion vehicles.
Analysis, BT: Design, NT: Data processing, NT: Structural analysis, NT: Systems analysis, NT: Wave analysis, RT: Simulator.
Anchor handling vessels, BT: Offshore vessels, RT: Mooring, - no specific ppr.
Anchors, USE: Mooring.
Andrew Lung Lecture, LSI: Lung Lecture.
Animals, RT: World, NT: Fish, NT: Human beings, - aquatic: propulsion: swimming: hydromechanics: Blackbeard Lee: 094:0127.
Annealing, USE: Metalworking.
Antarctic, RT: Cold regions, BT: Comments, - whaling vessels: flying boats: crew transportation 052:0124.
Anti-submarine warfare, USE: Submarines, USE: Warships, RT: Defence.
Anti-subjects, USE: Subjects.
Arcs, USE: Forging & casting.
Appendages: boats, BT: Hull, NT: Barge keel, NT: Barges, NT: Redders, NT: Stern gear, RT: Manoeuvring devices, RT: Nozzles, RT: Stabilising devices, - resistance: rudders: main

SECTION 4: SUBJECT INDEX.

- 032:0341
Apprentices. USE: Education & training
Arc welding. USE: Welding.
Arfoam. USE: Hull form.
Arch principles: ships. USE: Structural design.
Arcle (continent). BT: Cold regions. BT: Continents. - offshore support ships: icebreaking vessels: ship design & operation 103:09:3
Ark Royal (HMS, aircraft carrier). USE: Warships
Armstrong Sulzer diesel engines. USE: Diesel engines
Arrangement. USE: General: arrangement
Art & aesthetics. RT: Design. - wood veneers 056:0281.
Artificial intelligence. USE: Computers
Ashington (ms. sail-assisted bulk cargo). USE: Bulk carriers. USE: Motorships. USE: Sailing vessels
Asia (continent). BT: Continents. NT: Bangladesh. NT: India. NT: Japan
Asia (passenger ship). USE: Passenger ships
Astronomy. BT: Science. RT: Optical instruments. RE: Stars. RT: Universe. - 029:0303. - telescope: Radcliffe Observatory, S Africa 057:0115. - mirrors: Petkova Refractor, S. Africa. Parsons Lect. See C A Parsons 085:0027
Atlantic Ocean, North: cargo ships. BT: Oceans & seas. - performance: structural strength: winter weather 046:03:04. - steam turbines: performance 064:03:53. - performance: trials 074:01:5
Auris (tanker). USE: Tankers
Authors. NECIES. BT: NECIES. BT: Personnel. NT: Personal names in Personal Name Index. RT: Meetings. NECIES. RT: Publications. NECIES.
Automation: general. BT: Machinery. RT: Computers. RT: Operations. RT: Robots. RT: ROVs
Automation: shipbuilding. - plates: optical marking 075:0247. - steelwork: computers: Long Leat 063:0023. - numerically controlled machines 088:0052. - - 089:0121. - robots 012:0399. - welding: CIM 105:0123. - Finland & Lask 104:0143.
Automation: ships. - steam recip engine: governors 020:0189. - manoeuvring: propeller: gyrocompasses 078:0057. - boilers: oil fired: control systems 080:01:01. - machinery: control systems 08:0213. - control systems: computers: views 086:0141. - control systems: electronic machinery 087:0291. - boilers: electronic control 094:0291. - control systems: steam turbines vs diesel engines: electronic future trends 094:0129. - destroyers: Type 42 094:0143. - of model tests: resistance 086:0155. - navigation: system: Long Leat 098:0015. - reliability: control systems 086:0149. - failure mode classifier: societies 088:0012. - marine industry: information technology: artificial intelligence: Long Leat 105:0051. - marine 104:0123.
Automobiles. USE: Motors.
Auxiliary engines. USE: Auxiliary machinery. USE: Engines
Auxiliary equipment: ships. BT: Equipment. NT: Filtration. RT: Lifting: cranes & appliances. - salvage ships 092:0121. - deck 034:0151. - passenger ships 046:0091. - machinery: steam recip engines: tankers 061:0290
Auxiliary machinery: general. BT: Machinery. NT: Fans. NT: Heat exchangers. NT: Pumps. RT: Engines. RT: HVAC. - power stations 028:0175.
Auxiliary machinery: ships. BT: Machinery. NT: Cargo handling equipment. NT: Condensers. NT: Cooling water systems. NT: Winches. NT: Windlasses. RT: Decks. RT: Marine engineering. - electric: lights: power: telecommunication 049:0249. - steam recip engine: performance 017:0001. - oil engines 039:0375. - diesel engines: generators 044:0121. - electrical deck: winches: windlasses: searchlights 046:0363. - 050:0197. - cargo handling equipment: winches: cranes 057:0116. - electrical machinery 060:0185. - alternating current 064:0159. - diesel engine: heavy oil fuel 069:0317. - design & operation: machinery: views 078:0213. - geared steam turbines: design 070:0137. - chain cable lifters: dynamics: status 066:0092
Auxiliary naval vessels. USE: Naval vessels.
Auxiliary sail propulsion. USE: Sailing vessels.
Awards. NECIES: general. SN: student prizes and prize ppt are not indexed, but lists are published annually in the Transactions. BT: Meetings. NECIES. - Treasurer of Soc 032:0380. - retirement. NECIES: founder 047:0421
Awards. NECIES: Honorary Fellowships. - 059:0022. - 065:0141. - 061:0307. - 063:0028. - 066:0152.

Babcock & Wilcox boilers. USE: Boilers.
Baikal (lake, Russia). USE: Inland waterways. LIST: Russia
Balancing: steam recip engines. BT: Steam reciprocating engines. BT: Vibration. - 012:0149. - vibrators: powering 015:0151.
Ballasting: ships. BT: Stability. RT: Draught. RT: Inertness: propellers. RT: Performance. RT: Seakeeping. RT: Seawing. RT: Tanks. - water 014:0077. - - 018:0051. - mechanical: ships: stability: bulkheads 020:0159. - reduced draft: propellers: immersion 048:0026. - - 053:0325. - water: cargo ship: stability 058:0241. - reduced draft: single screw: resistance & propulsion 060:0185. - reduced draft: manoeuvring: vibration 063:0097. - controllable: cargo ships 072:0137.
Bangladesh (country). BT: Asia. BT: Countries. RT: Developing countries. - inland waterways: vessels 100:0153
Banks, credit. USE: Economics.
Barge carriers. RT: Cargo ships. RT: Barges. RT: Tug barge systems. - cargo handling equipment 083:0069.
Barges. BT: Cargo ships. RT: Barge carriers. RT: Inland waterways vessels. RT: Tug-barge combinations. - Peter G Campbell (Great Lakes tug-barge) welded ship 050:0083. - Kince (river): ship model correlation 040:0279. - offshore drilling: semisubmersible & jack-up: Adco Enterprise 076:0157.
Base steel. USE: Steel
Bathyscaphes. USE: Submersibles
Battleships. USE: Warships.
Battleshipness: warships. USE: Ship design: warships. USE: Warships
Beacon Grange (cargo ship). USE: Cargo ships.
Beams. BT: Structural members. - & shafts: structural strength 065:0072
Beam-draught ratio. USE: Hull form.
Beardmore poppet valve engines. USE: Engines
Bearings. BT: Jameson systems. RT: Lubrication. - high speed 050:0218. - geared steam turbines: ships 072:0205. - water lubricated: ships 074:0257. - design 085:0113
Beaver class (cargo ships). USE: Cargo ships.
Bedplates, engine. USE: Foundations
Belfast (port). USE: Northern Ireland
Belgium (country). BT: Countries. BT: Europe. - Zeebrugge (port): containerhips 088:0057.
Belleville boilers. USE: Boilers
Bending: ships. USE: Longitudinal strength.
Bergenfiord (ms passenger ship). USE: Motorships. USE: Passenger ships.
Bevel gears. USE: Gears
Bilge keels. BT: Appendages. BT: Steadying devices. - structural design 063:0097. - resistance: model tests 032:0041. - & hull: rolling motions 056:0020
Biting (steamships): re-engining. BT: Steamships. USE: Conversions. USE: Engines
Bibliographies. BT: Publications. NECIES. 032:1001.
Biographies. NECIES. USE: Personal names: in Personal Name Index. RT: Publications. NECIES. RT: Personnel.
Blackadder Lecture: number & year. SN: after William Francis Blackadder (Walter Runciman & Co Ltd). BT: Lectures. NECIES

SECTION 4: SUBJECT INDEX.

- : 1 '67 083:0131. -: 2 '68 084:0161. -: 3 '69 085:0073.
- : 4 '70 086:0109. -: 5 '71 087:0505. -: 6 '72 088:0131.
- : 7 '73 089:0095. -: 8 '74 090:0117. -: 9 '75 091:0121.
- : 10 '76 092:0131. -: 11 '77 093:0127. -: 12 '78 094:0236.
- : 13 '79 095:0145. -: 14 '80 096:0155. -: 15 '81 097:0073.
- : 16 '82 098:0055. -: 17 '83 099:0051. -: 18 '84 100:0049.
- : 19 '85 101:0059. -: 20 '86 102:0073. -: 21 '87 103:0101.
- : 22 '88 104:0053. -: 23 '89 105:0097. -: 24 '90 106:0107.
- : 25 '91 107:0075.
- Blackadder Lectures: offshore engineering.** - resources 085:0129. - classification: fixed offshore structures 106:0137.
- Blackadder Lecture: propulsion.** -: animals, aquatic: hydro-mechanics 093:0127. -: steam & gas turbines: warships 099:0051.
- Blackadder Lectures: research & design.** - marine industry 091:0121. -: engineering: computation 104:0063.
- Blackadder Lecture: shipbuilding.** -: 085:0073. -: research & innovation: future trends 087:0103. -: economics 088:0131. -: naval architects: consultants 097:0073. -: Europe 101:0089.
- Blackadder Lecture: shipowning.** -: economics 086:0109. -: oil industry: economics: tankers 089:0095.
- Blackadder Lecture: shipping.** -: 085:0073. -: research & education: future 087:0103. -: Great Britain: history & future trends 085:0145. -: consultants: naval architects 097:0073. -: government strategy: Great Britain 100:0089. -: press: marine industry 102:0073.
- Blackadder Lecture: ships & ship design.** -: economic operations: Great Britain 083:0111. -: nuclear powered: merchant ships, future trends 080:0117. -: research: innovation 094:0236. -: bulk carriers & liner cargo ships 095:0065. -: safety 105:0097. -: future trends: regulations: ships 100:0075.
- Blades, USE: Propellers. USE: Turbines.**
- Block coefficient, USE: Hull form.**
- Blockage effects: tank tests, USE: Model tests. USE: Resistance.**
- Bluediel (high speed craft), USE: High speed craft.**
- Bowding ships, USE: Lifesaving craft & appliances. -: no specific jpr.**
- Boatbuilding, USE: Shipbuilding: small craft.**
- Boats, USE: Small craft.**
- Boiler furnaces, BT: Boilers. BT: Furnaces. -: forced draught: 0024:0375. -: forced & natural draught: coal combustion 004:0251. -: ships 006:0151. -: 009:0309. -: efficiency: firing: instruments 014:0155. -: fuel oil: combustion 017:0041. -: structural strength: factors 021:0255. -: reactions 047:0109. -: high-temperature water-tube: radiation 049:0115.**
- Boiler rooms: ships, BT: Boilers. BT: Machinery spaces. -: design & operation 078:0245.**
- Boiler tubes, USE: Boilers.**
- Boilers: general, BT: Steam generators. NT: Boiler furnaces. NT: Boiler rooms. NT: Combustion chambers. NT: Superheaters. BT: Cylinders. BT: Steam engines. -: structural design: maintenance & repair: corrosion: ships 001:0173. -: structural strength: riveting 004:0205. -: corrosion & pitting: ships 005:0195. -: structural strength: 006:0059. -: high pressure: ships: structural design 008:0097. -: 007:0067. -: structural strength 007:0205. -: 007:0219. -: performance, water gauges 007:0373. -: feedwater systems & filters 008:0169. -: water suspended in steam 009:0233. -: structural strength: forging & casting 010:0067. -: welding: maintenance & repair 011:0165. -: condensers: power stations 012:0021. -: maintenance & repair: ships 012:0223. -: high pressure: combustion: ships 012:235. -: high pressure, water gauges 03:0053. -: high pressure: steam: recip engines: ships 015:0185. -: combustion: ships 017:0099. -: Belleville operation: Lloyd Lloyd 015:0155. -: screw 020:0231. -: evaporators: ships 022:0241. -: corrosion: fatigue: ships 024:0029. -: locomotives 025:0287. -: case design: performance: ships 026:0167. -: combustion 029:0191. -: condenser tubes: corrosion 040:0023. -: high pressure: Berneo (tug) 044:0087. -: High pressure: King George VI (river steamer) 046:0260. -: feedwater systems & filters 047:0032. -: corrosion 047:0361. -: general & ships 050:0131. -: history: ships 051:0457. -: water consumption: powering: merchant ships 053:0137. -: maintenance & repair: ships 054:0067. -: La Mont forced circulation: ships 055:0061. -: metallurgy: cracking 055:0111. -: high pressure: power stations 061:0223. -: steam turbines: creep: aluminium: steel: ships 069:0027. -: fuel: supercharging: diesel engines 072:0327. -: nuclear & marine: heat exchangers: ships 074:0205. -: iron tubes: corrosion: ships 076:0065. -: oil-fired: Aris (tanker) 077:0407. -: oil-fired: automation: ships 080:0101. -: tubes: vibrations: aerodynamics 092:0091. -: automation: electronic control: ships 094:0091. -: oval-hull: hollowed hull: ships 099:0121.**
- Bolton, water-tube. -: ships 017:0157. -: 021:0031. -: Babcock & Wilcox: ships 037:0185. -: cargo ships, steam recip vs diesel engines 049:0200. -: Presidential Addr 054:0018. -: design & performance: cargo ships 060:0077. -: 062:0097. -: structural strength: classification 069:0185. -: oil-fired: design: steam turbines: ships 070:0151. -: two-tube, natural circulation: steam turbines: ships 074:0311.**
- Bone Hills (ore carriers), BT: Ore carriers. USE: 030 carriers.**
- Bookkeeping, USE: Management.**
- Books, NECTES, USE: Publications NECTES.**
- Borneo (ss. tug), USE: Tugs.**
- Bowax propellers, USE: Propellers.**
- Bottoms sealed, USE: Sealed.**
- Bottoms ships, BT: Hulls. BT: Slamming. -: structural design 008:0019. -: tying-off: slopholding 036:0138. -: double: structural strength: low-shoed: plates: welding vs riveting 077:0345. -: double: structural strength: 081:0175.**
- Boundary layers: fluids, BT: Fluid mechanics. BT: Hydrodynamics. -: lubrication: oils 044:0207. -: resistance: hulls: ships 074:0341. -: hydrodynamics: computers: ships 077:0167. -: ship-model: correlation 090:0031. -: hulls: resistance 092:0017.**
- Bow thrusters, USE: Thrusters. BT: Bows.**
- Bowen ships, BT: Hulls. NT: Bow thrusters. BT: Bow ends. -: tubular: hull form: resistance & propulsion 052:0065. -: convex vs hollow: merchant ships: model tests: WWII 064:0289. -: bulbous: resistance & propulsion: model tests 066:0295.**
- Brazing, USE: Metal working. USE: Welding.**
- Bridges (of ships), USE: Superstructures.**
- British Empire, BT: Empires. BT: Great Britain. -: economics: trade 033:0203.**
- Brittle fracture, USE: Metallurgy. USE: Structural strength.**
- Bucl system, USE: Turbocargos.**
- Buckling, USE: Structural strength.**
- Buffing, USE: Wind beds.**
- Bulbous bows, USE: Bows. USE: Hull form.**
- Bulges: hull upperedges. HU: Appendages. -: battleships: anti-submarine 030:0031. -: merchant ships: anti-submarine 038:0137.**
- Bulk carriers, BT: Cargo ships. NT: Combination carriers. NT: Dry bulk carriers. NT: Liquid bulk carriers. BT: Large vessels. -: ship design 009:0229. -: CAD: structural design 006:0119. -: shipping: Great Britain: government: future trends 097:0012. -: Blackadder Lect: 098:0055. -: ballasting: combustible 102:0127. -: sail-assisted: use: Ashington: operation 103:0025.**
- Bulkheads: ships, BT: Hulls. BT: Structural design. BT: Subdivision. -: collision: cutters 005:0157. -: engine: steady: stability 02:0059. -: watertight: structural strength 025:0227. -: watertight: subdivision 016:0073. -: tankers 065:0193. -: Starline Banker, structural design: corrugated plates 066:0293. -: tankers: longitudinal strength 070:0137.**
- Bunkers, USE: Fuel.**
- Buoys, USE: Station.**

SECTION 4: SUBJECT INDEX.

Buoys. RT: Floating structures. BT: Mooring. BT: Off-shore structures. RT: Mooring. RT: Ships. - : Kaimoi (wave energy device); trials 097:0135.

Business. USE: Economics. USE: Industry. USE: Trade.

Bye-laws/NECTES. USE: NECTES constitution and bye-laws.

Cable dynamics. BT: Cables. BT: Dynamics. - : ships 106:0055.

Cables. BT: Ropes, wires, & cordage. NT: Chain cables. NT: Cable dynamics.

CAD. SN = Computer aided design. USE: Computer aided design.

CADCAM. SN = Computer aided design & manufacture. EISP: Computer aided design. USE: Computer aided manufacture.

Cadets. USE: Education & training.

Calculating instruments. BT: Instruments. RT: Computer. RT: Computers. - : paper curves ship calculations 007:0127; - : super speed curves resistance 009:0071. paper ships speed 020:0097.

CAM. SN = Computer aided manufacture. USE: Computer aided manufacture.

Camouflage: ships. EISP: Defence.

Canada (country). BT: Countries. RT: North America. NT: Great Lakes.

Canada: power stations, hydroelectric. - : 034:0365. - : Parsons Ltd 077:0031.

Canada: shipbuilding. - : 035:0151.

Canals. USE: Inland waterways.

CAP. SN = Computer aided production. USE: Computer aided production.

Caprotti valve gears. USE: Gears.

Capsizing: ships. USE: Safety. USE: Stability.

Car carriers. RT: Cargo ships. RT: Ferries. RT: Motorcars. - : HYAC: container: waters: GB to Australia 071:0037.

Carlton. BT: Materials. NT: Carbon fibre. - : metalworking: steel 029:0142. - : metallurgy: creep: steel: aluminium: superheater tubes 069:0027.

Carbon dioxide. BT: Carbon. BT: Gases. - : firefighting ships 019:0033. - : refrigeration machinery: ships 03:205.

Cardiff (port). USE: Ports. USE: Wales.

Care. USE: Maintenance.

Careening: ships. USE: Decks. USE: Stability.

Careers. USE: Education & training.

Cargo ships. BT: Transport. RT: Coal. RT: Cargo ships. RT: Fuel. RT: Oil. RT: Passengers. RT: Refrigeration. RT: Tanks. - : moisture corrosion: HYAC: 063:0019. - : sweating: HYAC: 067:0027. - : moisture corrosion: HYAC: 068:0049. - : large indivisible loads. Long Lea: '07:0047.

Cargo coasters. USE: Cargo ships.

Cargo containers. USE: Containers.

Cargo handling equipment: cargo ships. BT: Machinery. NT: Cranes. RT: Containers. RT: Fuel. RT: Materials. RT: Bars. RT: Pumping & piping. RT: Ropes, wire, & cordage. RT: Terminals. - : & parts: industrial relations 043:0175; - : winches: cranes: derricks 057:0161. - : & parts: economic operation 075:0125; - : design: optimization: machinery layout 081:0073; - : barge carriers: tank ships: ports 083:0069; - : outfitting 092:X005; - : cranes 095:0127; - : sea terminal: Port of Tyne '09:0087.

Cargo ships. BT: Cargo. BT: Merchant ships. NT: Barge carriers. NT: Barges. NT: Bulk carriers. NT: Car carriers. NT: Coasters. NT: Containerships. NT: Heavy lift vessels. NT: Rail car carriers. RT: Passenger cargo ships. RT: Trampships. - : coal consumption: hull form: ship design: performance: weather: trials 004:0065; - : structural strength 005:0125. - : well deck: ship design 005:0151. - : steam recip engines 006:0115; - : structural strength 005:0215; - : stability: subdivision: unlikelihood 067:0087; - : '07:0335. - : new types 008:0231; - : turret deck 011:0209; - : ship design 014:0173. - : large steel

turret design: superstructure 016:0080; - : ballasting: water 018:0051. - : economics: hull form: operations 029:0047; - : structural strength: arch principle 029:0085; - : propulsion: machinery: comparison of types: steam recip engines: steam turbines 029:0220. - : steam recip engines: standardization 033:0233. - : cargo ships 036:0315. - : celliers & trampships: performance 042:0261. - : cargo handling equipment: 043:0173. - : performance: N Atlantic: winter weather: structural strength 046:0107. - : model tests: propellers: propulsion 047:0117; - : boilers: water-tube: steam recip vs diesel engines 049:0003. - : propulsion machinery: economics: ship design 049:0235. - : & tanker: ship design: history 051:0393. - : Full form: Aereform: Macform: resistance & propulsion: Curtains (see) scales: costs: market forecasting: shipbuilding 052:0193; - : conversions: motorships: Silverpine & Silverlarch: performance 052:0215; - : boilers: maintenance & tests 054:0067. - : manufacturing: propulsion: Beacon Grange: trials 055:0177; - : containers: model tests: propellers: resistance & propulsion 058:0081; - : ballasting: water: stability 058:0241; - : high speed: ship design: economics: resistance & propulsion 059:0023; - : water-tube boilers: design & performance 060:0077; - : single screw propeller design 061:0251; - : standard: ship design 063:0017; - : steam turbines: Beaver class: rebuilding: turboelectric propulsion machinery 063:0071. - : & tankers: shipbuilding: shiprepairing. WW II 064:0459. - : A-a: steam turbine performance: N Atlantic 064:0533; - : conversions: shipbuilding 066:0117; - : ship design 066:0194. - : dry: vibration: welding vs riveting: structural strength 067:0235. - : structural strength: vibration: Ocean Vulcan 068:0051. - : longitudinal strength: foundations: steam reciprocating engines: Ocean Vulcan 068:0045; - : performance: Carradale: trials: N Atlantic 074:0115. - : nuclear powered submarine: ship design: performance 075:0461; - : performance 076:0095; - : cargo handling equipment: machinery layout: optimization 081:0071; - : high speed: Glenlyn & Prian class: motions: resistance & propulsion: ship design: 082:0277; - : cargo handling equipment 082:0069. - : high speed: propellers: counteracting design 085:0075. - : cargo handling equipment: outfitting 092:X005. - : dry: cargo handling equipment: cranes 093:0127. - : after: government: future trends: Great Britain 097:X002. - : Iron: Blackadder Lect 198:0065. - : ballasting: controllability 102:0137; - : structural strength: finite element analysis: vibration 107:0133.

Cargo spaces: ships. USE: General arrangement.

Cargo losses. USE: Tanks.

Cars. USE: Motorcars.

Cascade: propeller blades. USE: Propellers.

Cast iron: diesel engines. RT: Forging & casting. BT: Iron. - : forging & casting 047:0201. - : metallurgy: combustion chambers: ships 075:0255. - : 075:0334.

Casting. USE: Forging & casting.

Casualties: ships. BT: Safety. RT: Objections. NECTES. RT: Salvage. - : & personnel 038:0037. - : & strapping: emergency evacuation 096:0194. - : seaworthiness: stability 076:0285. - : tactics: trials: model tests 079:0189.

Catamaran vessels. BT: Multi-hulled vessels. - : & multi-hulled vessels: hydrodynamics 084:0129; - : ship design & operation 105:0139.

Cathodic protection. USE: Corrosion.

Cavitation. - : oil lubrication: wear: steam turbine thru block: ships 081:0305.

Cavitation: propellers. BT: Propellers. BT: Fluid mechanics. - : model tests: cavitation: models 029:0300; - : washings: trials & model tests 053:0039. - : photography: trials 068:0019; - : model tests 070:0171; - : blades: performance: design: model tests 071:0125. - : merchant ships: model tests 079:0295; - : 091:0051.

Cavitation tunnels. USE: Creation. USE: Model tests.

Cellular ships. USE: Merchant ships.

SECTION 4: SUBJECT INDEX.

- Centrifugal equipment. **USE:** Fans. **USE:** Pumps
- Ceramics. **BT:** Materials. - materials **CHI:0339.**
- Certification. **USE:** Regulations.
- Chain cable lifters. **BT:** Chains. **BT:** Lifting machinery. **RT:** Auxiliary machinery. - static dynamos: ships **106:0195.**
- Chains. **BT:** Ropes, wires, & cables. - mooring: ships **034:0151.**
- Chemical carriers. **BT:** Chemicals. **BT:** Tankers. - phosphates carriers: tanks: structural strength **CHI:0013.**
- Chemical industry. **USE:** Industry
- Chemicals. **USE:** Materials.
- Children. **USE:** Education & training.
- Chimney stacks. **BT:** Structures. **RT:** Formels. - aerodynamic: wind loads: buffering **096:0189.**
- Chipping hammers. **USE:** Welding.
- Christiansen engines. **USE:** Engines.
- Chromium. **BT:** Metals. - corrosion: boilers: ships **076:0085.**
- Chronological Index. **NECIES. SN:** an index of **NECIES** pprs arranged in date order. **BT:** Indexes. **NFCIES. RT:** History
- CIM. **SN:** = Computer integrated manufacture. **USE:** Computers: manufacturing, used in. **USE:** Manufacturing
- Civil engineering. **USE:** Engineering. - no specific ppr
- Clan Alpine (cargo ship). **USE:** Cargo ships
- Classification: general. **SN:** regulations by classification societies. **BT:** Regulations. **RT:** Classification societies. **RT:** Surveyors. - offshore structures: fixed: Blackadder Lect **106:0207.**
- Classification: ships. **RT:** Ship design. - & surveying **006:0113:** - longitudinal strength: vibration **010:0287.** - regions: **NECIES. LR. 012:0379:** - - **015:0259:** - - **019:0229:** - - **023:0117:** - reports: **NFCIES. LR. 027:0303:** - Great Britain: **054:0297:** - structural design: hulls **064:0135:** - boilers: materials: structural strength: **055:0185:** - **059:0337:** - tankers: structural design: **070:0645.** - **SOILAS. 082:0015:** - marine engineering: Ljung Lect **089:0045:** - regulations: governments: Ljung Lect **096:0031.** - maintenance: frame bends: **100:0012.** - metallurgy: **107:0113.** - testing: marine equipment: computers: **107:0149.**
- Classification societies. **BT:** Organisations. **NT:** I.R. **RT:** Classification. - engineering & shipbuilding: Great Britain: **045:0299.** - Presidential Addr **097:0061.**
- Cleavage fracture. **USE:** Metallurgy. **USE:** Structural strength
- Clinoctests. **BT:** Instruments. **RT:** Stability. - & level: stability: ships **061:0137.**
- Closed cycle diesel engines. **USE:** Diesel engines
- Clutches. **USE:** Claws.
- Clyde (river & Clydebank region). **BT:** Inland waterways. **BT:** Scotland. - shipbuilding: workshops: history: **029:0119:** - gear: mining industry: **031:0319.**
- CNI (index term). **USE:** Corporate Name (index)
- Coal: general. **BT:** Energy resources. **BT:** Fuel. **BT:** Minerals. **RT:** Cargo. **RT:** Colliers. - Presidential Addr **044:0119:** - safety, education & training: **055:0055.**
- Coal: fuel. - consumption: ships: performance: economies: design: operations: **009:0165.** - combustion: boiler: furnaces: **004:0151.** - combustion: smoke: **009:0042:** - powdered steam turbines: merchant ships: **039:0571.** - Presidential Addr **044:0019.** - pulverised combustion & products: vs oil: ships: **045:0211.** - powdered: ships: **046:0325:** - future trends: **007:0100.** - boilers, coal fired: ship design: **048:0123.** - boilers, fluidised bed: ships: **059:0131.**
- Coal carriers. **USE:** Colliers
- Coal mining. **BT:** Coal. **BT:** Mining. - management: nationalised industry: **082:0143.**
- Coal terminals. **RT:** Coal. **BT:** Ports. - Port of Tyne: **102:0087.**
- Coal-fired boilers: ships. **USE:** Boilers. **USE:** Coal: fuel
- Coasters. **BT:** Cargo ships. **RT:** Ferries. - propulsion: model: case: propellers: screws: sterns: hull-propeller interaction: **050:0240:** - ship design: history: **051:0417:** - shallow draught: motor: **054:0083.**
- Coastguard vessels. **USE:** Naval vessels. - no specific ppr.
- Coatings. **BT:** Materials. **BT:** Surface preparations. **RT:** Art & aesthetics. **RT:** Corrosion. **RT:** Fouling. - ships: darcic paint: eg. anti-soumarine: **035:0237:** - wood: veneers: **056:0281.** - powder metallurgy: **059:0139.** - tankers: paints: fouling: corrosion: economics: **069:0289:** - boilers: ships: **076:0025.** - paints: non-metallic materials: outlying: warships, small craft: **078:0267:** - preparation & protection: paints: plates: quality control: shipbuilding: ships: **078:0277:** - protective: hull: fouling: corrosion: plastics: **082:0041.** - spraying: metalworking: plasma: arcs: **084:0041.** - prints: steel: ships: **088:0117:** - self-polishing: anti-fouling: paint: maintenance: economics: ships: **102:0011.**
- Cold regions. **BT:** Geographic regions. **RT:** Weather. **NT:** Antarctic. **NT:** Arctic. **RT:** Ice
- Cold weather. **USE:** Weather. **USE:** Cold regions
- Colleges. **USE:** Education & training. **BT:** Organisations.
- Colliers. **BT:** Coal. **BT:** Dry bulk carriers. **RT:** Inland waterways: vessels. - performance: **043:0061:** - up-river: vibration: shallow water effects: **070:0193.** - mg: cargoes: **NE. Eng and 101:0105.** - Port of Tyne: **102:0087.**
- Collisions: ships. **BT:** Safety. **RT:** Bulkheads. **RT:** Manufacturing. **RT:** Navigation. **RT:** Operations. - regulations: structural design: **051:0047.**
- Columns. **BT:** Structural members. **RT:** Scour: structures: vessels. - no specific ppr.
- Combination carriers. **SN:** combined liquid and dry bulk carriers. **BT:** Bulk carriers. **RT:** Dry bulk carriers. **RT:** Liquid bulk carriers. - ship design: ore & combination carriers: Horn Hills: **Farna. 000:0005.**
- Combination engines. **SN:** steam recip & steam turbines. **BT:** Internal combustion engines. **RT:** Steam engines. **RT:** Steam turbines. - merchant ships: performance: **006:0031.**
- Combined cycles. **USE:** Gas turbines.
- Combustion: general. **USE:** Combustion chambers. **USE:** Boilers. **USE:** Engines. **USE:** Firefighting. **USE:** Fuel
- Combustion chambers. **BT:** Boilers. **BT:** Engines. - gas turbines: ships: **066:0127.** - gas turbines, single vs multiple: **071:0009:** - diesel engines: metallurgy: cast iron: ships: **075:0283.**
- Commerce & commercial shipping. **USE:** Economics. **USE:** Merchant ships. **USE:** Trade.
- Commissioning. **USE:** Testing. **USE:** Trials
- Communication. **BT:** World. **NT:** Publications. **NT:** Telecom: messages. **RT:** Data processing. **RT:** Education & training. **RT:** Management. - press: marine industry: Blackadder Lect **102:0073.**
- Companies. **BT:** Limited companies. **USE:** Corporate names. **USE:** Fictitious. **USE:** Industry. **BT:** Organisations. - no specific ppr.
- Compartmentation: ships. **USE:** General arrangement. **USE:** Subdivision
- Compasses. **BT:** Instruments. **RT:** Navigation. **RT:** Magnetism. - magnetic: ships: **023:0249:** - automation: manoeuvring: navigation: ships: **038:0057:** - gyro: aircraft: navigation: **084:0061.**
- Compensators: ships. **USE:** Stabilising devices.
- Competition. **USE:** Economics. **USE:** Marketing. **USE:** Trade.
- Composite materials. **USE:** Materials.
- Compound engines. **USE:** Steam: reciprocating engines
- Compressed air. **BT:** Air. **RT:** High pressure equipment. **RT:** Pneumatic equipment. - diesel engines: fuel injection & combustion: ships: **038:0117.**
- Compressors: gas turbines. **USE:** Gas turbines.
- Computation. **BT:** Mathematics. **RT:** Calculating instruments. **RT:** Computers. - hydrodynamics: boundary layers: ships: **077:0107:** - engineering: research: design: Blackadder Lect **103:0063.**

SECTION 4: SUBJECT INDEX.

- Computer aided design.** SN: = CAD. USE: Computers: design, used in. USE Computers: ship design, used in. USE Design. USE: Ship design.
- Computer aided manufacture.** SN: = CAM. USE: Computers: manufacture, used in. USE: Manufacture.
- Computer aided production.** SN: = CAP. USE: Computers: production, used in. USE: Computers: shipbuilding & ship production, used in. USE: Production.
- Computer graphics.** USE: Computers. BT: Drawing.
- Computer integrated manufacture.** SN: = CIM. USE: Computers: production, used in. USE: Manufacture.
- Computers: general.** BT: Electronic equipment & machinery. RT: Automation. RT: Calculating instruments. RT: Computation. RT: Data processing. RT: Simulator - use in industry: conference NECIES 088:X000; - reviews & future trends 088:X001; - use in finance 088:X025; - analogue 088:X007; - reviews & future trends 088:X008.
- Computers: production, used in.** - engineering factories: job-shops 086:0012; - stock control 088:X005; - CAD/CAM: computer graphics 101:0027; - make-to-order products 101:0045.
- Computers: ship design, used in.** RT: Integrated systems - structural analysis: ships 371:0067; - longitudinal strength & vibration: 077:0053; - hydrodynamics: boundary layers 077:0167; - longitudinal strength: girders 077:0391; - vibration: shafting: diesel engines 079:0255; - structural design: bulk carriers 086:0119; - 088:0151; - 088:X002; - integration 102:0073; - 103:0107.
- Computers: shipbuilding & ship production, used in.** - simulation: steelwork: research: Long Leat 083:0047; - management: technical information systems 094:X002; - & shiprepairing 094:X003; - simulation 099:0125; - CIM: welding 103:0123.
- Computers: shipping, used in.** - shipboard: ship operators 088:X004; - information technology: artificial intelligence: Long Leat 105:0051; - marine uses 105:0062.
- Concrete.** BT: Materials - (non-reinforced) ships 034:0211; - reinforced. Admittance: fatigue cracks: construction: WWII 063:0103; - Malaysia (floating harbour) launching: model tests & trials 063:0345; - use for: steel: structural design 092:0149.
- Condensers.** BT: Auxiliary machinery. BT: Heat exchangers. BT: Steam generators. RT: Cooling water systems - power stations 022:0021; - pumps: use on: ships: reports: NECIES 034:0083; - auxiliary: reports: NECIES 4:0:0367; - rubber corrosion 040:0022; - boiler: freshwater systems 047:0032; - economics: design: power stations 057:0231.
- Continuous monitoring.** BT: Monitoring - propulsion machinery: characteristics 038:0216; - performance: tankers 081:0128.
- Conferences NECIES.** SN: WEMT conferences are sponsored but not published by NECIES. therefore not included in this Index. BT: Meetings: NECIES. - steam: reciprocating engines: performance 048:0089; - propellers 064:0229; - international: marine engineers & naval architects 167:0187; - tank: performance: data analysis: data 076:0067; - shipyards: Tyne-side: comparison 077:0077; - marine technology: ships: Seascope: 1967 063:X005; - predictor: engineering 085:0147; - STIT: ship technology in transition: data: Seascope 1972: computers: industry, use in 088:X010; - Seascope 1974: offshore engineering: oil & gas 090:X000; - Seascope 1976: outfitting 092:X000; - safety: ships: data design 062:Y000; - Seascope 1978: shipbuilding: management: future trends 094:X000; - shiprepairing 075:X000; - Seascope 1981: shipping: shipbuilding: economics: government 097:X002; - NEC 100: container: propulsion: operations: ships: history 100:X009; - Seascope 1986: shipping: shipbuilding: economics 102:0115; - 102:X000; - shipbuilding: history: NE England 103:0171; - education & training: economics: technician engineers 104:0018.
- Connecting rods.** USE: Steam reciprocating engines.
- Consett (town).** BT: North East England. BT: Towns. - town: dies: visits: NECIES 010:0027.
- Constitution NECIES.** USE: NECIES constitution and by-laws.
- Construction.** BT: Engineering. BT: Structures. NT: Computer aided manufacture. NT: Production. NT: Ship design. NT: Shipbuilding. NT: Specific structures: e.g. Diesel engines. RT: Materials. RT: Repairing. RT: Testing. RT: Trials.
- Consultants.** BT: Personnel. - naval architects: shipping & shipbuilding: Blackadder Leat 097:0073.
- Containers.** USE: Cargo handling equipment. USE: Container-ships. - no specific ppt.
- Containerships.** RT: Cargo ships. RT: Containers. - operators: Farwich Zebrugg 080:0057; - vibration: springrig: Dan Europe 093:X015; - operations: transport networks 099:0071.
- Continents.** BT: Geographical regions. NT: Africa. NT: Antartic. NT: Arctic. NT: Asia. NT: Europe. NT: North America. RT: Inland waterways. RT: Oceans & seas.
- Contracts.** BT: Regulations. - shipbuilding: performance 100:X002; - pre-contract phase: preliminary ship design: ship production 106:0007.
- Contrarotating propellers.** USE: Propellers.
- Control surfaces.** USE: Manoeuvring devices. USE: Stabilising devices. - no specific ppt.
- Control systems.** USE: Automation. USE: Management. USE: Operation.
- Controlable pitch propellers.** USE: Propellers.
- Conventions.** USE: Conferences. USE: Regulations.
- Conversions: ships.** RT: Shiprepairing. RT: Maintenance. RT: Shipbuilding. - steel: reciprocating engines: Presidential Addr. ship 034:0313; - steam: reciprocating engines 041:0315; - shipbuilding: steel 048:0221; - & machinery: 048:0244; - 049:0081; - & shiprepairing 049:0147; - motorships: performance 052:0215; - cargo: ships & tankers: shipping: WW II 062:0059; - Tyne (river): 057:0035.
- Converters.** USE: Electrical power generators.
- Cooling.** USE HVAC. USE: Refrigeration.
- Cooling water systems: power stations.** USE: Power stations. BT: Auxiliary machinery. RT: Condensers.
- Copper.** BT: Metals. - steam: pipes: iron & steel: ships 007:0113; - steam: pipes: structural strength 015:0067; - steam: pipes: fatigue 025:0035; - nickel alloys: metal: metals: shipbuilding & engineering 345:0373.
- Corporate Name Index.** SN: an index of corporate names. BT: Index: NECIES. RT: Organisations. RT: Corporate names: in Corporate Name Index. RT: Corporate names: in Subject Index.
- Corporate names.** USE: Corporate Name Index. USE: Organisations. BT: Names.
- Correlation: ship-model tests.** USE: Model tests.
- Corrosion.** BT: Metallurgy. RT: Coatings. RT: Finishing. RT: HVAC. RT: Maintenance. RT: Repairing. RT: Water. - boilers: ships 001:0072; - - piping 015:0198; - railroads 017:0217; - ferrous metals: ships 038:0509; - condenser tubes: boilers 040:0023; - boilers 047:0061; - tanks & tankers 047:0393; - hulls 082:0127; - & fouling: hulls: ships 059:0183; - HVAC: ships 063:0219; - hull fouling 068:0093; - HVAC: cargo: ships 088:0243; - & fouling: tankers: paint: osmium 069:0289; - cathodic protection: cargo: space: Acos (tanker) 076:0377; - motorships in use: officers: GB in Australia 071:0237; - boilers: ships 076:0095; - fatigue: strength: shafting: ships 077:0293; - tankers: high tensile steel 081:0281; - fatigue: materials 081:0281; - hull fouling: plates 092:0047; - steel: coatings: ships 088:0117.
- Corrugated plates.** USE: Plates.
- Corrugated steel ships.** USE: Hull form.
- Cost estimating.** BT: Estimating - engineering & shipbuilding 018:0221; - workshops: management 018:0273; - 018:0311; - economic: structural design: operation: steel 104:0045.

SECTION 4: SUBJECT INDEX.

Council NECTEA, USE: NECTEA Council.
Countries, BT: Geographic regions, NT: Bangladesh, NT: Belgium, NT: Canada, NT: Cuba, NT: Developing countries, NT: Egypt, NT: Finland, NT: Foreign countries, NT: Germany, NT: Great Britain, NT: India, NT: Italy, NT: Japan, NT: Netherlands, NT: Russia, RT: <countries> in Corporate Name Index, RT: Government, RT: International relations.
Country boats, USE: Developing countries, USE: Inland waterways vessels.
CP Propellers, USE: Propellers.
Craft (ships), USE: Ships, USE: Small craft.
Craftsmen: education & training, USE: Education & training, BT: Personnel.
Crane ships, USE: Heavy lift ships.
Cranes, BT: Lifting machinery, RT: Cargo handling equipment, RT: Heavy lift ships, - electric 023:0247; - engineering workshops & shipyards 043:0099; - ships 057:0161; - heavy duties: stayed masts ships 066:0371; - shipyards 078:0233; - dry cargo ships 095:0227; - shipbuilding: theory 103:0072; - chain cable lifters: ships 136:0095.
Crank angles: steam recip engines, USE: Steam reciprocating engines.
Crankcases: diesel engines, USE: Diesel engines.
Crankless diesel engines, USE: Diesel engines.
Crankshafts, BT: Shafting -> steam recip engines; forging & casting 08:0037; - steam recip engines: structural strength: ships 091:0131; - steam recip engines: forging & casting: ships 092:0055; - Michell crankless diesel engines: ships 094:0245; - oil engines: manufacture 076:0500.
Creep, USE: Metallurgy, USE: Structural strength.
Crew, USE: specific subjects: e.g. Warships, BT: Personnel, RT: Passengers - no specific pgs.
Crude oil, SN: unrefined oil, USE: Oil.
Cruise ships, USE: Passenger ships, - no specific pgs.
Cruiser sterns, USE: Sterns.
Cruisers, USE: Warships.
Crushing: quartz, USE: Factories, gravitation stamp mills.
Cuba (country), BT: Countries, - ship design & construction: Sotom (trailer carrier): New Orleans - Havana 046:0179.
Cylinders, BT: Structural members, NT: Pipes, RT: Bolters, RT: Columns, RT: Submarines -> tanks: structural strength: also pipe stress 167:0513.
Cylinders: engines, USE: Combustion chambers, USE: Engines, USE: Diesel engines, USE: Steam reciprocating engines.

Damage, USE: Corrosion, USE: Maintenance, USE: Reliability, USE: Repairing.
Damaged stability, USE: Stability, USE: Subdivision.
Damping, USE: Stabilising devices, USE: Vibration.
Dart, Europe (containership), USE: Containerships.
Data processing, USE: Data analysis, BT: Analysis, RT: Computers, RT: Mathematics - mixed tests: standardisation: ships 039:0221; - model tests: propellers 040:0459; - trials: performance: merchant ships 043:0063; - vibration: 064:0177; - performance: ships 067:0274; - performance: ships 073:0197; - model tests: trials: performance: ships conference.
Dazzle painting: ships, USE: Coatings, USE: Defence.
DC motors, USE: Superconductors.
Deck auxiliary machinery, USE: Auxiliary machinery, RT: Decks.
Deck coverings, USE: Outfitting, BT: Decks.
Decks: houses, USE: Superstructures.
Decks, BT: Hulls, RT: Auxiliary machinery -> watertight subdivision: merchant ships, shelterdeck vessels 059:0079; - acoustic insulation 059:0287; - non-metallic materials: outfitting: warships 076:0254; - steamship: passenger ships 077:0322; - girders: structural strength: HVAC, passenger

ships 078:0291.
Decommissioning, USE: Scrapping.
Decorations: ships, USE: Art & aesthetics, USE: Coatings.
Defence: general, SN: warfare: military, warships, USE: Naval vessels, USE: Weapons, USE: Wars.
Defence, anti-submarine: ships, USE: Sonar/mine.
Demolition, USE: Scrapping.
Depression, economic, USE: Economics.
Derricks, USE: Cranes.
Design: general, SN: Engineering design. Too many pgs to list here, see under narrower terms, especially Ship Design and other specific structures. RT: Engineering, BT: Structures, NT: Analysis, NT: Drawing, NT: Integrated systems, NT: Modelling, NT: New innovations, NE: Obsolescence, NT: Optimisation, NT: Product development, NT: Ship design, NT: Simulation, NT: Standardisation, NT: <specific structures> e.g. Boilers, e.g. Engines, e.g. Propellers, RT: Art & aesthetics, RT: Research -> standardisation: trade economics 038:0477; - experimental methods: research 065:0029; - engineering 074:0195; - & research: mechanical engineering: Laing Ltd 075:0321; - & research: computational: Blackadder Ltd 104:0863; - Laing Ltd 106:0065.
Design for production, USE: Design, USE: Ship design, USE: Production, USE: Ship production.
Design for repair, USE: Design, USE: Ship design, USE: Repairing, USE: Ship repairing.
Destroyers, USE: Warships.
Deterioration, USE: Corrosion, USE: Metallurgy.
Detonation, USE: Combustion, USE: Weapons.
Developing countries, BT: Countries, NT: Bangladesh -> inland waterways vessels: Bangladesh 100:0153.
Development, USE: Design, USE: History, USE: Research, USE: specific subjects, e.g. Diesel engines.
Diesel electric engines, USE: Diesel engines, USE: Electric propulsion.
Diesel engine propelled ships, USE: Diesel engines, USE: Motorships, USE: Propulsion machinery.
Diesel engines, BT: Oil engines, RT: Combined cycles, RT: Motorships, - vs other engine types: ships 028:0239; - ships 030:0033; - DIESELIS; - & other internal combustion engines: thermal efficiency 035:0411; - castings 056:0156; - fuel oil: injection: combustor 037:0337; - 038:0211; - compressed air: fuel injection & combustion: ships 038:0377; - design: ships 038:0403; - double acting 2-stroke: design: ships 039:0058; - fuel oils: heavy 039:0182; - Sulzer: ships 039:0500; - vs steam recip engines: ships 040:0517; - double-acting: ships 040:0528; - conversion to steam recip engines: Hitting (foundry): 041:0315; - forging & casting: cast iron 042:0201; - machinery: generators: ships 044:0121; - Michell crankless: ships 044:0245; - foundations: ships 047:0197; - double acting: crankshafts: ships 047:0229; - vs steam recip: boilers, water tube: cargo ships 049:0205; - vs steam engines: fuel maintenance: operations: economics: ships 051:0229; - 054:0137; - & gas engines: turbochargers: B&W system: ships 061:0141; - ships 061:0183; - Polar: design: scavenging 164:0071; - Wartsila: Lugt 2-stroke: supercharged 065:0375; - & gas turbines: venturi-gas power plants: Laing Ltd: ships 065:0087; - Oxford 066:0204; - crane-cases: safety: ships 066:0253; - crankcases: ships 066:0253; - valve valves: Laing Ltd 067:0099; - secondary: heavy oil fuel: ships 069:0177; - shafting: alignment: trollers 070:0343; - 071:0497; - pistons & cylinders: reliability: ships 071:0158; - Diesel 2 stroke: opposed piston: supercharging: boiler: hulls 072:0227; - gears: ships 072:0361; - naval vessels: propulsion machinery: Parsons Ltd 073:0037; - Sank/Wartsila: supercharged: Bergensjord (passenger ship) 073:0173; - 073:0173; - cast iron: metallurgy: combustion chambers: ships 075:0288; - cast iron: metallurgy: ships 075:0131; - machine engineering: Laing Ltd 078:0017; - Götaverken: ships 078:0351; - large 2-stroke: turbo- & superchargers 079:0321,

SECTION 4: SUBJECT INDEX.

- computer aided design: vibration 079:0265; -, Daxford ships: Laing Lect 085:0445; -, tankers 082:0189; -, Diesel high-powered ships 082:0247; -, medium speed propulsion: ships 082:X005; -, Götaverken crosshead: ships 084:0017; -, Mirlees Marzuch propulsion ships 084:0103; -, Bernmeister & Wain superlarge ships 085:0687; -, Stork/Weekspoor medium speed: ships 086:0029; -, Daxford Seaborne: ships 088:0051; -, Sulzer ships: history: Laing Lect 090:0061; -, Daxford, outfitting: ships 092:X004; -, slow-speed: shipbuilding 093:0059; -, Seajoule waste heat recovery: ships 094:0037; - vs steam turbines: automation; automation: future trends: ships 094:0129; -, Mitsubishi 2-stage turbocharged: ships 094:0151; -, Sulzer slow-speed: ships 094:0181; -, Daxford 3-cylinder design: ships 095:0091; -, oil/water ratio: fuel fuel: ships 096:0115; -, Sulzer propulsion machinery: ships 098:0137; -, R & W 2-stroke crosshead G-family: ships 099:0014; -, history & future trends; propulsion: ships 100:X003; -, design: ships: future trends 100:X009; -, medium & high-speed: Laing Lect 101:0075; -, performance & fuel analysis: ships 103:0089; -, medium speed design: ships 104:0117; -, slow-speed: ships: Great Britain: history 105:0139; -, Daxford history: ships 105:0062; - - [2nd part] 105:0062; - - 105:0069; -, closed cycle: submarines: offshore engineering 106:0067; -, Warship: ships 107:0099

Direction finding. USE: Navigation

Directional stability. USE: Manoeuvring.

Discussions. NECIES, SN: of technical pprs. for: related. USE: Authors. NECIES. USE: Publications. NECIES

Disembarking, emergency. USE: Lifesaving craft & appliances

Displacement tables. USE: Hydrostatics

Diving. RT: Operations. RT: Offshore engineering. RT: Submersibles & Submersibles. - no specific ppr.

Diving support ships. BT: Service vessels. - See also 101:0035

Docks. BT: Ports. RT: Launching. RT: Lifting machinery. RT: Shipbuilding. RT: Shiprepairing. RT: Shipyards. RT: Towing. - floating RT: Ships. - floating: design & construction 004:0005; - - vents. NECIES: Hart speeds 005:0081; -, graving dry docks 022:0225; -, pumps: electrical equipment 023:0129; -, floating: design & construction 024:0121; -, naval: casting steel & concrete. on: stevedore WW II 063:0105; -, naval: Pacific: USA: naval vessels: maintenance & repair: WWII: Pacific Ocean 065:0255; -, graving: Tyne (river) 072:0229; - industrial relations: Tyne-side 092:0077; -, dry: Synthesis 105:0645

Documents. USE: Publications. USE: Regulations.

Double acting 2-stroke diesel engines. USE: Diesel engines

Double bottoms. USE: Bottoms. RT: Tankers.

Dover Strait. USE: English Channel

Daxford engines. USE: Crankshafts. USE: Diesel engines. USE: Oil engines.

Drag ships. BT: Fuel dynamics. BT: Resistance. - & properties: model tests 051:0279; - & floating structures 022:0275; -, viscous: model tests: automation of 095:0165

Draught ships. RT: Ballasting. RT: Hydrostatics. RT: Ironing-out: propellers. RT: Log lines. - reduced resistance & propulsion: single screw 080:0185

Drawing. BT: Design. NT: Computer graphics. - instruments: balance: accuracy 014:0175; - office: shipyards: engine works 044:0335.

Drawing instruments. RT: Instruments

Drawing offices. RT: Ship design.

Dreadnoughts. USE: Warships

Drifters. RT: Service vessels. RT: Seaford. - 198:0195

Drifters. USE: Fishing vessels

Drift: ship motions. USE: Motions

Drilling platforms & rigs. USE: Offshore drilling.

Drillships. USE: Offshore drilling: rigs

Dry bulk carriers. BT: Bulk carriers. NT: Columns. NT: Ore carriers. RT: Combination carriers.

Drydocks. USE: Docks.

Ducted propellers. USE: Propellers. USE: Thrusters.

Ducts. USE: Nozzles. USE: Thrusters.

Dunfries (ss. cargo ships). USE: Cargo ships.

Dynamic positioning: ships. BT: Manoeuvring. - manoeuvring: hydrodynamics 082:0033

Dynamics. BT: Mechanics. NT: Loads. NT: Motions. NT: Noise. NT: Vibration. RT: Statics. - laws of motion: boundary: resistance 034:0103; - launching: ships 062:0361; - launching: tankers 076:0131; - structural analysis: tankers 090:0133; -, structural: offshore structures 093:0041; - ship: cable: lifts: ships 106:0055.

Dynamics. USE: Generators

East Coast England. RT: England. RT: Northern England. - container: ships: Harwell: Zebringer 086:0057; - small craft: shipyards: Eyemouth (port) 106:0081

Economist: general. RT: World. NT: Estimating. NT: Tech: econometrics. RT: Management. RT: Performance. - Presidential Addr 001:0007; - depression: 003:0009; workshops: management 018:0311; - engineering industry: electrical equipment 021:0153; - management: science 032:0287; -, management 033:0033; -, British Empire: trade 033:0203; - nationalised industry 034:0133; - Presidential Addr 055:0002; - - 055:0025; - design: standardisation: trade 058:0477; - depression: Presidential Addr 042:0023; - steel & materials: trade: Great Britain vs foreign 047:0399; - design: condensers: power stations 057:0021; - Presidential Addr 060:0117; - - 065:0027; - non-destructive testing 065:0275; - management: corporate planning 087:X067; -, use of computers 088:X005; -, engineering: ship design: optimisation: uncertainty 056:0077; - machinery: design & operation 039:0039; - education & training: technician engineers: conferences. NECIES 104:0031

Economist: offshore engineering. - oil & gas: Great Britain: N Sea 090:X006; - research: Blackadder Lect 096:0155.

Economist: operations: ships. SN: ship operations. BT: Operations. NT: Insurance. RT: Fuel. RT: Shipowners. - cargo: ships: coal consumption: performance: ship design 004:0065; - merchant ships 004:0275; - cargo ships: hull form 029:0017; - merchant ships 035:0096; - trade: ships: design 057:0152; - merchant ships 088:0549; -, steam turbines 043:0155; - ship: design: standardisation 043:0269; - trampships 067:0041; - reconditioning: machinery: internal combustion engines 043:0081; - ship design: trampships: shipowners 050:0071; - sub-liner: shipbuilding & engineering 050:0253; - merchant ships 051:0139; - tankers 051:0323; - cargo: ships: supercargo 060:0117; - tankers: corner & fringing hulls 105:0289; -, cargo handling equipment: ports 075:0125; - tankers: fleets 076:0361; - Great Britain: Blackadder Lect 082:0131; - shipowner. Blackadder Lect 086:0109; - & ports: views 088:0145; - maintenance & repair: optimisation 090:0009; - waste heat recovery 094:0037; - Presidential Addr 095:0099; - 097:X003; - performance: maintenance 090:0021; - merchant ships 100:0147; - cargo ships: gas turbine combined cycles: fuel economy 102:0159; - conferences. NECIES: Seaford 102:X000; - 102:X001; - shipowner vs builder vs financier 102:X009; - credit banks: future trends 102:X005; - oil prices: Blackadder Lect 103:0101.

Economist: propulsion machinery. - operators 040:0011; -, steam recip engines: ships: performance: conference 048:0089; - - 048:0096; - steam recip engines: ships 048:0099; - - 048:0106; - - 048:0110; - - 048:0114; - steam vs diesel engine operations: maintenance 051:0229; - conventional vs ducted propellers 023:0075; -, steam turbines vs diesel engines: automation: operators: future trends 094:0129; - technical economies: future trends 094:0161

Economist: ship design. - machinery weight: steam recip engines: merchant ships 005:0253; -, model tests: hull form:

SECTION 4: SUBJECT INDEX.

- propellers 043:044; -- cargo ships propulsion machinery 043:025; -- cargo ships: resistance & propulsion 059:005; -- superstructures: structural design 060:0101, -- 083:0051, -- research: education & training: universities: ships 084:0009, -- optimisation: uncertainty 096:0077; -- merchant ships 100:0147, -- structural design: steelwork: optimisation 104:0045.
- Economics: shipbuilding.** -- management 025:0031, -- trade: merchant ships 036:0152; -- psychology: management 043:0205, -- labour relations: ship design 043:0249; -- electrical equipment: (45:0358); -- subsidies 050:025; -- 053:0029, -- financing & costs 071:0363; -- Blackadder Lect 088:0131, -- 094:X001, -- government: conferences: NECIES 097:X090, -- 097:X001, -- 097:X003; -- 097:X004; -- conferences NECTES Seascope 102:X006; -- 102:X001; -- shipowner vs builder vs financier 102:X003; -- credit banks: future trends 102:X045, -- 102:X007; -- oil prices: Blackadder Lect 103:0101, -- nationalisation: Great Britain: Laing Lect 104:0019.
- Economics: ships & shipping.** -- merchant ships: use 037:0152; -- sea power: Great Britain: history: Laing Lect 058:0033, -- government: conferences: NECIES 097:X000, -- 097:X010.
- EURO: Lecture 1: 1985.** BT: Lectures: NECIES -- railways, underground, London: management 102:0033.
- Education & training: general.** IFF: World. RT: Personnel. RT: Communication. RT: Employment. RT: Exhibitions. RT: Libraries. RT: Museums. RT: NECIES Graduate Section [in Corporate Name Index]. RT: Universities. -- awards: NECIES, Hon Fellowship 054:0415; -- university engineering: dept. research 064:0353; -- universities: economics: resere. ships 084:0009; -- shipping: future trends: Blackadder Lect 087:0103, -- trade unions 099:0037, -- engineering & shipbuilding: NECIES centenary: Jersey 130:Y000, -- managers: universities 102:0071.
- Education & training: craftsmen.** -- apprentices: reports: NECIES 024:0003, -- 025:0101, -- apprentices 022:0094, -- reports: NECIES 034:0052; -- engineering 058:0129, -- engineering & shipbuilding 062:0081, -- marade: shipbuilding & shiprepairing 095:0047.
- Education & training: engineers.** -- 003:0167, -- young 016:0113, -- Germany 020:0017, -- Reports: NECIES 020:0055; -- future trends 031:0171; -- universities 043:0017; -- accident industry: shipbuilding: report: NECIES 060:0195; -- craftsman & scientist 062:0091, -- 062:0271, -- universities 096:0197, -- 067:0011; -- design: universities 071:0335, -- Parsons Lect 077:0034; -- overview 077:0045, -- design: research: Laing Lect 079:0021; -- universities: Laing Lect 085:0051; -- polytechnics 089:0111, -- Presidents: Addr 079:0030; -- science 105:0001, -- maths & science: science 105:0015; -- future trends: Laing Lect 107:0041, -- science, chemical industry 108:0055.
- Education & training: marine engineers.** 010:0149, -- regulations 021:0192, -- 046:0351, -- 068:0271, -- universities 074:0169.
- Education & training: naval architects: universities.** -- 020:0177; -- 061:0065; -- 077:0475.
- Education & training: naval engineers.** -- Great Britain 026:0187, -- reports: Admiralty 018:0095, -- Admiralty 020:0121, -- Presidential Addr 023:0015, -- 024:0021; -- Royal Navy 031:0022, -- reports: NECIES 046:0026.
- Education & training: Presidential Addr.** -- 001:0018, -- 005:0013, -- 019:0013; -- 023:0015, -- 025:0025, -- 027:0027, -- 032:0025, -- 034:0007; -- 036:0005; -- 037:0029, -- 039:0007, -- 044:0019, -- 048:0019, -- 053:0012, -- engineering: safety: papers 053:0055, -- 056:0020; -- 061:0019, -- 063:0019; -- 064:0017, -- 065:0023; -- 069:0022; -- 071:0017; -- 075:0021; -- 091:0009, -- 093:0009.
- Education & training: shipbuilders.** -- 005:0167; -- future trends 031:0171; -- universities 061:0065, -- craftsmen & scientists 062:0091; -- universities 073:0449, -- 075:0021, -- future trends: Blackadder Lect 087:0103; -- & future trends 092:0009; -- & shiprepairing: manual training: craftsmen 098:0047; -- history: NECIES centenary 100:Y000.
- Education & training: technician engineers.** -- colleges 095:0223; -- professional societies 100:0097; -- manpower planning 105:0077; -- conferences: conferences: NECIES 104:0011; -- trade unions: professional socs 104:0109.
- Education & training: young people.** -- engineers 016:0113, -- youths 019:0219; -- Reports: NECIES 020:0055; -- cadets: ships 025:0003; -- children: maths & science: schools 105:0015.
- Effective horsepower, SH = EHP.** USE: Powering, USE: Resistance.
- Efficiency.** USE: Economics, operational, USE: Performance, USE: Structural design.
- Egypt (country).** BT: Africa, BT: Countries, NT: Suez canal.
- EHP.** USE: Effective horsepower.
- Ekořisk Field (oilfield, North Sea).** IFF: North Sea, USE: Oilfields.
- Elastic analysis.** USE: Structural analysis.
- Elasticity.** USE: Metallurgy, USE: Structure: strength.
- Electric power generators.** BT: Electrical equipment & machinery, BT: Power generators, NT: Generators, NT: Power stations -- general & marine: automation: cyclotrons 107:0123.
- Electric power stations.** USE: Power stations.
- Electric propulsion: ships.** BT: Economic equipment & machinery, BT: Propulsion -- passenger ships, high-powered 042:0249; -- history: Vandal Wuppertal, General electric 055:0081; -- superconducting dc motors 092:0121.
- Electrical engineering.** USE: Electrical equipment & machinery.
- Electrical equipment & machinery.** BT: Machines, NT: Electric power generators, NT: Electric propulsion: ships, NT: Generators, NT: Lights, NT: Railways, electric, NT: Superconductor, NT: Telecommunication, RT: Electronic equipment & machinery, RT: Welding, -- lights 027:0259; -- auxiliary ships 029:0245; -- power transmission 011:0113, -- industry: economics 021:0152, -- pumps: ships & piling docks 021:0128; -- cranes 025:0037; -- power transmission: future trends 042:0111; -- motor power: HVAC: ships: agricultural engineering: railways 045:0547, -- economics: shipbuilding 066:0358; -- auxiliary deck: ships 046:0363, -- steering gear: ships 050:0101, -- transducers 051:0003; -- NI: Eng and 051:0531, -- photoelectric cells: industrial applications 054:0275, -- transmission systems 057:0027, -- 057:0175; -- shipyards 059:0094, -- auxiliary ships 060:0085, -- alternating current: ships 064:0159, -- shipyard: welding & lighting 067:0159, -- automation: control: electronics: ships 087:0091, -- automation: cyclotrons: general & marine 107:0123.
- Electronic equipment & machinery.** BT: Engineering, BT: Machines, NT: Computers, NT: Radar, NT: Telecommunication, RT: Electrical equipment & machinery, -- heavy engineering 062:0073, -- shipping: ships 067:0155, -- maintenance 081:0039, -- automation: ships 087:0091; -- balance: automation: ships 094:0021.
- Embarking & disembarking.** USE: Boarding.
- Emergencies & evacuation.** USE: Life-saving: life & appliances, USE: Safety.
- Empire.** BT: Geography: reports, NT: British Empire.
- Employment.** RT: Education & training, RT: Manpower, RT: Personnel, RT: Trade, RE: Trade unions -- Presidential Addr 036:0005.
- Envisaged fuel.** USE: Fuel: oil, USE: Water.
- Energy resources.** BT: Materials, BT: Resources, NT: Fuel, NT: Gas, NT: Nuclear power, NT: Oil, RT: Offshore engineering, RT: Power generators, -- Societe 1974, conferences: NECIES offshore engineering: N sea 100:X001, -- liquefied gas carriers: economic: operations 090:X007, -- 092:0101; -- natural gas: world: Laing Lect 092:0049, --

SECTION 4: SUBJECT INDEX.

environment: Parsons Lect 103:0037; -- fuels: future trends 108:0059.

Engine builders: ships, BT: Factories RT: Engine works, marine. -- history Tyne-side 105:0060

Engine foundations: ships, BT: Engines, RT: Foundations, BT: Structural design. -- diesel engines: ships 047:0197; -- Ocean Velea (cargo ship): steam reciprocating engines: longitudinal strength 069:0045.

Engine rooms: ships, BT: Engines, BT: Machinery: general -- bulkheads: stability: bilged condition 020:0133. -- design & operation 075:0245.

Engine works, marine, BT: Engineering works RT: Engine Builders -- design & construction 063:0055, -- visits NECIES: Harlepool 312:0069; -- -- 315:0075 -- shipyards: drawing offices 044:0335.

Engineering, BT: World, NT: Agricultural engineering, NT: Construction, NT: Design, NT: Electrical equipment & machinery, NT: Electronic equipment & machinery, NT: Lubrication, NT: Marine engineering, NT: Marine technology NT: Mechanical engineering NT: Naval architecture NT: Naval engineering, NT: Offshore engineering NT: Operation, NT: Reliability NT: Scraping NT: Testing RT: Engineering works RT: Engineers RT: Industry RT: Materials RT: Professions, institutions RT: Science RT: Structures. -- cost estimates: 015:0221. -- education: 026:0127, -- women in WW1 055:0227, -- science & research: future trends, radiography, fluid mechanics, materials 041:0225; -- standardization: trade conventions 043:0269; -- classification: section: Great Britain 045:0299; -- model metals 045:0373; -- & electrical engng: NE England 051:0501; -- steel, special 054:0177; -- awards: NECIES: Hon Fellowship: 054:0415, -- safety, education & training 055:0505; -- planes 058:0139; -- fluid dynamics: aerodynamics: Lung Lect 060:0123; -- radiography 060:0267, -- home electronics 062:0593 -- research: science: nuclear power: Lung Lect 071:0089, -- design: education & training 060:0395; -- history 080:0251; -- management: production 087:0002; -- Libe composite materials & microcompos 290:0151, -- history, NECIES: centenary 100:0000, -- consultation, research & design: Blackadder Lect 104:0063, -- future trends 095:0108, -- NE England: future trends 118:0087.

Engineering: Presidential Addr. -- 001:0005, -- 007:0015, -- 016:0013; -- 017:0017; -- 219:0113; -- 021:0011, -- 023:0013, -- 051:0017; -- 057:0017; -- 059:0015, -- 065:0029, -- 003:0206. -- history & future trends 101:0001; -- management, 135:0001; -- nature & future: new dimension 107:0001.

Engineering works, BT: Factories NT: Engine works, NT: Shipyards, RT: Engineering, -- visits: NECIES: Harlepool 045:0061; -- cost estimating 015:0221, -- cost: scraping: management 018:0275; -- workshop methods 043:0090, -- workshop: economic: a manual: application 060:0528, -- production: workshop methods 051:0119.

Engineers: general, BT: Engineering, NT: Personnel, NT: Marine engineers, NT: Naval architects, NT: Naval engineers, NT: Shipbuilders. -- series 067:0311.

Engineers, education & training, USE: Education & training.

Engines: general, SN: usually ship main engines, BT: Power generators, RT: Auxiliary engines, NT: Combustion chambers, NT: Diesel engines, NT: Engine layouts, NT: Engine rooms, NT: External combustion engines, NT: Internal combustion engines, NT: Oil engines, NT: Steam reciprocating engines, NT: Turbines, RT: Foundations, RT: Fuel, RT: Locomotives, RT: Machinery, RT: Marine engineering, RT: Powering, RT: Propulsion machinery, RT: Thrust dynamics, RT: Transmission systems, RT: Vibration, RT: turbines: powered: structures: eg: Ships -- Presidential Addr 037:0029, -- cylinder: oscilling: forging & crasing: defects 040:0355, -- ship: design 044:0335, -- design: research: labs 052:0107, -- vibration: ships 057:0207, -- engineers: education & training 062:0071; -- production: forgings 065:0115; -- surface preparation: ships 066:0191, -- review: thermodynamics,

Lung Lect 084:0013; -- engineering & shipbuilding: NECIES: centenary: history 100:0000, -- excited hull vibration 103:0059.

England, RT: Great Britain, NT: East Coast England, NT: Northern England, NT: Southern England.

English Channel, BT: Oceans & seas, RT: Europe, RT: Great Britain. -- Dover Strait: routing: safety: tactics 089:0131

Entrained water effects: propellers, USE: Propellers

Environment, RT: World, NT: Environmental: loads, NT: Resources, NT: Weather, RT: Accommodation: design, RT: Geographic regions, RT: Pollution, RT: Testing, RT: Weather -- marine: resources 085:0073; -- energy resources: Parsons Lect 105:0037.

Environmental loads, BT: Environment, RT: Loads, NT: Wind: loads

Equipment, BT: Structures, NT: Auxiliary equipment, NT: Firefighting, NT: Instruments, NT: Springs, NT: Tools, NT: Valves, NT: Weapons, RT: Machinery --, marine: testing: classification 107:0149.

Escape, USE: Lifesaving craft & appliances

Estimating, BT: Economics, BT: Market forecasting, NT: Cost estimating, NT: Steelwork.

Ethics, BT: Professional activities, -- engineers 067:0311; -- managers 076:0339

Ethylene: liquefied, USE: Liquefied gases.

Europe: general, RT: Continents, NT: Belgium, NT: Finland, NT: Germany, NT: Great Britain, NT: Italy, NT: Netherlands, NT: Rhine (river), NT: Russia, RT: English Channel, RT: North Sea

Europe: shipbuilding, -- government, economics 097:0004, -- Blackadder Lect 101:0069.

Europaert (port), SN: in Rotterdam, Netherlands, RT: Netherlands, BT: Paris, BT: Rotterdam.

Evacuation: ships, USE: Lifesaving craft & appliances

Exhaust emissions, USE: Engines, USE: Fuel, USE: Pollution -- no specific pp

Exhibitions: NECIES: Nete, BT: Marketing, RT: Education & training, RT: Museums -- engineering & shipbuilding: visits: NECIES: 094:0279, -- science & industry: S/C A: Parsons 059:0062.

Expansion engines, USE: Steam engines.

Experiment, USE: specific subjects, USE: Research, USE: Testing

Exploration: oil & gas, USE: Offshore engineering.

Explosives, USE: Weapons.

Express (paddle tug), USE: Paddle ships, USE: Tugs

External combustion engines, USE: Steam engines, RT: Internal combustion engines

Eyemouth (port), USE: East Coast England, USE: Ports

.....

Factories, BT: Industry, NT: Engineering works -- gravitation: stamp mills: date 013:0221, -- computer aided production: job-shops 086:0013.

Fans, BT: Auxiliary machinery, RT: HVAC --, centrifugal pumps & fans 074:0047; -- screw 015:0045; -- HVAC: railways: underground 096:0055.

Fast, USE: High speed.

Fatigue metals, USE: Metallurgy, USE: Structural strength

Faults, USE: Maintenance, USE: Reliability, USE: Repairing.

Feedwater systems: boilers, USE: Boilers

Fellowships: NECIES, USE: Awards: NECIES.

Ferries, BT: Merchant ships, NT: Car ferries, NT: Train ferries, RT: Passenger ships, RT: Ro-ro ships -- no specific pp

Ferroconcrete, USE: Concrete, USE: Iron.

Ferrous materials, USE: Iron, USE: Metals, USE: Steel

Fibre composite materials, BT: Materials, RT: Glass, RT: Plastics -- engineering & microscopes 090:0151; -- GRP: structural design: ships 062:0149; -- GRP: submarines: ship design 095:0049, -- GRP: structural design: tube: surface

SECTION 4: SUBJECT INDEX.

- vessels 103:0159; -- Long Leat 106:0027
- Filtration.** BT: Auxiliary equipment. --: feedwater: boilers 068:0163
- Finance.** USE: Economics.
- Financiers.** BT: Economics. BT: Personnel. --: vs shipbuilders vs owners 102:X003.
- Finite element analysis.** BT: Structural analysis. --: structural: ship design: tankers 087:X005; --: hull mechanics 100:0067. --: structural: propellers: mast seal 105:0127. --: structural: vibration: cargo ships 107:0133.
- Finland (country):** ship production. BT: Countries. RT: Europe. --: management 025:0125; --: automation 104:0143.
- Firefighting.** BT: Equipment. BT: Safety. --: ships: carbon dioxide: sulphur dioxide: water: steam 019:0033. --: ships: 049:0152. --: shiprepairing & refitting 064:0093; -- & prevention: aluminium: ships 065:0219
- Firefighting vessels.** BT: Service vessels. --: no specific par.
- Fish.** BT: Animals. RT: Fishing vessels. --: propulsion: hydromechanics: swimming: Hackaday Lect 093:0027.
- Fish factory & processing vessels.** USE: Fishing vessels.
- Fisheries protection vessels.** USE: Fishing vessels. USE: Warships.
- Fishing vessels.** BT: Service vessels. RT: Small craft. RT: Fish. RT: Towing. --: Vikingen (whale factory ship) 047:0124. --: whaling vessels: Antarctic: crew transportation: flying boats 052:0024; --: defects: ship design: research 056:0103. --: trawlers: model tests: resistance & propulsion 025:0055. --: trawlers: optimisation: hull form 079:0095. --: trawlers: performance: seakeeping: trials 081:0037; --: stern trawlers: hull performance: seakeeping 084:0073. --: seakeeping: performance: Salween (HMS: fisheries protection vessel) 102:0011. --: shipbuilding: Eymouth (par.) 106:0061.
- Fittings.** USE: Equipment. USE: Outfitting.
- Fixed offshore structures.** USE: Offshore craning platforms. USE: Offshore structures.
- Fleet auxiliary & replenishment vessels.** USE: Naval vessels. USE: Tankers.
- Floating docks.** USE: Docks.
- Floating launchers.** Mullberry. BT: Docks. BT: Ports. --: concrete: launching: model tests & trials 083:0045.
- Floating offshore structures & platforms.** USE: Offshore drilling rigs.
- Floating structures.** BT: Structures. NT: Buoys. NT: Ships.
- Floats:** hydroplanes. USE: Hydroplanes.
- Flooding:** ships. USE: Submersion. USE: Stability, damaged.
- Flow meters.** BT: Heads. BT: Instrumentation. --: performance: machinery: steam recip: engines: ships 061:0051
- Fluid dynamics.** BT: Fluid mechanics. NT: Aerodynamics. NT: Drag. NT: Hydrodynamics. RT: Waves. --: boiling: water: pipes: nozzle: steam: machinery 053:0065; --: engineering: Liding Leat 060:0023. --: water: saturated: nozzles: steam: generators 062:0051; --: diesel: propellers: ships 085:0091. --: theory 099:0038.
- Fluid mechanics.** BT: Fluids. BT: Mechanics. NT: Cavitation. NT: Boundary layers. NT: Flow dynamics. NT: Hydrostatics. --: steam: nozzles: nozzles 037:0049. --: turbine: engineering: failure: trends 043:0025; --: water-tube: boilers: circulation: ships 074:0011; --: finite: elements 100:0065.
- Fluid resistance.** USE: Resistance.
- Fluidized-bed boilers.** USE: Boilers.
- Fluids.** HT: Materials. NT: Flow meters. NT: Fluid mechanics. NT: Gases. NT: Water.
- Flying boats.** BT: Aircraft. RT: Hydroplanes. RT: Ships. --: hull form 026:0269. --: future: trends 051:0277; --: crew: transportation: Antarctic: whaling: vessels 052:0024.
- Full supported craft.** USE: High speed craft. USE: Hydrofoil vessels.
- Forced draught boilers.** USE: Boiler run sea. USE: Boilers.
- Forces.** USE: Loads.
- Fore ends:** ships. BT: Hulls. RT: Aft ends. RT: Stows. --: rough: wear: damage: seakeeping: slamming 051:0151.
- Forecasting.** USE: Future trends. USE: Market forecasting.
- Foreign countries.** SN: not Great Britain. BT: Chambers. RT: Great Britain. --: shipbuilding 054:0153.
- Forest products.** RT: Materials. RT: Joinery. --: wood: veneers: plywoods 056:0281; --: joinery: plywoods 056:0293. --: timber: outfitting: warships: small: craft 076:0267.
- Forge hammers.** USE: Forging & casting. USE: Foundries.
- Forging & casting.** BT: Metalworking. NT: Cast irons. RT: Foundries. --: crankshafts: steam: recip: engines 001:0037; --: --: shafts 002:0035. --: boilers: steel: mild 010:0067; --: propeller: shafts: reliability 015:0149; --: diesel: engines 056:0166; --: steel 066:0585; --: engine: cylinders: reliability 040:0355; --: diesel: engines: cast: iron 047:0201. --: steel: fatigue: reliability: tailshafts 044:0221. --: fatigue: steel: mild 048:0121. --: production: stern: gear: engines 065:0315; --: 067:0297. --: residual: stresses: Long Leat 070:0061. --: large: structures: quality: control 098:0061.
- Form:** ships. USE: Hull form.
- Forming: ships.** BT: Weld. RT: Coatings. RT: Corrosion. RT: Performance. --: 016:0161. --: nuts: propeller: design: optimisation: model: tests 051:0381; --: resistance: model: tests 058:0245. --: hull: corrosion 056:0183; --: corrosion 068:0095. --: corrosion: plating 082:0041. --: performance: maintenance: accessories 100:0011.
- Foundations:** engines. USE: Engine foundations.
- Foundations:** offshore structures. USE: Offshore structures.
- Foundries:** general. RT: Industry. RT: Forging & casting. RT: Steel: industry. --: Charles: Carroll & Co: Ltd: history 016:0353. --: forge: factories: vibration: rubber: insulation 066:0155. --: 068:0277.
- Foundries:** visits: NECIES. --: Consett 003:0209; --: Spennymoor 007:0440. --: Smeeth 008:0501. --: Leeds 009:0399; --: Consett 010:0327; --: Middlesbrough 017:0241.
- Fracture mechanics.** USE: Metallurgy. USE: Structural strength.
- Frames:** ships. SN: transverse. BT: Structural design. NT: Stern frames. --: structural: design 014:0097. --: 024:0289; --: timbers: Hardy: Cross: method 069:0157.
- Free surface effects.** USE: Stability: ships.
- Freshboard.** USE: Laid: Laid.
- Freedom of the city.** USE: Awards: NECIES.
- Freight & freighters.** USE: Cargo ships. USE: Trade.
- Fretting.** USE: Structural strength.
- Friction.** HT: Mechanics. RT: Lubrication. RT: Wear. --: wear: piston: rings: internal: comb: engines 052:0145.
- Frictional resistance:** ships: model: tests. RT: Resistance. --: hull: form 052:0041; --: hull: 0115; --: wake 045:0083; --: scale: effects 069:0245; --: wake 078:0445. --: polymer: solutions 081:0201.
- Frigates.** USE: Warships.
- FRP.** SN: --: fibre: reinforced: plastic. USE: Fibre: composite: materials.
- Fuel:** general. BT: Energy: sources. BT: Materials. RT: Cargo. RT: Economics. RT: Engines. RT: Materials. RT: Power: generators. RT: Propulsion. RT: Pumping & piping. RT: Tanks. --: home: oil: &: others: ships 013:0131. --: liquid: oil: &: others 017:0041. --: materials: petrol: internal: combustion: engines 021:0108. --: propellants: &: gunpowder: history 020:0063. --: construction: boilers 029:0191. --: internal: ballistics: internal: combustion: engines 031:0367. --: internal: combustion: engines: combustion 037:0331; --: coal: vs: oil: ships 040:0517. --: combustion: Presidential: Adu: 041:0020. --: 044:0019; --: coal: vs: oil: coal: products: ships 045:0211; --: consumption: steam: vs: diesel: engines: operation: maintenance: ships 051:0229. --: combustion: Liding Leat 063:0125; --: heavy: grade: gas: turbines: combustion 067:0131; --: gas: turbines: combustion: systems 071:0099; --: consumption: performance: tankers 075:0061; --: consumption: ships: waste: heat: recovery: diesel: engines: &: gas: turbines 094:0037. --: oil: &: others: fr-

SECTION 4: SUBJECT INDEX.

ary & future trends 006 0009. -; consumption combined cycles: gas turbines. LNG carriers 102 0159. -; resources. Future trends 108 0059

Fuel: coal. BT. Coal. BT: Fuel -; combustion: smoke 009 0043; -; combustion: steam recip engines: ships 012 0235; -; steam turbine merchant ships 009 0571; - vs oil: ships 040 0517; -; pulverised combustion: vs oil ships 045 0211; -; powdered ships 046 0525; -; future trends 067 0399; -; boiler ship design 098 0125; -; boilers fuelled had 069 0131.

Fuel: gas. BT: Gas. BT: Gas engines -; producer gas engines 022 0229; -; gas engines 023 0079; -; energy: world: Lang Lect 493 0049.

Fuel: oil. BT. Oil. NT: Petroleum. RT: Oil engines. RT: Tankers -; combustion & transport: tankers 003 0077; -; combustion: ships 013 0133; -; boiler furnaces 017 0044; -; injection: combustion: diesel engines 037 0237; -; ships 037 0309; -; diesel engines: fuel injection & combustion: compressed air: ships 008 0317; -; heavy: internal combustion engines: diesel engines 039 0192; - vs coal: ships 040 0517; -; internal combustion engines: steam recip engines: ships 041 0094; -; Presidential Addr 044 0019; -; oil engines: combustion: ships 045 0185; -; combustion: oil engines: heavy 046 0195; -; Presidential Addr 046 0018; -; recycling processes: naval vessels: tankers 068 0133; -; injection: oil & diesel engines: ships 068 0179; -; heavy grade: auxiliary diesel engines: ships 069 0317; -; combustion: boilers: Auro (tanker) 077 0473; -; controlled diesel engines: ships 096 0115; -; auxiliary diesel engines: ships 101 0089.

Fuel cells. RT: Power generators. - 070 0079

Fuelling at sea: naval vessels. USE: Cargo handling equipment. USE: Fuel. USE: Naval vessels.

Full scale tests. USE: Trials.

Fullagar oil engines. USE: Oil engines.

Furnaces. USE: Boiler furnaces. USE: Boilers.

Furniture. USE: Furnings.

Future trends: general. BT. World. NT: Market forecasting. RT: History. RT: Modern. -; engineering: education & training: Great Britain 003 0171; -; aircraft 014 0079; -; power transmission systems: mechanical & electrical 042 0111; -; sciences & engineering: radiography: land machines: vehicles 043 0225; -; tankers: ship design: shipbuilding 046 0410; -; flying boats 051 0277; -; ships: Lang Lect 086 0073; -; shipping & shipbuilding: research: education & training 087 0113; -; computers 088 0076; -; offshore engineering of a gas N Sea 089 0081; -; nuclear powered merchant ships: Blackadder Lect 090 0117; - & history: merchant ships: Lang Lect 091 0077; -; cargo handling equipment: dry cargo ships 092 0005; - & history: shipping: Great Britain: Blackadder Lect 095 0345; - & history: fuel oils & others 096 0009; -; fuel: coal 097 0105; -; environmental regulations: ship design 099 0087; -; automation: ships: classification societies: IACS 1; - & history: engineering: professional: IASME: Presidential Addr 101 0001; - & history: NECTES 101 0145; -; steam turbines: generators: propulsion machinery: power transmission 105 0075; -; engineering: 105 0308; -; new trends: see Presidential Addr 1 05 0067; -; education & training: engineers: Lang Lect 107 0041; -; ships: IMO regulations: Blackadder Lect 107 0025; -; industry: water: Great Britain 108 0005; -; fuel: energy: resources 108 0059; -; engineering: NE England 116 0055; -; professional institutions: NECTES & others: education & training: Lang Lect 108 0005.

Future trends: power & propulsion machinery. -; locomotives: oil engines 058 0141; -; power generators 072 0075; -; engines: thermodynamics: Lang Lect 084 0071; -; electronic control: boilers: ships 094 0001; -; steam turbines vs diesel engines: automation: merchant ships 094 0125; -; steam turbines: power stations: Parsons Lect 097 0073; -; technology: ships 097 0161; - & history: diesel engines: ships 100 0003; -; diesel engine design: ships 100 0029.

Future trends: shipbuilding. -; 030 0331; -; education & training: Great Britain 031 0171; -; marketing: productivity: standardisation 083 0129; -; research: education & training 087 0103; -; tankers: large 087 0016; -; education & training 092 0009; - & history: Great Britain: Lang Lect 092 0047; -; management: conferences: NECTES 094 0000; - & history: Presidential Addr 101 0001; -; economics 102 0005; -; war: ships: Great Britain 107 0067.

Gas. SN: natural or petroleum. BT: Gases. BT: Fuel. BT: Materials. RT: Gas engines. RT: Gas turbines. RT: Liquefied gas carriers. RT: Offshore engineering. RT: Oil. -; venting: tankers: safety 086 0055; -; pipelines: high pressure: vessels 091 0129; -; natural: energy: resources: world: Lang Lect 092 0049.

Gas carriers. USE: Liquefied gas carriers.

Gas engines. BT: Internal combustion engines. RT: Gases. NT: Gas turbines. -; producer: fuel 022 0229; -; 023 0279; -; suction vs other engine types: ships 028 0245; -; steam: ships 028 0265; -; wood producer: diesel engines: turbo-chargers: ships 061 0141.

Gas turbines. RT: Gas engines. BT: Turbines. NT: Combined cycles. RT: Gases. RT: Jet engines. - 041 0347; -; aircraft: propulsion: jet engines 062 0143; -; ships 062 0283; -; 065 0169; -; research: lab: vibration: aircraft: propulsion 065 0085; -; Turbina & MG 1 009 (high speed craft); war: ships: Parsons Lect 065 0117; - & diesel engines: steam-gas power plants: ships 066 0081; -; open cycle: combustion chambers: ships 066 0127; -; fuel: heavy grade: combustion: 067 0131; -; research: Lang Lect 069 0111; -; thermal effects: manufacturing: ships 070 0095; -; high temperature: metallurgy 070 0217; -; single vs multiple combustion systems 071 0009; -; naval vessels 071 0257; -; propulsion machinery: Parsons Lect 070 0077; -; high temperature: blades: refractory 072 0231; -; compressors: streaming effects: tip clearance 074 0075; -; ships & Auro (tanker): hydraulic transmission 077 0427; -; Rolls Royce: propulsion: naval vessels 083 0043; -; heavy: fuel: ships 091 0109; -; waste heat recovery: ships 094 0037; - & steam turbines: warships: Blackadder Lect 094 0051; - & combined jet vs propulsion: ships 096 0011; - & LNG carriers 102 0159.

Gases. SN: any gaseous substance, except natural or petroleum gas. BT: Fuels. NT: Air. NT: Gas [natural & petroleum]. NT: Carbon dioxide. NT: Helium. NT: Liquefied gases. NT: Sulphur dioxide. RT: Aerodynamics. RT: Gas engines.

Gears. BT: Transmission systems. -; slide valve: steam recip engines 010 0215; -; bevel & worm: cutting accuracy: machine tools 013 0161; -; internal combustion engines: ships: Presidential Addr 030 0025; -; toothed: design & manufacture 035 0309; -; May 038 0101; -; reduction: vibration: ships 039 0143; -; hydro-mechanical: Vulture: jet clutches: ships 042 0301; -; Caprotti: valve: steam recip engines: ships 043 0066; -; large 067 0067; -; cutting: machine tools: operations: noise & loads 093 0267; -; casing: industry: Clydebank 071 0119; -; diesel engines: ships 072 0361; -; high torque: design: heat treatment: passenger: ships & tankers 075 0139; -; turbo vs diesel engines: marine engineering 078 0242; -; reduction: operations 100 0010.

Gears: steam turbines: ships. - 028 0257; -; vs steam recip engines: cargo ships 029 0220; -; merchant: ships 036 0073; -; vibration 055 0225; -; natural air: ships 056 0215; -; bearings 077 0205; -; design 100 0159.

General arrangement: ships. RT: Layout. BT: Ship design. RT: Subdivision.

Generators. RT: Electrical equipment & machinery. BT: Power generators. NT: Superconducting motors. -; dynamics: steam turbines: compound 004 0121; -; shipbuilding: Presidential Addr 011 0013; -; diesel: ships 044 0121; -; & steam turbines: Parsons Lect: general & ships 053 0031; -; high-speed: history: Parsons Lect 081 0069; -; Karnot: waste energy: devices:

SECTION 4: SUBJECT INDEX.

- buoys: trails 097:0135; -- superconductors, future trends 105:0075;
- Geographic regions.** BT: World. NT: Cold regions. NT: Continents. NT: Countries. NT: Empires. NT: Inland waterways. NT: International organisations. NT: Oceans & seas. NT: Poles. NT: Towers. RT: Environment. RT: Weather.
- Geology.** RT: Science. -- seabeds: surveying: offshore engineering: submarines 093:0091
- Germany (country).** BT: Countries. BT: Europe. RT: Rhine (river). -- engineering: education & training 020:0017; -- ship production 104:0007.
- Girders: ships.** BT: Structural members. RT: Structural strength -- structural design 041:0051; -- structural design: 065:0099; -- warships: structural analysis: Navier expressions 066:0051; -- passenger ships: structural strength: HVAC 078:0091; -- tankers: longitudinal strength 079:0157.
- Glasgow (port): jnt summer mtg.** NECIES. BT: Clyde (river) & Clyde-side (region). BT: Ports. -- 026:0001; -- 040:0028; -- 043:0281
- Glass.** RT: Materials. RT: Fibre composite materials. RT: Optical instruments. -- materials 081:0039
- Glass reinforced plastics.** USE: Fibre composite materials
- Gluckauf (1885, tanker).** USE: Tankers
- Good Hope (HMS, cruiser).** USE: Warships
- Gotaverken diesel engines.** USE: Diesel engines
- Government.** BT: Countries. NT: Nationalisation. NT: Regulations. RT: Command & control. RT: Great Britain. -- economics: science 052:0287; -- shipbuilding & engineering: subsidies: shipowners 050:0263; -- shipbuilding: subsidies 005:0029; -- regulations: ships: survey & certification: Laidg Lect 096:0031; -- shipping & shipbuilding: economics: conferences: NECIES 097:X000; -- 097:X008; -- shipping: Great Britain: future trends 097:X002; -- shipbuilding: Europe: economics 097:X004; -- marine strategy: Great Britain 100:0099; -- shipbuilding: subsidies: Presidential order 103:0001; -- shipbuilding: Great Britain: nationalisation: Long Lect 104:0019.
- Governors: engines.** USE: Automation. USE: Engines. USE: Steam reciprocating engines
- Grain carriers.** USE: Dry bulk carriers -- no specific pgs
- Graphs: data processing.** USE: Data analysis
- Graving docks.** USE: Docks. USE: Launching. RT: Slipways.
- Gravitation: stamp mills.** USE: Factories.
- Great Britain: general.** SN: only listed here if Great Britain is stated in the title, otherwise see cross-references given. BT: Countries. BT: Europe. NT: England. NT: Northern Ireland. NT: Scotland. NT: Wales. RT: British Empire. RT: English Channel. RT: Foreign countries. RT: Government. RT: North Sea. RT: specific subjects: e.g. Engines. Most entries are under specific subjects: e.g. standardisation: metric system 011:0281; -- naval: engineers: education & training 016:0181; -- education & training: future trends 051:0171; -- engineering: classification societies 045:0259; -- ex: foreign: economics: steel & materials: trade 047:0389; -- offshore engineering: oil & gas 090:X006; -- model tests: ships: history: Parsons Lect 101:0019; -- diesel engines: ships: history: Parsons Lect 101:0019; -- diesel engines: ships: history: Parsons Lect 101:0019; -- water industry: future trends 008:0005
- Great Britain: shipbuilding.** -- education & training: future trends 031:0171; -- classification societies 045:0399; -- merchant ships: WW II: N America: Laidg Lect 059:0001; -- world: Blackadder Lect 084:0161; -- history & trade: ports: Long Lect 092:0147; -- standardisation 052:0173; -- management 096:0131; -- warships: world market 002:X004; -- nationalisation: Long Lect 104:0019; -- warships: future trends 107:0067
- Great Britain: shipping.** -- economics: see power: history: Laidg Lect 058:0033; -- economics: operations 085:0111; -- history & future trends: Blackadder Lect 095:0145; -- government: future trends 097:X002; -- marine strategy 100:0099.
- Great Lakes vessels.** USE: Inland waterways vessels. USE: North America.
- Grillage: ships.** BT: Structural design. RT: Structural members. -- structural strength: weight saving 073:0145; -- tankers: longitudinal strength 079:0137
- GRP.** USE: Fibre composite materials.
- Guided weapons.** USE: Weapons.
- Gun cotton.** USE: Weapons.
- Gunmetal.** USE: Metals.
- Gunpowder.** USE: Fuel. USE: Weapons.
- Guns.** USE: Weapons.
- Gyrocompasses.** USE: Compasses.

- Inhabitability.** USE: Accommodation design.
- Hammers, chipping.** USE: Welding.
- Handling.** USE: Cargo handling equipment. USE: Lifting
- Hanna (OBO carrier).** USE: Combination carriers.
- Harbours.** USE: Ports
- Hardy Cross method.** USE: Structural strength.
- HarGoswold (port): SN including West Harlewood.** BT: Ports. BT: Tees (river) & Teesside (region). -- docks: shipyards: main engine works: visit: NECIES 005:0061; -- marine engine works: visit: NECIES 014:0069; -- 015:0079; -- ship yards: visit: NECIES 016:0001; -- history: 107:0089.
- Harlepool (port): Meetings.** NECIES. -- 005:0042; -- 005:0053; -- 007:0137; -- 007:0171; -- 007:0393; -- 008:0069; -- 009:0043; -- 009:0071; -- 009:0275; -- 010:0067; -- 010:0257; -- 011:0057; -- 011:0281; -- 012:0031; -- 013:0073; -- 014:0077; -- 014:0087; -- 015:0087; -- 016:0115; -- 017:0129; -- 018:0239; -- 019:0131; -- 024:0015
- Harwich (port).** USE: Ports. USE: East Coast England
- Hatch covers.** USE: Cargo handling equipment. -- no specific pgs.
- Havana (port).** USE: Cuba (country). USE: Ports
- Health & safety.** USE: Safety.
- Heat balance & diagrams.** USE: Thermodynamics
- Heat engines.** USE: Engines
- Heat exchangers.** RT: Auxiliary machinery. RT: Steam generators. NT: Condensers. -- nuclear powered ships 075:0205; -- vibration: aerodynamics 092:0091.
- Heat treatment.** USE: Metalworking.
- Heating, ventilation, & air conditioning.** USE: HVAC.
- Heavy lift vessels.** BT: Cargo ships. -- Adventure: Ship Design 077:0249; -- operations: Laidg Lect 103:0047.
- Heavy subjects.** -- See: subjects: e.g. Oil engines
- Helicopter carriers.** USE: Naval vessels. -- no specific pgs.
- Helicopters.** USE: Aircraft. -- no specific pgs
- Helium.** BT: Gases. -- airships 005:0084.
- High powered ships: passenger ships.** BT: Ships. RT: High speed ships -- engine propulsion 042:0249; -- steam turbines: Parsons Lect: Queen Mary & Queen Elizabeth 074:0095.
- High pressure equipment & machinery.** USE: Boilers. USE: Compressor air. USE: Engines. USE: Pumps. USE: Pneumatic equipment. USE: Steam engines. USE: Steam machinery
- High speed craft.** BT: Ships. NT: Hovercraft. NT: Hydrofoil vessels. NT: Hydroplane craft. NT: SWATH vessels. RT: Advanced marine vehicles. RT: High speed ships. RT: Naval vessels. RT: Racing. RT: Small craft. RT: Warships. -- motorcraft: Bluebird: Miss America X 054:0099; -- wave-making resistance: ship-model correlation 080:0047; -- gas turbines: Terima & MGB 2009 (warships); Parsons Lect 065:0117; -- history: shipbuilding: NE England 103:0071
- High speed engines.** USE: engine types: e.g. Diesel engines. e.g. Steam reciprocating engines
- High speed sailing yachts.** USE: Yachts.

SECTION 4: SUBJECT INDEX.

High speed ships: cargo ships. BT. Ships. RT High powered ships. RT: High speed craft. - hull form 024 0187; - design: resistance & propulsion: economics 059 0077; - Glenbeira: Pliant: resistance & propulsion: motor: ship design 087 0277; - counteracting propellers: design 083 0075.

High speed small craft. USE High speed craft. USE Small craft.

High tensile steel. USE Steel.

History: general. BT: World. NT: specific subjects: e.g. Diesel engines. RT: Aging. RT: Future trends. RT: Marine forecasting. RT: Modern. RT: Museums. - Charles Cammell & Co Ltd (steel maker) 018 0355 - engineering: history: Presidential addr 023 0013; - logs: Express (paddle tug) machinery 052 0089; - hull form: merchant ships: sailing ships: rowed vessels: Laing Lect 054 0023; - merchant ships: economics: Great Britain: sea power: Laing Lect 058 0033; - thermodynamics: Laing Lect 065 0065. - NECIES 077 0151; - engineering 080 0261. - & future trends: resistance: ships. Laing Lect 091 0065; - & future trends: Great Britain: shipping 095 0145; - professional societies: warships 100 0035; - NECIES: centenary: engineering & shipbuilding: engineer: ship design: propulsion: propulsion machinery: research: materials 100 0090; - & future trends: engineering: Presidential Addr 101 0021; - & future trends: NECIES 101 0145; - & future trends: engineering: new: Presidential Addr 107 0021; - ports: Harbours 167 0089; - & future trends: professional institutions: NECIES & others: education & training: Laing Lect 168 0095.

History: power & propulsion machinery. - steam turbines 142 0157; - propellants & gunpowder: fuel 026 0023; - steam: machinery: marine: Clyde (river) 043 0281; - marine: engineering 045 0443; - steam turbines: ships 051 0429; - steam: naval: engines 051 0442; - boilers: ships 051 0457; - heavy oil engines: ships 051 0631; - Laing Lect 052 0025; - electric propulsion: diesel electric: ships 055 0081; - & propulsion: ships 061 0183; - turbines: Parsons Lect 059 0133; - hydraulic transmission systems: ships 074 0285; - high-speed: generators: Parsons Lect 081 0069; - turbo-diesel engines: ships: Laing Lect 090 0061; - marine: engineering: Laing Lect 101 0037; - diesel engines: ship 100 0023; - ships & general: NECIES: centenary 100 0001; - diesel engine: ships: Great Britain 105 0019; - marine: engineering: NE England: conferences: NECIES 105 0059; - Tyneside: marine engine builders 105 0060; - diesel engines: Cardiff: ships 105 0062; - marine: engineering 105 0062.

History: ship design. - systems 109 0577; - safety: lifeboat: subdivision: licensing: regulatory: ships 043 0425; - ocean vessels: Laing Lect 051 0077; - passenger: ships 051 0577; - cargo ships & tankers 051 0593; - coasters 051 0417; - NECIES: centenary 100 0000; - model tests: Great Britain: ships: Parsons Lect 101 0019; - Turbom steam turbine: high speed craft: 105 0072.

History: shipbuilding. - reports: NECIES: statistical: systems 004 0303; - merchant ships: NE England 024 0045; - warships: Clyde (river) 026 0191; - warships: ship 043 0477; - & future trends: Great Britain: Laing Lect 092 0007; - NECIES: centenary 100 0000; - & future trends: Presidential Addr 161 0001; - conferences: NECIES: NE England 105 0071; - crews: outfitting 103 0072.

HMS. SN - Her Majesty's Ship. USE Naval vessels.

Holland. USE Netherlands (country).

Hulhead project (port). RT Ports. - containerships 096 0057.

Honorary Fellowships. NECIES. USE Awards. NECIES.

Horse-power. USE Powering.

Hovercraft. RT Air cushion vehicles. RT High speed craft. BT: Ships. RT Aerofcraft. - design 080 0245.

Hull form: general. RT: Hull. BT: Ship design. NT: Bulwark: bows. RT: Hydrostatics. RT: Model tests. RT: Resistance. - flying beam 026 0269.

Hull form: ships. - liner plans 014 0016; - high speed 024 0087; - corrugated sides: Monitoria (ss) 026 0257; - resistance 028 0029; - corrugated sides: resistance & performance: Monitoria (ss) 028 0059; - cargo ships: performance: economics 029 0047; - liner plans: model tests: resistance 032 0041; - model tests: economics 045 0144; - merchant ships: powering: resistance 044 0047; - destroyers 049 0178; - Aerofcraft: trials: performance 050 0269; - bulwark: bows: resistance & propulsion 052 0085; - cargo ships: Accioner & Marloria: resistance & propulsion 052 0193; - merchant ships: sailing ships: rowed vessels: history: Laing Lect 054 0033; - single screw: performance: weather: storms 057 0133; - merchant ships: model tests: WW II 064 0289; - laminar flow 066 0194; - wavemaking: resistance: ship-theory: correlation 067 0642; - hydrostatic curves 070 0329; - tankers: model tests: resistance & propulsion 072 0379; - passenger cargo ships & tankers: trials 075 0165; - fishing vessels: automation 075 0095; - liner plans: mathematics: design: merchant & naval vessels 081 0071; - resistance 087 0139; - & floating structures 093 0015; - air: noise: vibration: resistance 095 0191; - Laing Lect 167 0017; - wind loads: performance: meteorology 097 0175; - full: resistance: ship design 100 0007.

Hull roughness. USE Fouling. USE Resistance.

Hull-propeller interactions. - model tests: propulsion: coasters 050 0249; - ships 054 0229; - trials: performance: data analysis 075 0425; - 160 0065.

Hulls. BT: Ships. NT: All ends. NT: Appendages. NT: Bottoms. NT: Bows. NT: Bulges. NT: Bulkheads. NT: Decks. NT: Fore ends. NT: Hull form. NT: Machinery space. NT: Merchant ships. NT: Multi-hull ships. NT: Sterns. NT: Tanks. RT: Fouling. RT: Resistance. RT: Superstructures. - corrosion 052 0027; - & hinge keels: rolling motions 056 0025; - corrosion & fouling 059 0183; - structural design: classification 064 0139; - & superstructure: passenger ships: vibration 064 0193; - loading: carrier 068 0093; - corrosion & fouling: tanker: piping: economics 069 0285; - & superstructure: vibration: data analysis: graphs 073 0311; - fouling: corrosion: pipes 082 0041; - fouling: performance: economics 100 0011; - engine-excited hull vibration 103 0059.

Human beings. USE Personnel.

Human error. USE Safety.

Human powered vessels. RT: Propulsion. BT: Ships. NT: Rowed vessels.

HVAC: general. SN - Heating, ventilation & air conditioning. RT: Air. RT: Operations. RT: Water. RT: Accommodation design. RT: Auxiliary machinery. RT: Coasters. RT: Fan. RT: Refrigeration. - fans, screw 016 0013; - electrical equipment 045 0347; - dock railways: underground 046 0095.

HVAC: ships. - forced circulation 017 0073; - accommodation & cargo spaces 036 0221; - cargoes: corrosion: moisture 063 0219; - accommodation: design 064 0119; - cargoes: scanning 067 0027; - machinery spaces 067 0515; - corrosion: cargo 068 0249; - corrosion: motorous: ca: coaters 073 to Austria 071 0237; - passenger ships: deck: structural strength 078 0091.

Hydraulic machinery. RT: Machinery. - towing & others 012 0061; - gun: warships 033 0090.

Hydraulic transformers. - 070 0331.

Hydraulic transmission systems. USE Transmission system.

Hydrocarbons. USE Gas. USE Oil.

Hydrodynamics: ships. RT: Fluid dynamics. RT: Ship design. RT: Aerodynamics. RT: Boundary layer. RT: Resistance. RT: Water. - ship design 015 0025; - boundary layers: emp: cases 077 0167; - catamaran & multi-hulled vessels 081 0129; - towing: tankers: English Channel 089 0331; - dynamic: pressureing 092 0089; - model tests 106 0085.

Hydroelectric power stations. USE Power station.

SECTION 4: SUBJECT INDEX.

Hydrofoil vessels. BT: High speed craft. -> ship design 082 0166; -> yachts, sailing: Mayfly 096:0065.

Hydrofoils. USE: Hydrofoil vessels. RT: Aerofoils

Hydromechanical gears. USE: Gears.

Hydroplan (anchoir). USE: Anchors

Hydroplane vessels. BT: High speed craft. -> Presidential Addr 027 0017.

Hydroplanes. BT: Aircraft. -> tests: design 090:0251.

Hydrostatic lubrication. USE: Lubrication

Hydrostatic stern gear. USE: Stern gear.

Hydrostatics ships. RT: Fluid mechanics. RT: Ship design. BT: Stability. RT: Draught. RT: Hull form. RT: Stability. -> displacement tables. Tchebycheff formulae: stability 019:0155. -> trim curves: stability 023:0095. -> displacement-draught formulae 040:0528. -> curves: 070 0029

Ice. RT: Water. NT: Icebreaking ships. RT: Cold regions. RT: Weather. -> formation: and weather: ships 088:0175; -> infested waters: Arctic, offshore vessels: ship design & operation 103:0013.

Icebreaking ships. BT: Ice. BT: Service vessels. -> trim: ferry: Russia: inland waterways vessels: shipbuilding 026 0181

IHP. USE: Indicated horsepower.

Illustrous (BMS, aircraft carrier). USE: Warships.

INCO. USE: International organisations. USE: Regulations

Immersion- propellers. USE: Propellers. RT: Balancing. RT: Draught.

IMO. SN: -> International Maritime Organisation, formerly IMCO. USE: International organisations. USE: Regulations

Inclining experiments: ships. USE: Stability.

Incorporated engineers. USE: Education & training. USE: Engineers.

Index NECTES. SN: indexes to publications of the Institution. Most volumes of Transactions contain an annual index which are not listed in this index. BT: Publications NECTES. NT: Chronological Index. NT: Corporate Name Index. NT: Personal Name Index. NT: Subject Index. -> v 1:52 1884-1936 082 1152. -> v 52-65 1936-1949 005:0168; -> v 53-75 1936-1959 076:1001. -> v 76-85 1960-1969 062:0001; -> v 1:138 1884-1995 108:XXXX.

Index terms. SN: explanation of terms used in this index. -> BT -> Broader Term - see also. -> NT -> Narrower Term - see also. -> RT -> Related Term - see also. -> SN -> Source Note - explanatory notes. -> UF -> Use For. -> USE -> Use - see instead.

India (country). BT: Asia. RT: Countries. -> railway carriers: inland waterways vessels: ship design 006 0209.

India (railcar carrier, river vessel). USE: Railcar carriers. USE: Inland waterways vessels.

Indicated horsepower. SN -> IHP. USE: Powering. USE: Steam engines.

Industrial relations. BT: Management. RT: Personnel. RT: Trade unions. -> Presidential Addr 015:0013; -> workshops 018:0211; -> Presidential Addr 038:0025; -> 041 0020. -> ports, ships: cargo handling equipment 043 0175; -> shipbuilding 065:0263. -> Fairfields 083:0032; -> shipyards & docks & ports: Tyne side 092:0077; -> regulations 196 0006; -> Presidential Addr 059:0001; -> trade unions 099:0027. -> shipyards & industry: Japan: Long Leat 102 0037

Industry. SN: Engineering industry. RT: World. NT: Engineering works. NT: Factories. NT: Establishments. NT: Manufacturing. NT: Nationalised industries. NT: Shipyards. RT: Engineering. RT: Production. -> Cardiff summer city NECTES 012:0180. -> electrical equipment: economics 051 0153. -> Presidential Addr 084:0001; -> NE: England: WW I 035:0179; -> economic: steel & materials: Great Britain & foreign trade 047 0389 -> & science: museums: Newcastle 049 0256. -> Sir C.A. Parsons 053:0055; -> craftsmen: education & training 056:0129; -> students: education & training: reports NECTES

060:0295. -> science: craftsmanship: engineering & shipbuilding 062:0091; -> gear cutting: Clydebank 071 0319. -> marine: management: work study 081:0098; -> coal mining: management: nationalised 082:0145. -> steel: Long Leat 087:0057; -> computers: use in: conferences NECTES 088:XXXX. -> marine: corporate research: Blackadder Lect 091:0121. -> chemical: safety: risk analysis 093:0117; -> Japan: management & industrial relations: Long Leat 102:0051. -> marine: press: Blackadder Lect 102 0073; -> oil: project management: 107:0051. -> water: future trends: Great Britain 108:0005; -> chemical: science: education & training 108:0055.

Inertial navigation. USE: Navigation

Indivisible fittings. USE: Lifesaving craft & appliances

Information analysis. USE: Data processing. RT: Communication.

Information technology. USE: Computers

Inland waterways. BT: Geographic regions. RT: Continents. RT: Inland waterways vessels. RT: Oceans & seas. -> river engineering: Tyne (river) 003:0291; -> canals: Tyne to Seaway Firth 026:0351; -> Suez & Panama Canals: Presidential Addr 027:0017; -> Tyne (river): Presidential Addr 055:0018

Inland waterways vessels. BT: Ships. RT: Barges. RT: Colliers. RT: Inland waterways. -> ship design: railcar carriers: India 008:0209; -> ship design: passenger ships: London 022:0171; -> Jackal (Jaka, Russian) trim ferry 026:0181; -> King George V (Clyde river ship): economics: operations: steam turbines 043 0155; -> Clyde (river): motor yachts 043:0281; -> King George V (Clyde river ship): steam turbines 046:0260; -> Peter G Campbell (Great Lakes tank-barge) welded 050:0083. -> Rhine: Suez: ship-model correlation 070 0279. -> steamy boats: Bangladesh 096 0153

Innovation. USE: New innovations

Inspection. USE: Surveying

Installation: ships. USE: Crafting

Instruments. BT: Equipment. NT: Chronometers. NT: Compasses. NT: Drawing instruments. NT: Flow meters. NT: Optical instruments. NT: Pendulums. NT: Photography. NT: Strain gauges. NT: Tension meters. -> research: rubbery ships 071 0051. -> displacement: environmental testing 107 0149

Insulation. USE: Outfiting. USE: Vibration.

Insurance: merchant ships. BT: Economics. RT: Liability. RT: Regulations. -> seaworthiness: regulations 041 0287

Intact stability. USE: Stability

Integrated systems. BT: Computers. Design, used in. RT: Design. -> ship design: CAD 104:0070

Inter-Governmental Maritime Consultative Committee. USE: IMCO

Interior design: passenger ships. USE: Crafting. RT: Ship design. NT: Art & aesthetics.

Internal combustion engines. BT: Engines. NT: Gas engines. NT: Oil engines. NT: Petrol engines. RT: Combustion engines. RT: External combustion engines. RT: Motorscars. -> petrol: motorscars 021:0139; -> Presidential Addr 027:0017; -> 2 cycle: charging 030:0433; -> High speed: 034 0267. -> fuel: internal: indicators 034 0367; -> & diesel engines: power: efficiency 035:0411; -> fuel: combustion 037 0381. -> fuel: oil, heavy 039:0192. -> locomotives 041:0245. -> Devaga: engine 051:0151. -> piston rings: wear 052 0143. -> vibration: 053 0223

Internal combustion engines: ships. -> propulsion 027:0253; -> gears & vapourisers: ships: Presidential Addr 030 0025. -> 051:0315; -> review 059:0301. -> Vickers 059 0321. -> Workshop 059:0323. -> Sidi engine: ships 040 0349. -> Laid out 041:0091. -> auxiliary: 050 0197. -> gas turbines 062 0283; -> design & operation: marine engineering 078 0243.

International Maritime Organisation. USE: IMO

International organisations. BT: Geographic regions. BT: Organisations. -> IMCO: regulations: survey & certification: ships: Long Leat 096 0031; -> marine: IMCO: future trends: Blackadder Lect 101:0075.

SECTION 4: SUBJECT INDEX.

International relations. BT: World. NT: Trade. RT: Countries. RT: Regulations. -- awards NECIES: Hon. Fellowship 054-0415

International <subjects>. USE: <subjects> except for the above.

Inventiveness: design and ship design. USE: New innovations

Investment. USE: Economics

Irania (motor vessel). USE: Motorships.

Iron. BT Metals. NT: Steel. NT: Cast iron. NT: Ferroalloys. NT: Iron steps. RT: <specific structures> e.g. Crankshafts. -- & steel crankshafts: steam recip engine: forging & casting 001-0037 -- & steel & copper steam pipes: ships 007-0013 -- wrought: boiler tubes: ships 076-0095

Iron ore carriers. USE: Ore carriers.

Iron ships. RT: Iron. RT: Ships -- shiprepairing & structural design 015-0021.

IT, SN = Information technology. USE: Computers

Italy (country). BT: Countries. BT: Europe. -- ship production: automation 101-0143.

Jacket platforms. USE: Offshore drilling platforms

Jackson Lecture. SN: alter Percy Jackson. BT: Lectures NECIES -- engineers: education & training: polytechnics 090-0111.

Jack-up rigs. USE: Offshore drilling rigs

Japan (country). BT: Asia. BT: Countries. -- outfitting: pipes: ships 092-0062 -- Kamae (wave energy device) buoy: trials 097-0135. -- Saito Aioka Maru (sal-assisted tanker): aerodynamics 092-0075. -- Natsushima (research ship): Shinko 2000 (submersible) 101-0155; -- shipyards & industry: management: industrial relations 102-0037 -- shipyards: production: quality control 106-0127

Jet engines. BT: Internal combustion engines. RT: Aircraft. RT: Gas turbines -- DeWain V Jet's (fr aircraft) 067-0145

Jet flaps: ships. USE: Manoeuvring devices.

Joinery. BT: Machine tools. BT: Materials. RT: Forest products. RT: Outfitting -- wood veneers 056-0281 -- plywood: tools: wood veneers: plywood 056-0293

Jubilee meeting NECIES. USE: Meetings NECIES.

Jumboising: ships. USE: Converters.

Kamae (wave energy device). USE: Wave energy devices

Kaplan turbines. USE: Turbines.

Keels. USE: Rigs keels

King George V (Clyde river steamer). USE: Inland waterways vessels.

Kort nozzles. USE: Propellers, ducted

La Mout boilers. USE: Boilers

Laboratories. USE: Research.

Laing Lecture: number & year. SN: alter Andrew Laing (1856-1931). RT: Lectures NECIES.

- 1 1932 349-0029. - 2 1933 050-0025. - 3 1934 051-0077
- 4 1935 002-0025. - 5 1936 053-0161. - 6 1937 054-0085
- 7 1938 055-0093. - 8 1939 056-0043. - 9 1940 057-0097.
- 10 1941 058-0033. - 11 1942 059-0061. - 12 1943 060-0027.
- 13 1944 061-0027. - 14 1945 062-0025. - 15 1946 063-0123.
- 16 1947 064-0027. - 17 1948 065-0068. - 18 1949 066-0083.
- 19 1950 067-0069. - 20 1951 068-0031. - 21 1952 069-0111.
- 22 1953 070-0061. - 23 1954 071-0089. - 24 1955 072-0027.
- 25 1956 073-0031. - 26 1957 074-0041. - 27 1958 075-0037.
- 28 1959 076-0027. - 29 1960 077-0185. - 30 1961 078-0017.
- 31 1962 079-0021. - 32 1963 080-0065. - 33 1964 081-0021.
- 34 1965 082-0017. - 35 1966 083-0047. - 36 1967 084-0091.
- 37 1968 085-0051. - 38 1969 086-0092. - 39 1970 087-0057.
- 40 1971 088-0083. - 41 1972 089-0045. - 42 1973 090-0061.

- 43 1974 091-0067. - 44 1975 092-0017. - 45 1976 093-0049.
- 46 1977 094-0087. - 47 1978 095-0019. - 48 1979 096-0051.
- 49 1980 097-0017. - 50 1981 098-0016. - 51 1982 099-0011.
- 52 1983 100-0037. - 53 1984 101-0075. - 54 1985 102-0037.
- 55 1986 103-0047. - 56 1987 104-0019. - 57 1988 105-0081.
- 58 1989 106-0027. - 59 1990 107-0041. - 60 1992 108-0095.
- 61 1993 108-0095.

Laing Lecture: engineering. -- materials: molecular structure: radiography 055-0032. -- fluid dynamics 060-0025. -- thermodynamics: history 063-0065. -- structural analysis 063-0031. -- mechanical: design: research 079-0021. -- heavy lift: road transport & ships 100-0047. -- education & training: future trends 107-0041. -- design 108-0065. -- NECIES & others: history & future trends: professional institutions: education & training 108-0095.

Laing Lecture: marine engineering. -- metallurgy 050-0025. -- metals: ferrous 072-0027. -- & naval engineering 082-0017. -- classification: statistics 089-0045. -- history 108-0037.

Laing Lecture: materials. -- metallurgy: atomic engineering: shipbuilding 050-0025. -- molecular structure: radiography: engineering 055-0032. -- metallurgy: physics 052-0025. -- forging & casting: residual stresses 070-0061. -- ferrous: marine engineering 072-0027. -- fibre composites 106-0027.

Laing Lecture: naval vessels. -- structural design 061-0027. ship design 077-0085. -- propulsion 081-0021

Laing Lecture: power & propulsion machinery. -- oil engines: ships: history 052-0025. -- steam generators: land & ships 051-0161. -- fuel combustion 063-0125. -- steam turbines: ships: research: labs 064-0021. -- diesel engines 067-0069. -- gas turbines: research 069-0111. -- engineering: science: nuclear energy 071-0089. -- diesel engines: ships 074-0041. -- nuclear powered ships: marine engineering 078-0017. -- Delfore diesel engines: ships 080-0045. -- naval vessels 081-0021. -- engines: thermodynamics: future trends 084-0071. -- Silver diesel engines: history: ships 090-0061. -- energy: resistance: gas: world 093-0091. -- design: performance: prototype: trials 093-0019. -- diesel engines: ships 099-0014. -- diesel engines 101-0035.

Laing Lecture: ship design. -- History: biography 020-0029. -- hull form: history: merchant ships: sailing: ships: naval vessels 034-0052. -- structural: electric: welding: Man-O-War: passenger: ships 051-0042. -- structural: naval vessels 051-0027. -- nuclear powered merchant ships: propulsion: structural strength 075-0027. -- naval vessels 077-0185. -- safety: navigation 088-0082. -- resistance: history & future 091-0067. -- hull form 097-0017. -- 108-0068.

Laing Lecture: shipbuilding. -- metallurgy 050-0025. -- merchant ships: Great Britain: N America: WWII 059-0061. -- information: computers: software: research 083-0047. -- Great Britain: history & future trends 092-0047. -- marketing 092-0087. -- team management & industrial relations 102-0057. -- Great Britain: atomised industry 104-0019

Laing Lecture: ships. -- merchant: economics: Great Britain: sea power: history 058-0033. -- future trends 086-0073. -- regulations: certification & surveying: LR: IMCO 090-0031. -- safety: navigation: information 098-0016. -- computers 105-0051.

Lanes. USE: Inland waterways.

Lagged hulls. USE: Stevedoring.

Large ships. BT: Ships. RT: Bulk carriers. RT: Small craft. RT: Tankers. -- cellular: merchant ships: structural design 010-0219. -- cargo ships: structural design: superstructures 016-0089. -- steelhull: lagged hull: stevedoring 019-0185. -- tankers: hull form: trials 075-0195. -- tankers: propulsion & auxiliary machinery: Laing Lect 076-0027. -- passenger ships: deck seatings: aluminium 077-0021. -- ore carriers: vibration 086-0064. -- tankers: shipbuilding: future trends 087-0096

Laser: welding: shipbuilding. BT: Electronic equipment & machinery. BT: Optical instruments. -- 099-0106. -- 101-0127. -- 101-0103. -- 103-0026

SECTION 4: SUBJECT INDEX.

LASH vessels. USE: Barge carriers.

Lathes. USE: Machine tools.

Launching: ships. BT: Operations. RT: Commissioning. RT: Decks, graving. RT: Shipbuilding. RT: Shipyards -- 003:0149; --: naval vessel. S. Dakota (USN, cruiser: 021-0077; triggers 051:0159. --: dynamics; structural strength & resonance 052:0361. --: side: Mulberry (concrete floating harbour) 053:0343; --: tankers: structural strength 070:0253; --: tankers: dynamics 076:0131. --: tugger: shipbuilding 097:0194

Layout. BT: Ship design. NT: General arrangement: ships. NT: Machinery layout

Laws & Law of the sea. USE: Regulations.

Laying off. ST: Shipbuilding. RT: Laying. --: scribe boards: bottoms: shipbuilding 036:0138

Lectures. NECIES. BT: Meetings. NECIES. NT: Blackadder Lectures. NT. ECRO Lecture. NT: Jackson Lecture. NT: Parsons Lecture. NT: Presidential Address. NT: specific subjects, e.g. Diesel engines. RT: Authors. NECIES

Leeds (town). BT: Northern Eng and BT: Towns. --: locomotives: vics. NECIES 009:0395.

Legislation. USE: Regulations.

Lengthening: ships. USE: Conversions.

Level engines. USE: Engines

Level. USE: Chimneys.

Liability. BT: Professional activities. ST: Regulations. RT: Insurance. --: no specific pp.

Library. NECIES. USE: NECIES Library.

Lifesaving craft & appliances. BT: Safety. BT: Service vessels. BT: Small craft. BT: Auxiliary equipment. --: ships 070:0152. --: Fire: ships 045:0525. --: passengers: emergency evacuation: ships 047:0072. --: emergency evacuation: ships 066:0194; --: RNLI lifeboats 075:0073.

Lifting machinery. BT: Machinery. NT: Cargo handling equipment. NT: Chain cable lifts. NT: Cranes. NT: Winches. RT: Decks

Light alloys. USE: Aluminium.

Lights, electric. BT: Electrical equipment & machinery. --: 007:0259. --: ships 009:0249; --: searchlights: ships 046:0363; --: shipyards 067:0139.

Limited companies. USE: Companies

Liner trades. USE: Cargo ships

Liners. USE: Passenger ships. USE: Cargo ships

Lines plans: ships. USE: Hull form. RT: Laying

Lionheart (international 12m racing yacht). USE: Yachts

Liquefied gas carriers. BT: Liquid bulk carriers. RT: Liquefied gases. --: ship design 067:0059; --: economics: operations 060:0060; --: operations. Blackadder Lec. 092:0101; --: LNG: tanks: structural design 096:0197. --: LNG: gas turbine combined cycles: fuel economy 022:0159.

Liquefied gases. BT: Gas. BT: Fluids. RT: Liquefied gas carriers. RT: Refrigeration. --: Blackadder Lec. 092:0101.

Liquid bulk carriers. BT: Bulk carriers. NT: Liquefied gas carriers. NT: Tankers. RT: Combination carriers.

Liquid cargoes. USE: Cargo. USE: Liquid bulk carriers

Liquid fuel. USE: Fuel. USE: 1)

Liquids. USE: Fluids. USE: Liquefied gases

Living spaces. USE: Accommodation design

Lloyd's Register of Shipping. USE: LR

Lloyd's rules. USE: Classification. USE: LR. USE: Regulations

LNG. SN: --: Liquefied natural gas. USE: Liquefied gases

LNG carriers. SN: Methane carriers. USE: Liquefied gas carriers

Land lines: ships. BT: Regulations. BT: Ship design. RT: Draught. RT: Stability. --: stability: merchant ships 002:0059; --: scalings: structural design 015:0125. --: regulations: history: freeboard: stability: lifesaving: ships 045:0225

Loaded conditions: ships. USE: Ballasting: ships.

Loads. BT: Dynamics. NT: Environmental loads. NT: Structural loads. BT: Structural design. RT: Structural strength.

Locomotives. BT: Railways. RT: Engines. --: structural: strength: materials 016:0027; --: boilers 025:0287; --: Presidential: Aech 027:0017; --: industrial: design 031:0091; --: performance 039:0592; --: internal combustion engines 041:0045; --: steam: maintenance & repair 048:0045; --: steam recip: engines 050:0207; --: oil engines: future trends 058:0143.

Lifting. BT: Shipbuilding. RT: Laying off. RT: Lanes: plans. --: no specific pp.

London (port). RT: Ports. RT: Southern England. --: Meetings. NECIES, jnt summit 040:0528. --: underground railways 002:0033.

Longitudinal bending: ships. USE: Longitudinal strength.

Longitudinal strength: ships. BT: Structural strength. --: bending: classification 010:0287; --: Wolf (HMS destroyer): bending 041:0123. --: steam reciprocating engine: foundations. Ocean Vulcan (cargo ship) 049:0045. --: tankers 075:0039. --: computers: ship design 077:0053. --: wave bending 077:0107. --: transverse strength: computers 077:0091. --: tanker: bulkheads, girders 079:0131. --: weight: distribution: performance: wave-making resistance 079:0165. --: beams, double 081:0173; --: tankers: high tensile steel 081:0281; --: model tests 082:0235.

Losses. USE: Casualties. USE: Performance

Low carbon steel. USE: Steel.

Low speed diesel engines. USE: Diesel engines

Low speed manoeuvring. USE: Manoeuvring.

LPG. SN: --: liquefied petroleum gas. USE: Liquefied gases.

LPG carriers. USE: Liquefied gas carriers

LR & LRS. SN: = Lloyd's Register. USE: Classification. USE: Classification societies. RT: LR (in: Corporate Name Index).

Lubrication. BT: Engineering. RT: Oil. RT: Bearings. RT: Friction. RT: Maintenance. RT: Wear. --: oil: machinery: performance 022:0061; --: oil: boundary layers 044:0207; --: ships 058:0173; --: water: bearings: ships 074:0357. --: oil: cavitation: water: thrust: shocks: steam turbines: ships 081:0305

Mang gears. USE: Gears.

Machine tools. BT: Irony. BT: Metalworking. BT: Tools. --: gears: cutting: accuracy: control 013:0161; --: operating: speeds: performance 018:0021. --: performance 027:0267. --: 025:0176. --: 043:0099; --: cutting 045:0147. --: joinery 056:0293. --: gears: cutting: accuracy: control 063:0267. --: gear-cutting: industry: Cyclopedia 071:0319. --: research & design 080:0151. --: numerically controlled machines: shipbuilding 088:0060. --: 089:0121

Machinery. SN: usually propulsion & auxiliary machinery of ships. BT: Structures. NT: Auxiliary machinery. NT: Lifting machinery. NT: Machinery layout. NT: Pneumatic equipment. NT: Propulsion machinery. NT: Pumping & piping. NT: Refrigerator. NT: Steam machinery. RT: Automation. RT: Engines. RT: Equipment. RT: Maintenance. RT: Naval engineering. --: hydraulics. --: sailing & others 012:0061. --: shipbuilding 015:0023. --: maintenance & repairing: welding 019:0165. --: centrifugal: fans & pumps 014:0042; --: wave power: transmission: mechanics: vibration 019:0032. --: using: springs & wires 068:0291. --: tankers 076:0021. --: manufacturing: underwater: plunges 102:0035.

Machinery: ships. --: salvage: system 002:0171; --: hydraulic: guns: warships 003:0290; --: weight: merchant ships: economics 006:0253. --: standardisation: trade: economics 043:0269; --: rejuvenation: reconditioning: steam recip: engines 048:0344; --: 073:0081. --: Luga Express (passenger): History 052:0089; --: vibration: marine: engineering 053:0127; --: performance: low: powers 061:0051; --: naval vessels: maintenance 066:0257; --: reliability & repairing 075:0369; --: merchant ships: maintenance: shipowners: problems 075:0457; --: reliability: repair & maintenance 078:0193; --: control: systems: automation 081:0213; --: steam turbines: repair: types: tankers 082:0054. --: warships: maintenance & repair 087:0229; --: supercavitator

SECTION 4: SUBJECT INDEX.

- control systems: electronics 087-0051; - systems engineering 090-0021; - economics design: operations 099-0058; - warships: steam & gas turbines 099-0053
- Machinery layout.** BT: Design. BT: Machinery. NT: Engine rooms. RT: General arrangement. RT: Machinery spaces. -> dry cargo ships: optimisation 081-0371.
- Machinery spaces.** BT: Hulls. BT: Structural design. NT: Boiler rooms. RT: Machinery layout. -> HVAC: habitability: ships 067-0315
- Machines.** BT: Structures. NT: Electrical equipment & machinery. NT: Economic equipment & machinery. NT: Machine tools. NT: Power generators. NT: Robots. NT: Transmission systems. RT: Automation
- Made-to-order products.** RT: Structures. -> computer: used production 106-0045.
- Magnetism.** BT: Science. RT: Compasses. -> shipbuilding: cargo ships 023-0249
- Mainform.** USE: Hull form.
- Main engines.** USE: Engines. USE: Propulsion machinery.
- Maintenance.** BT: Operations. BT: Structures. NT: Catering. RT: Conversions. RE: Corrosion. RT: Lubrication. RT: Reliability. RT: Repairing. RT: Wear. - & repair: boilers: ships 001-0073. - & - 017-0223; - & repair: steam locomotives 018-0045. - & repair: machinery: steam: recip engines: ships 018-0244. - & - 049-0081; -> economics: steam vs diesel engines: operations: ships 051-0029; - & repair: boilers: cargo ships 054-0067. -> machinery: naval vessels 069-0267. -> machinery: merchant ships: shipowners: problems 075-0437. - & repair: machinery: naval vessels 082-0229. - & repair: economic optimisation: ships 090-0009. -> using: schedules: plan of: ship's structures 090-X002; -> hulls: propellers: economics 100-0101.
- Management: general.** BT: World. NT: Industrial relations. NT: Marketing. NT: Policy making. NT: Quality assurance. NT: Workshop: costkeeping. RT: Economics. RT: Operations. -> Presidential Adh: 025-0025. -> science: economics 032-0287; -> Presidential Adh: 039-0007. - & - 039-0247; -> Presidential Adh: 057-0817; - 064-0151; -> planning: Presidential Adh: 066-0027. -> managers: regulations: editors 076-0339. -> work: study 080-0235. -> engineering: production 086-0057. - & - 087-X002; -> economics: company: planning 087-X067; -> personnel: role: value: communication: leadership 091-X005; -> education & training: universities 102-0071. -> computer: mg: Presidential Adh: 105-0001.
- Management: industry.** -> workshops: cost estimating: record keeping 018-0275. -> workshops: economics 018-0311; -> marine: work study 031-0058; -> cost: mining: nationalised 062-0103. -> railways: management: Lateral: RE:0133; -> Japan: Laing Lecture 102-0023. -> -> projects: 100-0081.
- Management: ship design.** -> simulation: network: modelling 087-X004; -> warships: project: planning 088-0008.
- Management: shipbuilding & ship production.** -> research & training 031-0171; -> economics 043-0121. 047-0333. -> psychology: economics 043-0235; -> labour: relations: ship design 043-0249. - 046-0335. -> line & motion studies 061-0035. - 063-0141; -> examples 079-0091; -> productivity: Fairfield: 085-0035; -> long: range: planning: supply & demand: tanker 085-0059; -> simulation: network: modelling 087-X004. -> strategic: planning 091-0181; -> future: trends: conferences: NECIES 094-X000; - 094-X001; -> computers 094-X002. - & - 094-X007; -> planning 094-X004. -> large: ship: structures: quality: control 095-0061; -> Great Britain 095-0151; -> station: at: process: control 105-0111
- Management: shiprepairing.** -> Great Britain: WW II 063-0105. -> computers 094-X023
- Management: ships.** -> work: study 083-0121
- Management: shipyards.** - 015-0082. - 017-0129. -> Finland 025-0125; - 017-0079; - 02-0103; -> reorganisation: conferences: NECIES: Tyreside 077-0077. - & - 077-0175. - & - 077-0088. - & - 077-0085. - & - 077-0101. - & industrial: rela-
- tions: Japan: Laing Lecture 102-0023. -> nationalised: Great Britain: Laing Lect: 104-0019.
- Managers.** BT: Management. NT: Personnel. -> regulations: officials 076-0339.
- Manoeuvring ships.** BT: Operations. NT: Dynamic positioning. NT: Manoeuvring devices. RT: Coal fires. RT: Navigation. -> shallow waters & inland waterways 043-0528. -> Beaton: George (author): ship: trials: propulsion 055-0177; -> stopping: ships 061-0311; -> rudders: vibration: reliability 068-0213; -> steam & gas turbines: thermal effects 070-0091; -> & turning: ships 076-0079; -> automation: control: gyrocompasses 078-0057; -> zero & low speed 080-0031; -> dynamic: positioning: hydrodynamics 092-0053; -> collecting: material: draft 093-X007. -> turning: circles 095-0214. -> wind: loads: hull form 097-0123. -> regulation: ship: design: future: trends 099-0087.
- Manoeuvring devices: ships.** BT: Manoeuvring. NT: Rudders. NT: Steering gear. NT: Thrusters. RT: Appendages. RT: Propellers. RT: Propulsion machinery. -> rudders 044-0341; -> -> two-screw ship: model: tests 049-0091. -> steering gear: electric & steam 050-0101; -> rudders: single screw ships 075-0087. -> zero & low speed: gy. Comp. propellers: rudders: low: thrusts 086-0031; -> stern gear: hydrostatic: design 090-0067.
- Manpower.** BT: Resources. RT: Employment. RE: Personnel. -> Presidential Adh: 039-0007. - & - 060-0013; -> Presidential Adh: -> planning: education & training: technician: engineers 103-0277.
- Manual training.** USE: Education & training.
- Manufacturing.** BT: Technology. NT: Manufacturing. NT: Product development. NT: Shipbuilding. RT: Production. -> gears 035-0109. -> engine: cylinders 060-0355; -> engineering: workshops 041-0059; -> springs & wires 069-0069; -> steel: plates: toughness: welding: ships 072-0157; -> oil engines: ships 075-0191; -> oil engine: starting: ships 076-0305; -> & design: marine: no: air: plant 078-0133; -> forging & casting: large: structures: quality: control 095-0061. -> CAD/CAM: computer: graphics 100-0087; -> underwater: ploughs 102-0035
- MAPS system.** USE: Charting
- Marine design.** USE: Design. USE: Ship design
- Marine engineering.** BN: Design, construction, & operation of: propulsive and auxiliary machinery. BT: Engineering. BT: Marine technology. BT: Ships. RT: Auxiliary machinery. RT: Engines. RT: Machinery. RT: Marine engineers. RT: Naval architecture. RT: Naval engineering. RT: Operations. RT: Propulsion machinery. RT: Pumping & piping. RT: Ship design. RT: Shipbuilding. RT: Transmission systems. -> 010-0260. -> research: 025-0069. -> NE: Engine: WW I: 035-0430. -> Perry 046-0443; -> Presidential Adh: 049-0017. -> propulogy: Laing Lect: 060-0025. -> machinery: vibration 065-0127. -> materials: ferrous: Laing Lect: 072-0027. -> research: diesel engines: nuclear powered ships: Laing Lect: 078-0017. -> stress: analysis: parsimony 078-0013; -> reliability: paper & insurance 078-0193. -> boiler & engine rooms: design & operation: turbo gear vs diesel engines 078-0243. -> naval: or: merchant: ships: Laing Lect: 082-0017. -> characteristics: to: indices: Laing Lect: 089-0045. -> systems: engineering 090-0017. -> history: Laing Lect: 000-0017; -> control: systems: reliability 090-0179; -> history: NE: Engine: conferences: NECIES 105-0059. -> history: 106-0062
- Marine engineers.** BT: Engineers. RT: Marine engineering. -> conferences: NECIES 067-0187.
- Marine engineers: education & training.** USE: Education & training
- Marine structures.** USE: Ports. USE: Ships. USE: Shipyards. USE: Offshore structures
- Marine technology.** BT: Engineering. NT: Marine engineering. NT: Naval architecture. NT: Naval engineering. NT: Offshore: engineering. NT: Ship design. NT: Shipbuilding. -> conferences: NECIES: Seascope 083-X000; -> oil: prices: Blackwater

SECTION 4: SUBJECT INDEX.

- Leet 103 910).
- Marine transport.** USE: Shipping. USE: Ships
- Marine subjects.** USE: <subjects> except for those listed above.
- Market forecasting: shipbuilding.** RT: Future trends RT: Marketing. NF: Estimating. - cargo ships: obsolescence: resistance & propulsion 052:0192; - cargo ships: ship design: openness: economies 066:0117; - tankers: long range: planning 085:0099; - 087:X001.
- Marketing: general.** BT: Management. NF: Exhibitions. NF: Market forecasting. RT: Forecasting. RT: Trade - competition: Presidential Adfr 077:0023
- Marketing: shipbuilding.** - selling 032:0033; - & future trends 083:0129; - Laing Lect 094:0067; - 097:X005. - merchant ships: ship design 098:0091, - 102:X002; - warships: Great Britain vs world 102:X004; - international competition 102:X006.
- Masts: ships.** RT: Ships. - stayed: heavy: derricks: wire ropes 056:0071; - blood: design 086:0115. - finite element structural analysis: mast-sets 105:0277
- Materials.** SM: Engineering materials. BT: Resources. NF: Carbon. NT: Ceramics. NT: Coal. NT: Coatings. NT: Concrete. NT: Decking materials. NT: Energy resources. NT: Fibre composite materials. NT: Fluids. NT: Forest products. NT: Gas. NT: Gases. NT: Glass. NT: Joinery. NT: Metals. NT: Minerals. NT: Oil. NE: Petroleum. NT: Plastics. NT: Polymers. NT: Rubber. RT: Cargo handling equipment. RT: Construction. RT: Fuel. RT: Engineering. RT: Structural design. RT: Structural strength. RT: Structures. RT: Testing. - structural strength: locomotives 015:0017; - science & engineering: future trends 043:0225; - structural strength 045:0042; - & steel: economic: trade: Great Britain vs foreign 047:0389; - testing: structural strength 053:0131; - rectangular structures: structural strength: radiography Laing Lect 055:0023. - Presidential Adfr 057:0077. - vibration: damping 058:0274; - deck & heat insulation: ships 059:0207; - vibration: damping: metals 060:0227; - research: design 065:0029; - non-destructive testing 066:0225; - non-metallic: outfitting: coatings: decks: warships: construction 076:0277 - oil engine shafting: rips 076:0305; - corrosion: algae 081:0281; - glass: ceramics: polymers: economics 091:0339; - composite & fibre composite 090:0151; - aluminium. CRP: concrete: cast: structural design: ships 092:0149; - shipbuilding: economics 094:X001; - engineering & shipbuilding: NECIES: company history 100:Y000
- Mathematics.** BT: Science. NT: Statistics. RT: Computation. RT: Data processing. - ship design: hull form 081:0093; - education & training: schools 105:0015.
- Mauritania (passenger ship).** USE: Passenger ships.
- MCM vessels.** SM: - Mine countermeasures vessels. USE: Warships
- Measured mile trials.** USE: Trials
- Measurements: units of & metrication.** USE: Standardisation
- Mechanical engineering.** BT: Engineering. RT: Mechanics. - power transmission: future trends 042:0111; - transmission systems: Laing Lect 057:0027. - 057:0175; - design: research: Laing Lect 079:0071.
- Mechanical power transmission.** USE: Transmission systems
- Mechanics.** BT: World. NT: Dynamics. NT: Fluid mechanics. NT: Friction. NT: Statics. NT: Waves. RT: Mechanical engineering. - internal ballistics: internal combustion engines: fuel: explosives 034:0357; - wave power: transmission: machinery: vibrator 039:0002
- Medium speed diesel engines.** USE: Diesel engines. RT: Medium speed ships.
- Medium speed merchant ships.** USE: Merchant ships. RT: Ships. RT: Speed. - steam turbines 025:0253.
- Meetings: NECIES.** SM: most are regular: held at Nels on venue not indexed, unless for former or former: org or held elsewhere. RT: NECIES. NT: Awards: NECIES. NT: Criteria: NECIES. NT: Lectures: NECIES. NT: specific see page RT: Harlepool. RT: Publications: NECIES. RT: Middlesbrough. RT: Southampton. RT: Sunderland - Note INA 003:0279; - Cardiff 012:0183; - Glasgow 026:0061; - Netherlands: shipyards 029:0543; - Note 030:0021. - Votatory WW I 033:0525; - London & Glasgow 040:0526. - Glasgow 042:0251. - Note 045:0503; - Netherlands 045:0289; - Jubilee 051:0539; - Note: INA: IESS 066:0193
- Members: NECIES.** USE: NECIES: Members.
- Members: NECIES.** USE: Obituaries: NECIES.
- Merchant Shipping Act.** USE: Regulations.
- Merchant ships.** BT: Ships. NT: Cargo ships. NT: Ferries. NT: Passenger cargo ships. NT: Passenger ships. NT: Service ships. NT: Standard ships. NT: Tramp ships. RT: Naval vessels. RT: Trade. - ship design: stability: load lines 002:0059; - steam recip engines: conversion: ships: Presidential adfr 004:0013. - ship design: machinery: weight: steam recip engines: economics 006:0252; - operations: economic: ship design 009:0275; - large: cellular: structural design 010:0219; - structural strength: engine room: bulkheads 020:0159; - shipbuilding: NE: England: history 026:0095; - gas engines: motor 028:0265; - economics: operations 035:0086. - geared steam turbines 036:0071; - economics 037:0152; - distence: bulge: anti-submarine: WW I 038:0157; - steam turbines: performance 039:0541; - performance: propellers 040:0254; - performance: trials: data analysis 043:0063; - hull form: powering: resistance 043:0047; - fuel: lighting 049:0052; - operation's: reduced speed: economies 051:0028; - under water construction: powering 053:0133; - hull form: sailing ships: wood vessels: history: Laing Lect 054:0033; - ship design: welding 055:0512; - operations: ship design: shipbuilding: shipbuilding: views 056:0107; - subdivision: decks: watertight: shell: deck vessels 059:0059. - shipbuilding: Great Britain: WW II: N America: Laing Lect 059:0061; - fast vs slow ships: economics: Presidential Adfr 059:0158; - welding: ship design & shipbuilding 060:0159; - bows: resistance & propulsion: model tests: WW II 064:0289; - resistance & propulsion: single screw: model tests 065:0017; - geared steam turbines 066:0212; - casualties: scrapping: evacuation 066:0154; - nuclear powered: propulsion: structural strength: Laing Lect 075:0027; - gear: design: manufacture 075:0129; - model tests: wind resistance 076:0229; - operations 080:0063. - ship design: shipbuilding: operators 080:0259; - economics: operations: Great Britain: Blackadder Lect 083:0111; - noise 085:0061; - & warships: shipbuilding: quality control 087:0019; - nuclear powered: future trends: Blackadder Lect 090:0117; - waste heat recovery: diesel & gas turbines 094:0057; - ship design: marketing 098:0091; - inland water ways vessels: Bangladesh 100:0153.
- Metacentric heights.** USE: Stability
- Metallurgy.** BT: Metals. NT: Photochemistry. RT: Rehabilitation. RT: Structural strength - steel: basic: shipbuilding: ships & warships 013:0097; - cold: corrosion: furnace: boilers: ship 024:0029; - fatigue: copper: steam pipes 025:0135; - Admiralty: particular: heat treatments: ships 030:0546; - steel: ship: scales: testing: vibration: long 031:0227; - steel: steam turbines 036:0521; - cast iron: diesel engines 042:0201. - fatigue: reliability & repair: ships 043:0800; - fatigue: steel: shafts: forging & casting 046:0221; - fatigue: forging & casting: steel 048:0121; - structural discontinuities: passenger ships 049:0221; - shipbuilding: marine engineering: Laing Lect 050:0025; - fatigue: internal combustion engines: design 053:0161; - cracking: boilers 055:0131; - steel: creep: high temperature 056:0153; - powder: castings 059:0139; - vibration: damping 060:0227; - structural strength: radiography 060:0299; - physics: Laing Lect 062:0025; - creep: steel: numerical: supercritical: tubes: ships 069:0027; - fatigue: internal stresses 070:0061. - high temperature: gas & steam turbines 070:0211; - brittle fracture 071:0277; - cleavage: steel: welded structures 073:0087; - brittle fracture: steel: warships: Laing Lect 072:0501. - cast iron: thermal & elastic properties: combustion chambers: diesel engines: ships 075:0283;

SECTION 4: SUBJECT INDEX.

- creep, cast iron diesel engines ships 075 0331; - fatigue: fretting aluminium 076 0183; - fatigue strength: shafting & welder repairs ships 077 0293; - - model tests 079 0185; - corrosion fatigue: materials 081 0281; - fracture mechanics 081 0077; - classification societies 107 0113.
- Metals.** RT: Materials. NT: Aluminium. NT: Chromium. NT: Copper. NT: Iron. NT: Metallurgy. NT: Metalworking. NT: Nickel. NT: Steel. - Admiralty gunmetal ships 030 0546; - ferrous: passenger ships 028 0229; - model metals: shipbuilding & engineering 045 0373; - ferrous: marine cast iron: Long Lee 072 0027; - 076 0095.
- Metalworking.** BT: Manufacturing. BT: Metals. NT: Forging & casting. NT: Machine tools. NT: Riveting. NT: Surface preparation. NT: Welding. RT: Lasers. - work heat treatments: carbon 029 0132; - steel 036 0355; - heat treatments: superheater tubes: steel: aluminium 010 0027; - plasma arc coatings 084 0041.
- Methane carriers.** SN = LNG carriers. USE: Liquefied gas carriers.
- Method studies.** USE: Management: time & motion studies.
- Metorion & metric system of units.** USE: Standardisation.
- MGB 2009 (gas turbine motor gun boat).** USE: Gas turbines. USE: Warships.
- Michell crankless engines.** BT: Crankless engines.
- Middlesbrough (port).** BT: North East England. BT: Ports. - ferrous: visits NF0155 017 0241; - meetings NACLES 075 0345; - - 038 0401; - - 039 0221.
- Mild steel.** USE: Steel.
- Military.** USE: Naval vessels. USE: Wars. USE: Weapons.
- Mine warfare vessels.** USE: Naval vessels.
- Mineral bearing (ore) carriers.** USE: Ore carriers.
- Minerals.** BT: Materials. RT: Construction materials. RT: Ore carriers. - quartz: production stamp mills 013 0227.
- Mines.** USE: Coal mining. USE: Warships: mine warfare vessels. USE: Weapons.
- Mining.** BT: Engineering. BT: Underground engineering. NT: Coal mining. RT: Drifters. RT: Resources.
- Mirrors, astronomical.** USE: Astronomy. BT: Optical instruments.
- Miss America X (high speed craft).** USE: High speed craft.
- Missiles.** USE: Weapons. BT: Armaments.
- Mitsubishi diesel engines.** USE: Diesel engines.
- Mitsui Pipe Shop System.** USE: Outfitting.
- Multis offshore drilling units.** USE: Offshore drilling rigs.
- Mudal basins.** USE: Model tests.
- Model tests: general.** BT: Testing. RT: Hull form. RT: Propulsion. RT: Research. RT: Resistance. RT: Ship design. RT: Simulation. RT: Trials. - engineering design 260 0129; - complex structures: structural analysis 079 0149; - engineer: rig design 063 0029.
- Model tests: propellers.** - performance 043 0174; - cavitation tunnels 029 0308; - data analysis 011 0179; - economics 043 0144; - cargo ships: propulsion 047 0317; - immersion: ballasting: reduced draft 048 0626; - - 050 0225; - cavitation: sterns: cavitation: propulsion: hull-propeller interaction 020 0249; - performance 054 0321; - wake: resistance: immersion 054 0349; - design: optimisation: hull loading 054 0281; - - Unladen standard series 056 0091; - scale effects 056 0315; - performance: drag 060 0279; - 062 0157; - propeller tunnel 063 0313; - blades: design: vibration 050 0273; - cavitation: warships 065 0189; - cavitation: 070 0121; - blades: design: cavitation 071 0153; - blade thickness: performance 073 0505; - cavitation: fatigue 079 0189; - existing: merchant ships: tankers & passenger ships 079 0295; - blades: performance 081 0233; - blades & bosses: performance 084 0149; - design 054 0199.
- Model tests: ships: general & structural.** - data analysis: standardisation 039 0221; - hull form: tank tests: economics 043 0141; - tank tests: ships 019 0081; - turrets: ship: beam screw 049 0077; - Arctic: trials: performance 050 0269; - wind tunnels: steam turbine Hales 058 0059; - launching: floating: harbours 063 0315; - superstructure: aluminium 065 0013; - slapping: ships 065 0151; - proto-type methods: X-verse: ship design 066 0051; - wake: scale effects 069 0245; - test: tank: boundary effects: ship-model: correlation 070 0019; - Rhine barge: ship model: correlation 070 0279; - towing tank: blockage & boundary effects 070 0059; - merchant ships: tankers: passenger ships: wind resistance: wind tunnels 076 0229; - ship-model: correlation: trials: test tanks 076 0305; - - 076 0105; - sixer ships: ship-model: correlation: Victory model 078 0418; - research: trials: review 080 0017; - structural strength: double bottoms 081 0175; - longitudinal strength: ships 085 0035; - vibration: ships 091 0015; - design: oil: high pressure test tanks 094 0009; - Great Britain: history: Parsons Lee 101 0019; - hydrodynamics 103 0085.
- Model tests: ships: performance.** - trials: data analysis: prediction & confidence 076 0001; - ship-model: correlation 076 0045; - - 076 0135; - weight distribution 079 0165.
- Model tests: ships: resistance.** - hull form: fins: plans: appendages 030 0041; - friction 045 0115; - & wake 046 0083; - ballast: bows: hull form 052 0065; - & propulsion: coasters 058 0081; - hull roughness 058 0215; - log: speed: draft: ship-model: correlation 060 0047; - powering 064 0211; - & propulsion: rotation: ships: WW II 064 0289; - & propulsion: merchant ships: resistance & propulsion: single screw 065 0067; - & propulsion: & ballast: bows: review 066 0295; - powering 068 0155; - ship-model: correlation 070 0029; - single screw: tankers: ship-model: correlation 070 0475; - & propulsion: tankers 072 0279; - & propulsion: fishing vessels 075 0355; - towing tank: blockage & boundary effects 076 0059; - & propulsion: standardisation 076 0011; - structural & pressure: Victory model 078 0415; - data analysis: ship design 079 0357; - structural: polymer: solutions 081 0201; - test tank: boundary wall effects: shallow water 085 0025; - wave-making 089 0023; - ship-model: correlation: boundary area 090 0051; - automation: oil: ships 096 0165.
- Modeling.** BT: Design. RT: Model tests. RT: Simulation. - yachting: modelling: ship design & ship production 087 0034.
- Modern.** USE: specific subjects: eg. Shipbuilding. RT: Future trends. RT: History.
- Modernising ships.** USE: Conversion.
- MOFFCO.** SN = Mobile offshore drilling units. USE: Offshore drilling rigs.
- Monarch diesel engines.** USE: Diesel engines.
- Monel metals.** USE: Metals.
- Money.** USE: Cost estimating. USE: Economics.
- Monitorias (corrugated sided ship).** USE: Hull form.
- Monitoring.** RT: Condition monitoring. NT: Surveying. RT: Performance.
- Monohull ships.** SN: Single hulled ships. USE: Ships. BT: Hulls. RT: Monohulled ships.
- Moorings: general.** BT: Cranes. RT: Anchor handling vessels. RT: Auxiliary equipment. RT: Buoys. RT: Ropes, wires, & cordage.
- Moorings: offshore structures.** - Hydropac: ice: burying: plate anchors 040 0039; - Kaimal: wave energy device: trials 090 0125; - minimum: fibre ropes 100 0183; - anchors 100 0381.
- Moorings: ships.** - anchors: stocks 104 0067; - chains 031 0151; - man-made: fibre ropes 100 0183.
- Motion control devices.** USE: Stabilising devices. RT: Motion.
- Motion studies by management.** USE: Management.
- Motions: ships.** BT: Dynamics. NT: Seakeeping. RT: Performance. RT: Stabilising devices. - rolling: warships: gut wave water 003 0105; - rolling: stability 01 0057; - rolling: rials & bilge keels 066 0023; - cargo ships: high speed 080 0277; - ballasting: reduced draft 090 0079; - rials: of: system 100 0115; - rolling: stability: inert: IMO: regulations 104 0081.

SECTION 4: SUBJECT INDEX.

Motive power. USE: Power generators. USE: Propulsion machinery.

Motor yachts. USE: Yachts.

Motorcars. RT: Road transport. RT: Car carriers. RT: Internal combustion engines. - petrol: internal combustion engines 021-0169; - corrosion: HVAC: car carriers: CIB to Austriabn 071 0237.

Motors, electric. USE: Electrical power generators.

Motorships. BT: Ships. RT: Diesel engines. RT: Internal combustion engines. RT: Oil engines. - economics operations 038.0549; - Iran: oil engines, Richardson-Westgarth performance 048 0039. - cargo ships: conversions: Silverpine & Schweilach 052/0215. - shallow draught coasters 054/0683; - San Francisco, structural strength: rough weather 034 0119; - Bergenford (passenger ship): aluminium superstructure 073.0113. - - 073.0273; - Ashbyton (sea-lift and bulk carrier) 103 0029.

Moulding. BT: Shipbuilding. - ships 036.0138.

Mulberry Harbour (floating harbour). USE: Concrete. USE: Piers.

Multiple expansion engines. USE: Steam reciprocating engines.

Multi-hulled ships. BT: Hulls. BT: Ships. NT: Catamaran vessels. NT: Semi-submersible vessels. NT: SWATH vessels. RT: Monohull ships. RT: Long-range conversions. - & catamarans: hydrodynamics 084.0125.

Munitions. USE: Weapons.

Museums. SN: of Newcastle, of science, industry, & engineering. BT: Organisations. RT: Education & training. RT: Exhibitions. RT: History. - 049 0236. - Sir C.A. Parsons 053 0053.

Names. BT: World. NT: Corporate names. NT: Personal names. NT: Structural names. RT: Subjects.

National organisations. BT: Organisations. NT: names of specific organisations in Corporate Name Index.

Nationalised industry. BT: Government. BT: Industry. - economics 034 0152; - coal mining: management 082/0143; - copycats: Great Britain: Laing Lect 103/0019.

Natsushima (research ship). USE: Research ships. USE: Support ships.

Natural gas. USE: Gas.

Naval architects. BT: Engineers. BT: Naval architecture. NT: RNA. - conferences: NECIES 067/0187. - consultants: Blackstar Ltd 097 0073.

Naval architects: education & training. USE: Education & training.

Naval architecture. SN: Ship design and construction. BT: Engineering. BT: Marine technology. NT: Naval architects. NT: Ship design. NT: Shipbuilding. RT: Marine engineering. - & modelers: aerodynamics: research 056/0083; - & carriers: vibration: ships 064.0235.

Naval engineering. BT: Marine technology. RT: Machinery. RT: Marine engineering. RT: Naval engineers. RT: Naval vessels. RT: Propulsion machinery. RT: Weapons. - President Adm 019 0013. - - 054/0018; - Laing Lect 082/0017.

Naval engineers. BT: Engineers. RT: Naval engineering.

Naval vessels. BT: Ships. NT: Warships. RT: High speed craft. RT: Merchant ships. RT: Naval engineering. RT: Submarines. RT: Weapons. - operations 034/0369; - naval bases 049/0525. - integral mid strength 051.0123. - ship design: history 051 0077; - floating docks: steel & reinforced concrete construction: WW II 063 0149; - Ponting docks: USN: Pacific: WW II: maintenance & repairing 067.0355. - fleet: replenishment tankers: refuelling at sea 068/0133; - machinery: maintenance 069/0267. - gas turbines 071/0257; - diesel engines: gas & steam turbines: nuclear propulsion machinery: Parsons Lect 073/0074; - structural: strength: plates 074.0021. - missiles: guided: radar 075 0070; - ship design: Laing Lect 077/0185; - propulsion: Laing Lect 081 0021. - replenish-

ment tankers: machinery: steam turbines 082 0059. - gas turbines: propulsion 087/0037. - performance: propulsion 102/0001.

Navier expression. USE: Structural analysis.

Navies. USE: Naval vessels. BT: Organisations.

Navigation: general. BT: Operations. NT: Compasses. NT: Radar. RT: Astronomy. RT: Collisions. RT: Manoeuvring. RT: Routing. - gyrocompasses: aircraft 084 0061.

Navigation: ships. - wireless direction finding: ships 044/0357; - automation: gyrocompasses 078.0027; - routing: safety: English Channel 089 0331; - automation: safety: Laing Lect 098/0016.

NDT. SN: Non destructive testing. USE: Testing.

NE England. USE: North East: England.

NEC 100 (conference). USE: Conferences: NECIES.

NECIES. SN: = North East Coast Institution of Engineers and Shipbuilders. 1884-1992. 1992 continues as North East Coast Engineering Trust (= NECET). UF: NECET. NT: Authors: NECIES. NT: Awards: NECIES. NT: Biographies: NECIES. NT: Meetings: NECIES. NT: NECIES <subheadings>. NT: Presidential Addr. NT: Publications: NECIES. NT: Secretary: NECIES. NT: Visits: NECIES. NT: <specific subjects e.g. Education & training. RT: NECIES [in Corporate Name Index]. - awards: NECIES: founders: retirement 047/0411; - history 077/0151; - centenary conference: propulsion: ships 100 0030. - centenary history: engineering & shipbuilding, engine ship design: research: materials: education & training: propulsion: propulsion machinery 100/0000; - history & future trends: professional societies: Laing Lect 105/0065.

NECIES constitution and bye-laws. SN: not indexed, but published annually in early Transactions, and also as separate publication.

NECIES Council. SN: not indexed, but published annually in Transactions. USE: NECIES. USE: Reports: NECIES.

NECIES Library. SN: not indexed, but additions to library stock are occasionally published in Transactions, as well as separate lists. RT: Education & training. RT: Publications: NECIES.

NECIES Members. SN: not indexed, but lists published in v. 1-23, and also as separate lists for other years. RT: members: names: in Corporate Name Index.

NECIES Officers. SN: not indexed, but listed annually in Transactions.

NECIES Proceedings. SN: not indexed, but published annually in Transactions.

Neptune oil engines. USE: Oil engines.

Netherlands (country). BT: Countries. BT: Europe. NT: Europort (port). NT: Rotterdam. - meetings: NECIES: shipyards 029/0049; - meetings: NECIES, summer 046/0489; - shipbuilding & shipyards 048/0187.

Network modelling. USE: Modelling.

Nevanta (tanker). USE: Tankers.

New innovations. BT: Design. - ship design: safety: Laing Lect 038 0083. - ship design: warships: Parsons Lect 093.0021. - ship design: requirements 094.0017. - research: ship design: Blackstar Lect 094/0236; - engineering: Presidential Addr 107 0001.

New Orleans (port). USE: Ports. USE: USA (country).

Newbiggin by the Sea (ports): measured mile. USE: Trials.

Newcastle upon Tyne (port). SN: most NECIES mtgs held here, so not indexed unless a special mtg. BT: Ports. BT: Tyne (river) & Tyneside (region). - freedom of awards: NECIES: C.A. Parsons 030 0580. - J. Sumner: Mig 045 0375; - maritime industry & science 015/0254. - J. Sumner: Mig 066 0193.

Newcombia (tanker). USE: Tankers.

Nickel. USE: Copper-nickel alloys: alloys.

Noise. BT: Dynamics. RT: Vibration. - insulation 038 0181; - gains 053 0264; - merchant ships 080 0063; - ship design 105 0177.

SECTION 4: SUBJECT INDEX.

Nominal indicated horsepower, USE: Powering.
Non-destructive testing, USE: Testing.
Non-ferrous materials, USE: Materials.
Non-metallic materials, USE: Materials.
North America, BT: Continents NT: Canada, NT: USA - ship building: WW II: Great Britain: merchant: ships 059-0067.
North Atlantic Ocean, USE: Atlantic Ocean.
North East Coast England, USE: North East England.
North East Coast Institution of Engineers and Shipbuilders, USE: NECIES.
North East England, SN: many ppts are concerned with the region, thus listed here only if term used in title, otherwise use cross-references given, especially RT: specific subjects. BT: Northern England, NT: Coast, NT: Hartlepool (port), NT: Middlesbrough (port), NT: Newbrough by the Sea (port), NT: Newcastle upon Tyne (port), NT: Sunderland (port), NT: Tees (river) & Teesside (region), NE: Tyne (river) & Teesside (region), NE: Wear (river) & Wearside (region), RT: specific subjects: e.g. Shipbuilding - shipbuilding, merchant ships history: 02840095; - history, steam ship engines: ships 020-0412; - shiprepairing: WW I 025-0259; - shipbuilding: shiprepairing: marine engineering: weapons: WW I 035-0479; - power stations 062-0225; - tug-boats: collisions 101-0165; - shipbuilding: history: conferences: NECIES 133-0071; - marine engineering: history: conferences: NECIES 105-0359; - engineering: future trends 119-0297.
North Sea, BT: Oceans & seas, RT: Great Britain.
North Sea: offshore engineering, USE: Offshore engineering, USE: Offshore structures, USE: Offshore vessels.
Northern England, BT: England, NT: Leeds (town), NT: North East England, NT: Sheffield (town) - Leeds: Tyne - Solway Firth 029-0381.
Northern Ireland, BT: Great Britain, - Geography: Queen's Island Ref: 087-0153.
Nozzles: fluid dynamics & mechanics, BT: Pumping & piping, RT: Appliances, RT: Propellers, RT: Steam machinery, RT: Turbines, - steam turbines 337-0249; - boiling water, steam machinery 053-0065; - steam generators 062-0057.
NT (index term), USE: Index term.
Nuclear power, BT: Energy resources, BT: Engineering, NT: Nuclear power generators, NT: Nuclear power stations, NT: Nuclear powered ships, NT: Nuclear weapons - research: engineering: Long Lead 071-0089.
Nuclear power generators, BT: Nuclear engineering, BT: Power generators, NT: Nuclear powered ships - safety 075-0022; - Presidential Auth 077-0023; - Passens: Lect 076-0051.
Nuclear power stations, BT: Nuclear power generators, BT: Power stations, - 077-0183; - 075-0125.
Nuclear powered ships, BT: Nuclear power generators, RT: Propulsion - even vessels: propulsion machinery: Passens: Lect 077-0037; - boilers: heat exchangers 074-0205; - merchant ships: propulsion: structural strength: Long Lead 075-0027; - submarine cargo: cargo ship design: performance 075-0161; - marine engineering: Long Lead 078-0017; - design & manufacture 073-0135; - submarines: design 085-0013; - merchant: future trends: Blackadder: Lect 090-0117.
Nuclear weapons, BT: Nuclear engineering, BT: Weapons - ship design: weapons 075-0021.
Numerically controlled machines, USE: Automation, USE: Machine tools.

Ocean Prince (semi-submersible vessel), USE: Semi-submersible vessels.
Ocean Vulcan (cargo ship), USE: Cargo ships.
Ocean waves, USE: Waves.
Oceanography, BT: Science, RT: Environment, RT: Oceans & seas - submersibles: design 085-0015.
Oceans & seas, BT: Geographic regions, NT: Atlantic Ocean, NT: English Channel, NT: North Sea, NT: Pacific Ocean, NT: Persian Gulf, NT: Suez, NT: Seawater, RT: Continents, RT: Island waterways, RT: Oceanography, RT: Offshore engineering, RT: Ships, RT: Water, RT: Waves.
Officers: naval engineers, USE: Naval engineers.
Officers: NECIES, USE: NECIES: Officers.
Offshore drilling platforms, SN: fixed units, RT: Offshore structures, - scraping: removed 104-0129.
Offshore drilling rigs, SN: mobile offshore drilling units & ships, BT: Offshore structures, RT: Offshore vessels, RT: Semi-submersible vessels - jack-up rigs: semi-submersible vessels, Adya Enterprise: Persian Gulf 070-0157; - Transocean No.2 (jack-up) shipbuilding 083-0093; - Aker 31-5 (semi-submersible vessel): shipbuilding -88: X003; - N Sea 050-X100; - structure 091-0143; - structural analysis 098-0011; - tension leg platform: ship design 100-0075.
Offshore engineering, SN: mostly ppts concerned with North Sea, BT: Engineering, RT: Marine technology, NT: Offshore drilling, NT: Offshore structures, NT: Offshore vessels, RT: Drilling, RT: Dredging, RT: Energy resources, RT: Oceans & seas, RT: Oil industry, RT: Oilfields, RT: Pipelaying, RT: Resources, RT: Suez, - resources: Blackadder: Lect 085-0013; - N Sea: oil & gas: future trends 089-0081; - conference: NECIES, Seascope: oil & gas: production: N Sea 090-X000; - - 090-X001; - - articles: N Sea: Ekofisk Field 090-X004; - - drilling 090-X005; - - economics: Great Britain: N Sea 090-X006; - - top of oil gas carriers: economics: operations 090-X007; - pipelines: gas: onshore 091-0129; - arciform, self-laying: e.g. pipe: Hydrofin 092-0029; - seabed: geology: surveying: submersibles 093-0081; - economics: research: Blackadder: Lect 096-0150; - 096-0213; - ploughs, underwater: manufacture 102-0035; - Arctic: ship design & operation: offshore vessels 101-0013; - oil prices: Blackadder: Lect 103-0101; - closed cycle diesel engines 106-0067.
Offshore service vessels, USE: Offshore vessels.
Offshore structures, BT: Offshore engineering, RT: Structures, NT: Buoys, NT: Offshore drilling platforms, NT: Offshore drilling rigs - maintenance & transport: submersibles, using 092-0092; - structural dynamics 093-0094; - mooring: analysis 105-0041; - fixed: classification 106-0107.
Offshore support vessels, USE: Offshore vessels.
Offshore vessels: ship design, BT: Offshore engineering, RT: Service vessels, - support, Uqale Jan (semi-submersible vessel): N Sea 094-0117 - 098-0109; - Arctic: icebreaking vessels 100-0013.
Oil: general, BT: Energy resources, BT: Fuel, BT: Materials, RT: Lubricants, RT: Offshore engineering, RT: Tankers - lubrication: machinery: performance 022-0061; - Presidential Auth 044-0019; - lubrication: boundary layers 044-0200; - transport: tankers 045-0051; - relief: long oil sea: naval vessels 058-0175; - sludge: recovery: tankers 074-0271; - lubrication: wet: separator: three block: ocean tankers: ships 081-0505; - economics: shipwreck: tankers: Blackadder: Lect 089-0095; - & other: fuels: history & future trends 096-0009; - price: shipbuilding & offshore engineering: Blackadder: Lect 104-0101; - project: project management: 107-0081.
Oil: fuel: combustion, RT: Oil engines - & transport: tankers 023-0027; - ships 013-0151; - boiler: furnaces 017-0041; - structural strength: boiler: furnaces 021-0255; - diesel: engines: combustion 017-0057; - 037-0209; - ex: coal, from: coal: ships 015-0211; - oil: from: water: tube: steam: turbine: boilers: design 070-0151; - boilers: Airs (tanker) 071-0405.

SECTION 4: SUBJECT INDEX.

Oil engines. BT: Internal combustion engines NT: Diesel engines RT: Fuel oils RT: Motorships RT: Petrol engines. - ships D10:0257; - Fullagar C30:0463; - fuel oils heavy 039:0352; - Fullagar ships 039:0267; - Duxford opposed piston: ships 039:0309; - Neptune ships 039:0315; - Scott Still ships 039:0318; - & auxiliary ships 059:0375; - Scott Still ships 040:0353; - Jurgis ships 040:0485; - high powered: ships 042:0325; - powering trials: ships 044:0285; - ships: fuel combustion 045:0185; - Richardson Westgarth: ships: trial performance 046:0029; - super-atmospheric: ships 048:0133; - heavy: fuel combustion 048:0155; - auxiliary: ships 050:0157; - heavy: history: ships 051:0481; - - Long Lee C52:0325; - crankshafts: structural strength: tribology: ships 055:0203; - 2-stroke heavy: aircraft propulsion 056:0171; - locomotives: future trends 058:0145; - Duxford opp-piston 2-cylinder: ships 060:0207; - fuel injection: ships 068:0174; - ships: Laing Lee 074:0041; - manufacturing: ships 075:0152; - Diesel: crankshaft: manufacture 076:0305

Oil platforms & rigs, offshore. USE: Offshore drilling.

Oil tankers. USE: Tankers.

Oil wells: offshore. USE: Offshore engineering.

Offshore. USE: Offshore engineering USE: Oil RT: Geographic regions

Oil-fired boilers. USE: Boilers USE: Fuel USE: Oil

Oil-water emulsions: fuel USE: Fuel oils, emulsified.

Onboard. USE: Shipboard.

Operations: general. BT: Ships RT: Structures NT: Diving NT: Dredging NT: Fishing NT: HVAC NT: Launching NT: Maintenance NT: Manoeuvring NT: Masting NT: Navigation NT: Performance NT: Pumping & piping NT: Racing NT: Repairing NT: Reasting NT: Salvage NT: Shipowning RT: Automation RT: Collisions RT: Commissioning RT: Economics RT: Management RT: Marine engineering RT: Safety RT: Reliability RT: Trials RT: Weather RT: specific ship types or structures e.g. Cargo ships boilers, high pressure power stations 061:0223; chemical industry risk analysis safety 093:0117.

Operations: economics: ships. - cargo ships: coal consumption: performance: ship design 009:0065; - cargo ships: hull form 029:0047; - merchant ship: economics 035:0036; - ship building 037:0152; - motorships 038:0349; - propulsion machinery 040:0321; - trampships 047:0541; - shipowners: trampships 051:0071; - merchant ships: reduced speed 051:0029; - tankers 051:0323; - cargo ships: shipowning 066:0117; - cargo handling equipment parts 075:0125; - merchant ships: Great Britain: Blackadder Lee 083:011; - shipowning: Blackadder Lee 086:0109; - merchant ships & ports 088:0145; - liquefied gas carriers 090:0307; - President's Add: 095:0009; - ship design 100:0147; - 102:0001; - shipowner vs builder vs insurer 102:0005; - credit backs: future trends 102:0005.

Operations: naval vessels. USE: Naval vessels

Operations: ships. - performance: steam reciprocating engines 045:0058; - merchant ships: shipowners views 056:0105; - container ships 059:0166; - tankers: oil sludge: necessary 074:0371; - merchant ships: shipowners' problems 075:0437; - & design: steam turbines 077:0225; - boiler & engine rooms: marine engineering 078:0245; - merchant ships 080:0035; - & ship design & shipbuilding 080:0239; - merchant ships: shipowners 083:0001; - shipboard computers 086:0004; - containerships: ship-see: Harwich-Zeebrugge 086:0057; - automation: shipowners' views 086:0141; - shipping: safety: tankers: English Channel 089:0131; - tankers: gas venting: safety 090:0165; - containership ports: transport networks 099:0071; - gears: reduction 100:0010; - tug barges: colliers: NE England 101:0105; - icebreaking vessels: Arctic: ship design 102:0013; - Ashington (sea assisted bulk carrier) 103:0029; - heavy oil: vessels: Laing Lee 103:0347; - container vessels 106:0039.

Opposed piston oil engines. USE: Diesel engines USE: Oil engines

Optical instruments. BT: Instruments NT: Lasers RT: Astronomy RT: Glass; - astronomical telescopes & others 057:0115.

Optical marking. BT: Lifting; - plates: production: shipbuilding 075:0247.

Optimization. RT: Design RT: Systems engineering; - propellers: design: model tests: hull fouling 054:0381; - propellers: design 072:0037; - hull form: Estang vessels 079:0095; - machinery layout: dry cargo ships 081:0071; - shiprepair & maintenance: economics 080:0009; - ship design: engineering economics: uncertainty 096:0077; - design: propellers: wake 100:0004; - cost estimating: steelwork: structural design: ships 104:0045.

Ore bulk oil carriers. USE: Combination carriers.

Ore carriers. SN: usually iron ore carriers BT: Dry bulk carriers RT: Combination carriers; - ship design 070:0005; - large Monro: Seaway vibration 086:0009

Ore oil carriers. USE: Combination carriers.

Ores. USE: Minerals.

Organisations. BT: World NT: Classification societies NT: Colleges NT: Companies NT: International organisations NT: Libraries & information services NT: Museums NT: National organisations NT: Navies NT: Polytechnics NT: Professors' institutions NT: Regencies NT: Schools NT: Trade unions NT: Universities NT: names of specific organisations: in Corporate Name Index & in Subject Index RT: Corporate names RT: Personnel.

Oriana (passenger ship). USE: Passenger ships.

Otriki (as merchant ship). USE: Merchant ships

Outfitting: ships. BT: Shipbuilding NT: Decks RT: Accommodation design RT: Joinery RT: Production; - Lifting: interior design: passenger ships 046:0393; - heat insulation & deck materials: ships 059:0204; - warships: small craft: non-metallic materials: coverage: decks 076:0267; - interior design: Oriana (passenger ship) 081:0125; - conferences: NECTES: Seaways 092:0000; - 092:0001; - paper: Japan: 092:0002; - systems: eng: hearing 092:0011; - diesel engines 092:0004; - cargo handling equipment: dry cargo ships 092:0005; - for shiprepairing 092:0016; - crane: history 103:0072

Oxy-acetylene welding. USE: Welding.

Pacific Ocean. BT: Oceans & seas; - naval vessels: repair & maintenance: floating docks: USA: WWII 067:0355.

Paddle ships. BT: Propulsion machinery BT: Ships; - machinery: Express (paddle tug): history 052:0089.

Paints. USE: Coatings.

Pallua Ship Factory Project. USE: Shipbuilding

Paper. BT: Forest products.

Paper calculating instruments. USE: Calculation instruments

Papers. NECTES SN: technical papers USE: Publications NECTES.

Parsons Lecture: number & year. SN: after Sir Charles Algernon Parsons BT: Lectures NECTES - 1: 06:053:0031; - 5: 10:05:0065; - 9: 14:061:0111; - 13: 18:065:0117; - 17: 12:069:0133; - 21: 16:073:0037; - 25: 10:077:0031; - 29: 14:081:0061; - 33: 18:085:0027; - 37: 12:089:0051; - 41: 16:093:0031; - 45: 10:097:0022; - 49: 14:101:0013; - 53: 18:105:0037.

Parsons Lecture: engineering. - Sir C A Parsons: biography 053:0031; - C J Giff: biography 070:0001; - astronomy: mirror: C A Parsons 085:0027.

Parsons Lecture: power & propulsion. - steam turbines: generators 053:0031; - Queen Mary & Queen Elizabeth (high powered passenger ships): steam turbines 057:0095; - steam turbine: shafting: design 061:0111; - gas turbines: Turbina & MGR 009 (high speed naval craft) Great Britain 065:011; - diesel engines: naval vessels: nuclear powered: gas & steam

SECTION 4: SUBJECT INDEX.

- turbines: ships 073:0037; - Canada: hydroelectric power stations: role of power stations: turbine generators: C D Gibbs: engineers: biography 077:0031; - generators: history 081:0069; - steam turbines, wet 089:0122; - energy: environment 105:0037.
- Pursons Lecture** ships & ship design, - naval vessels: ship design 093:0031; - model tests: Great Britain: history 11:0019.
- Passenger accommodation**, USE: Accommodation design. USE: Passenger ships.
- Passenger cargo ships**, BT: Merchant ships. RT: Cargo ships. RT: Passenger ships. - hull form: trials 075:0165.
- Passenger ships**, BT: Merchant ships. BT: Passengers. RT: Ferries. RT: Passenger cargo ships. RT: Koro ships -> accommodation 013:0239; - inland waterways vessels: London 022:0171. - ship design 040:0228; - high-powered electric propulsion machinery 042:0249; - fittings: interior design 049:0991; - ship design: history 051:0371; - structural design, welding: Mauritania: Ling Lee 056:0043; - high-powered steam turbines: Queen Elizabeth, Queen Mary 057:0095; - vibration: hulls & superstructures 064:0193. - situation: United States (see) ship design 068:0221; - superstructures: aluminium: Bergensfjord: diesel engines 072:0113; - diesel engines, superchargers: Bergensfjord 073:0273; - gear: design: manufacture 075:0139; - model tests: wind resistance 078:0739 -> performance 076:0295; - structural strength: girders: deck: HVAC 078:0291; - substructure 079:0042; - propellers: cavitation: model tests 079:0295; - fittings: interior design: Orana 081:0125.
- Passenger spaces**, USE: Accommodation.
- Passengers**, BT: Personnel. RT: Accommodation. RT: Cargo. RT: Passenger ships. -> emergency evacuation: ships 017:0072; - ship: boats: Antarctic: whaling vessels: crew: composition 053:0074.
- Patrol vessels**, USE: Warships.
- Pendulums**, RT: Instruments -> laws of motion: resistance 110:0106.
- Performance**: general. BT: Operations. NT: specific time limits: e.g. boilers, e.g. tanks. RT: Economics. RT: Marine: e.g. RT: Speed. RT: Trials.
- Performance: boilers**, USE: Boiler.
- Performance: machinery**, - boilers: water pumps 003:0773; - quad exp steam recip engine: 014:0227; -> machine axis: operating speeds 018:0021; - turbo: air: aids 020:0061; - steam recip engines: pistons 021:0023; - combination machinery: merchant ships, Orka (see) 026:0051; - machine axis 027:0267; - steam turbines: merchant ships 039:0331; - locomotives 039:0092; - steam reciprocating engines: operations: ships 043:0058; - stalling: ships 043:0261; - oil & diesel engines: linear: ships 046:0329; - steam recip engines: generally: ships: conference 048:0089; - single propulsion ships 059:0147; - steam turbines: Asia: cargo ship: N Atlantic 064:0333; - oil & diesel engines: hull engine: ship 103:0089.
- Performance: propellers**, - merchant ships 040:0254; - shafting: transmission 045:0261; - shaft bracket effects 054:0111; -> model tests & trials 054:0221; - rough water 064:0327; - strip theory 060:0259; - blades: design: cavitation: model tests 071:0123; - blade thickness: model tests 073:0405; - hull-propeller interactions, trials 076:5015; - blade: motor: axis 081:0223; -> model tests 081:0149; - coastal fluid dynamics: design 088:0091; - stalling: Ling Lee 095:0116.
- Performance: ships, general**, NT: Heaveing. RT: Balancing. RT: Fueling. RT: Powering. RT: Propulsion. RT: Resistance. -> trials 061:0021; -> resistance & propulsion 064:0157; -> propellers 067:0153; -> powering 069:0021; - steam: hull: engines: balancing: situation 019:0031; - resistance: hull form, corrugated sides: Monterey (see) 028:0059; - trials, measured: mile 039:0170; - steam turbines: gears, field 043:0155; - steam reciprocating engines: economics 045:0163; - Hull: Airframe: trials 050:0269; -> cargo: motorships: Silver pine & Silver ash: conversions 052:0215; -> propulsion: weather, rough 055:0055; - single screw: hull form: weather 057:0132; -> data analysis 067:0077; -> data analysis 073:0197; -> model tests: propulsion: data analysis: conference 076:0001; -> ship mode: correlation 076:0163; -> 076:5105; -> model tests: weight distribution 079:0165; -> trials: data analysis 084:0047; -> & resistance 089:0067; -> hull form: wind loads: manoeuvring 097:0125; -> maintenance: economics 103:0011; -> nonlinear: ship: design 100:0002.
- Performance: ships, cargo**, - hull form: coal consumption, economics 004:0065; - hull form: economics 029:0047; - coilers & pumps 042:0261; - structural strength: N Atlantic: hull: water: weather 046:0107; - fast or less fast: Presidential: hull 053:0168; - tankers: corrosion & fouling: paints, economics 069:0289; - tankers, ship-model correlation: single screw 070:0475; -> trials: Canada: N Atlantic 074:0115; - nuclear powered submarine 075:0061; -> fuel economy: tankers 076:0061; - cargo & passenger ships 076:0063; -> unknown: condition: monitoring 081:0159.
- Performance: ships, merchant**, -> ship design 089:0275; -> trials: data analysis 043:0063; -> reduced speed: economics 051:0025; -> passenger ships 076:5195.
- Performance: ships: naval vessels**, - propulsion 100:0001; - fisheries: protection vessels 102:0011.
- Performance: ships: small craft**, - fishing vessels: trials, sea-keeping 081:0037; -> 583:0011; -> yachts, sailing 086:0085; -> yachts, international 120: racing: class 097:0049.
- Persian Gulf (region)**, RT: Ocean & sea. - Arino Enterprise (offshore drilling rig) 076:0157.
- Personal Name Index** NECIES, USE: operators, names in Personal Name Index. RT: Index. NECIES. RT: Names. RT: Personal.
- Personal notes** NECIES, USE: Biographies. NECIES.
- Personnel**, BT: Annals. NT: Apprentices. NT: Autiors. NECIES. NT: Biographies. NECIES. NT: Cadets. NT: Casualties. NT: Children. NT: Craftsmen. NT: Crew. NT: Engineers. NT: Financiers. NT: Managers. NT: Naval engineers. NT: Passengers. NT: Seafarers. NT: Shipowners. NT: Students. NT: Technician engineers. NT: Women. NT: Yachts. RT: Education & training. RT: Employment. RT: Industrial relations. RT: Managers. RT: Organisations. RT: Personal Name Index.
- Peter G. Campbell** (Great Lakes tank-barges), USE: Barges. USE: Inland waterways vessels. USE: Tankers. USE: Weald ships.
- Petrol engines**, RT: Internal combustion engines. RT: Motors. RT: Oil engines. RT: Petroleum. RT: Small craft.
- Petroleum**, BT: Fuel. BT: Materials. RT: Oil. RT: Petrol engines -> fuel: molecules: internal combustion engines 021:0109; -> tankers: operation: economics 081:0025.
- Philosophy**, BT: Science: engineering 028:0127.
- Phoenix (welded tanker)**, USE: Tankers. USE: Welding.
- Phosphates**, RT: Chemicals -> corrosion: boilers: ship 076:0295.
- Phosphorus carriers**, USE: Chemical carriers.
- Photoelasticity**, BT: Metalurgy. RT: Structural strength, -> experimental methods: engineering design 065:0029; -> Xylonite: model tests: structural strength: ship design 066:0021; -> stress analysis: marine engineering 078:0033.
- Photoelectric cells**, USE: Electrical equipment & machinery.
- Photography**, BT: Instruments: cavitation: propellers: trials 100:0019.
- Pipelaying**, USE: Offshore engineering. USE: Pipes.
- Pipes**, BT: Cylinders. BT: Joining & fitting; -> steam: hot steel & copper: ships 007:0113; -> copper: steam: structural strength 075:0063; -> copper: steam: fatigue 025:0135; -> boiling water: steam: machinery: fluid dynamics 053:0065; -> gas: pipelines, high pressure: volume 091:0129; -> Japan: outlying ships 092:0002; -> pipelaying: offshore: plough: manufacturing 102:0035.

SECTION 4: SUBJECT INDEX.

Pistons. *USE*: Combustion chambers. *USE*: Diesel engines. *USE*: Internal combust. eng. *USE*: Steam reciprocating engines.

Pitch; propeller blades. *USE*: Propellers.

Pitching; ship motions. *USE*: Motions.

Plating craft. *BT*: High speed craft.

Planning. *USE*: Management.

Plans; drawings. *USE*: Drawing. Plans; lines plans. *USE*: Hull form.

Plant. *USE*: Machinery.

Plant layout. *USE*: Engine works. *USE*: Shipyards. *USE*: Shipbuilding.

Plasma arc. *BT*: Arcs. *RT*: Welding. -; metalworking; coatings 094:0041.

Plasticity. *USE*: Metallurgy. *USE*: Structural strength.

Plastics. *BT*: Materials. *RT*: Fibre composite materials. *RT*: Polymers. -; engineering 058:0109; -; Xylonite model test promotional methods: structural strength: ships 066:0031; -; coatings: hull fouling 082:0041.

Plates. *BT*: Structural members. *RT*: Stiffeners. -; riveting: shipbuilding 005:0073. -; steel: metallurgy: riveting: shipbuilding 031:0227; -; shipbuilding 036:0130; -; arc-welding: residual stress 058:0250; -; stiffeners: grillages: ships 061:0133; -; aluminium: structural strength 064:0223; -; structural design: ships 065:0059; -; stiffeners 066:0185; -; corrugated bulkheads: Stianfjell (tanker): structural design 066:0273; -; aluminium: riveting: structural analysis: ships 072:0083; -; steel manufacture for shipbuilding: foundries: welding 072:0157; -; structural strength: discontinuities 075:0029; -; structural strength: naval vessels 076:0021; -; optical marking: protection: affixation: shipbuilding 075:0247; -; surface preparation: coatings: quality control: shipbuilding 076:0277; -; aluminium: shipbuilding: structural design: fire prevention 080:0219. -; structural strength: ships 091:0083; -; structural strength 095:0155.

Plates; boilers. *USE*: Boilers.

Platforms; oil & gas drilling. *USE*: Offshore drilling platforms.

Pressure craft. *USE*: Aquat craft. *USE*: Yachts.

Ploughs, underwater: pipelaying. *RT*: Pipelaying. - manufacture 102:0035.

Plywoods. *USE*: Forest products.

Pneumatic equipment: shipbuilding. *BT*: Machinery. *RT*: Riveting. -; riveting: drive: chipping: hammers 022:0015. -; riveting & other 042:0040.

PNI (index term). *SN*. = Personal Name Index. *USE*: Personal Name Index.

Polar diesel engine. *USE*: Diesel engines.

Policy making. *USE*: Government.

Politics. *USE*: Government.

Pollution. *BT*: World. *NT*: Smoke. *RT*: Environment. *RT*: Waste disposal. -; fuel: coal: combustion: ships 089:0043.

Polymers. *BT*: Materials. *RT*: Plastics. - solutions: model tests: ships 081:0261. -; materials 081:0269.

Polytechnic. *USE*: Education & training. *BT*: Organisations.

Postfield (tanker). *USE*: Tankers.

Pontoon docks. *USE*: Docks: floating.

Port of Tyne. *USE*: Ports. *USE*: Tyne (river) & Tyne-shire (region).

Ports. *BT*: Towns. *NT*: Docks. *NT*: Terminals. *NT*: Coal B. *NT*: Europe. *NT*: Glasgow. *NT*: Harbours. *NT*: London. *NT*: Middlesbrough. *NT*: Newbiggin by the Sea. *NT*: Newcastle upon Tyne. *NT*: South Shields. *NT*: Sunderland. *RT*: Cargo handling equipment. - San Francisco pier: launching: S. Dakota (tugboat) 021:0077; -; naval bases 043:0528; -; cargo handling equipment: industrial relations 043:0175; -; Mulberry (concrete floating harbour): launching: model tests & trials 065:0045. - & ships: cargo handling: operators: operators 075:0125; -; 083:0069; -; containerships: Harwich Zeebrugge 086:0221. - views: operations: economics: ships 088:0145; -; industrial relations: Tyne-shire 092:0077. -; coal terminals: Port of Tyne 102:0087; -; fishing: vessels: shipbuilding: Tyne-shire 106:0081; -; Harbours: history 107:0089; -; history 107:0107.

Positioning; ships. *USE*: Dynamic positioning.

Powder metallurgy. *USE*: Coatings. *USE*: Metallurgy.

Powdered coal. *USE*: Coal.

Power generators. *BT*: Machines. *NT*: Engines. *NT*: Fuel cells. *NT*: Nuclear power. *NT*: Power stations. *NT*: Steam generators. *NT*: Waste heat conversion. *NT*: Waterpower. *NT*: Wave energy devices. *NT*: Wave motors. *RT*: Energy resources. *RT*: Fuel. *RT*: Transmission systems. -; transmission: future trends 042:0131; -; future trends 072:0573; -; submarines: design 075:0073.

Power stations. *SN*: electric power stations. *BT*: Power generators. -; condensers: boilers 012:0021; -; auxiliary machinery 028:0175. -; hydroelectric: Canada 034:0365. -; 036:0496. - & ship propulsion machinery 050:0137. -; NE. Eng. and 051:0501. -; condensers & cooling water systems: design: economics 057:0221; -; boilers: high pressure: operators 061:0223. -; NE. England 062:0225. -; 066:0407; -; nuclear 103:0225. -; Sargold: waste heat recovery 096:0229; -; steam turbines & future trends: Parsons Lect. 097:0022; -; hydroelectric 097:0085.

Powering; ships. *BT*: Engines. *NT*: Propulsion. *NT*: Resistance. *RT*: Performance. *RT*: Testbed motor. - steam recip engines. Reviews: NECLES 004:0335. -; steam recip engines 006:0175; -; performance 010:0021. -; balancing: steam recip engines 019:0151; -; turbine motors: steam turbines 024:0251; -; trials: steamships 023:0243; -; merchant ships: hull form resistance 044:0047; -; oil engines: trials 044:0285. -; effective horsepower 049:0171. -; wake resistance: single screw ships 052:0179. -; merchant ships: boiler water consumption 053:0133; -; resistance: model tests 064:0221; - & resistance: model tests: review 066:0295; -; model tests 068:0155; -; resistance & propulsion: listing vessels 075:0355; -; trials: performance: hull-propeller interaction 076:5025.

Preservation. *USE*: Corrosion.

Presidential Addr: year. *SN*: by NECLES Precedent. Usually: local engineering: shipbuilding, education & training, topical subjects, often only a brief overview. *RT*: Lectures: NECLES.

- 1884 001:0002; - 1885 002:0007; - 1886 003:0009; - 1887 004:0013; - 1888 005:0013; - 1890 007:0017; - 1892 009:0011; - 1893 010:0014; - 1894 011:0012; - 1896 013:0013; - 1898 015:0013; - 1899 016:0013; - 1900 017:0017; - 1901 018:0017; - 1902 019:0017; - 1903 020:0015; - 1904 021:0013; - 1905 022:0013; - 1906 023:0013; - 1907 024:0021; - 1908 025:0025; - 1909 026:0033; - 1910 027:0017; - 1911 028:0035; - 1912 029:0025; - 1913 030:0025; - 1914 031:0002; - 1915 032:0005; - 1917 034:0007; - 1919 036:0005; - 1920 037:0024; - 1921 038:0025; - 1922 039:0007; - 1923 040:0020; - 1924 041:0020; - 1925 042:0023; - 1926 043:0019; - 1928 045:0017; - 1929 046:0015; - 1930 047:0021; - 1931 048:0019; - 1932 049:0017; - 1933 050:0017; - 1934 051:0017; - 1935 052:0019; - 1936 053:0019; - 1937 054:0018; - 1938 055:0018; - 1939 056:0020; - 1940 057:0019; - 1941 058:0019; - 1942 059:0015; - 1943 060:0017; - 1944 061:0015; - 1945 062:0019; - 1946 063:0017; - 1947 064:0017; - 1948 065:0023; - 1949 066:0023; - 1950 067:0019; - 1952 069:0021; - 1954 071:0017; - 1955 073:0021; - 1958 075:0021; - 1960 077:0025; - 1962 079:0015; - 1964 081:0015; - 1966 083:0019; - 1968 085:0009; - 1970 087:0019; - 1972 089:0009; - 1974 091:0009; - 1976 093:0009; - 1978 095:0009; - 1980 097:0001; - 1982 099:0001; - 1984 101:0001; - 1986 103:0001; - 1988 105:0001; - 1990 107:0001.

Presidential Addr: economics. - depression 003:0009. - 035:0023; - 038:0025; -; depression 042:0023. - 060:0017; -; planning 066:0027.

SECTION 4: SUBJECT INDEX.

- Presidential Addr: education & training.** - 057-0003; - 065-0013; - 079-0013; - 023-0013; - naval engineers 023-0013; - naval engineers 024-0021; - 025-0025; - 032-0005; - 034-0007; - 036-0008; - 037-0029; - 039-0007; - 041-0019; - 048-0019; - 053-0019; - 056-0020; - 061-0019; - 063-0017; - 064-0017; - 065-0022; - marpower 069-0021; 071-0017; - 071-0009; - 073-0009; - engineers 099-0001; - history & future: new innovators 103-0001
- Presidential Addr: engineering.** - 001-0001; - 002-0017; - 015-0015; - 017-0017; - 019-0015; - 021-0013; - history 013-0015; - aircraft: locomotives 027-0017; - Suez & Panama canals 029-0017; - 051-0017; - 057-0017; - 059-0015; - 065-0023; - industry: foreign competition 077-0023; - 093-0009; - history & future 101-0001; - 103-0001
- Presidential Addr: general.** - employment 036-0005; - marpower 029-0007; - Tyne (river) 055-0018; - marpower 106-0017
- Presidential Addr: industrial relations.** 015-0013; - 038-0025; - 041-0019; - 094-0001
- Presidential Addr: management.** - 025-0025; - 039-0007; - 057-0017; - 105-0007
- Presidential Addr: materials.** - steel 012-0007; - waste 041-0020; - aluminium 057-0017; - welding 057-0001
- Presidential Addr: naval.** - engineering 019-0013; - engineers: education & training 034-0021; - workshops 027-0017; - workshops 028-0018; - engineering 054-0018
- Presidential Addr: power & propulsion.** - conversions: steam recip engines: ships 104-0013; - internal combustion engines 027-0007; - machinery: ships 029-0025; - internal combustion engines: superchargers & gears 030-0025; - engines 027-0029; - fuel: 041-0019; - coal & oil fuel 040-0019; - steam recip engines, triple exp: ships 040-0019; - marine engineering 049-0017; - warlike: boilers: oil fuel: propulsion: machinery: ships 054-0018; - gas turbines 064-0015; - steam generators: nuclear power 077-0002
- Presidential Addr: production.** - 002-0017; - WW I 022-0025; - industry 055-0003; - 075-0005
- Presidential Addr: research.** - 034-0007; - 048-0015; - 052-0019; - 060-0017; - 061-0019; - 062-0019; - 064-0017; - 057-0019; - 091-0001; - 093-0009
- Presidential Addr: shipbuilding.** - 001-0003; - steam recip engines 007-0009; - 065-0013; - generators 011-0013; - 013-0013; - 017-0017; - 019-0013; - 025-0025; - 027-0017; - 028-0018; - 035-0005; - 038-0025; - 042-0027; - shiprepairing 048-0019; - 047-0017; - 048-0019; - scrap & built 052-0019; - 055-0018; - 058-0019; - 059-0015; - WW II 060-0017; - 062-0019; - 063-0017; - 064-0017; - 072-0021; - education & training 075-0021; - 079-0015; - 081-0009; - 085-0009; - 087-0009; - 091-0009; - history & future 103-0001; - government subsidies 103-0001
- Presidential Addr: shipowning.** 055-0018; 081-0015
- Presidential Addr: shipping.** - 051-0017; - WW I 006-0027; - 058-0019; - WW II 060-0017; - 071-0017; - 064-0018
- Presidential Addr: ships & ship design.** - structural strength: steel 002-0007; - 009-0011; - 025-0025; - hydrographic vessels 024-0017; - stability devices 029-0025; - 034-0007; - merchant ships: fast & slow: experiments 059-0018; - 067-0019; - 087-0009; - economics: operations 093-0009; - classification societies 097-0001
- Presidential Addr: trade.** - 044-0019; - ships: scrap & built 052-0019; - 055-0018; - 060-0017
- Presidential Addr: wars.** - WW I 031-0002; - WW II: shipping 060-0021
- Pressure.** USE: Structural loads
- Pressure resistance: ships.** BT: Resistance; - model tests: Victory model 028-0445
- Press, maritime.** USE: Communication
- Prevention.** USE: Safety; - USE: special subjects e.g. Corrosion
- Private class (cargo ships).** USE: Cargo ships
- Prices.** USE: Economics; USE: Estimating
- Prizes.** NECIES; USE: Awards NECIES
- Proceedings.** NECIES; USE: NECIES Proceedings
- Process control: ship production.** USE: Ship production
- Producer gas & gas engines.** USE: Gas; USE: Gas engines
- Product development.** BT: Design; RT: Manufacturing; - ship production: Germany 104-0007
- Production.** BT: Construction; NT: Ship production; RT: Industry; RT: Manufacturing; RT: Productivity; RT: Quality assurance; RT: Reliability; RT: Trends; - Presidential Addr 007-0007; - 032-0005; - 033-0003; - 036-0005; - engineering works 057-0119; - & engineering standardisation WWI: 059-0113; - design for steam recip engines 060-0103; - computer aided: job-shops 086-0013; - engineering: management 086-0067; - engineering: conferences: NECIES 085-0147; - engineering: management 087-0002; - computers: work control 088-0006; - computer aided: make-to-order products 106-0045
- Production: oil & gas drilling platforms, using.** USE: Offshore drilling; USE: Offshore operations
- Productivity: shipbuilding.** RT: Production; - & future trends 083-0129; - management: Barkeley 085-0043; - 100-0113; - Japan 108-0127
- Professional activities.** NT: Ethics; NT: Liability; NT: Meetings; NT: Professional institutions
- Professional institutions.** RT: Organisations; JT: Professional societies; NT: NECIES; NT: RINA [in Corporate Name Index]; - naval: history 000-0035; - education & training: technical: engineers 107-0097; - history & future: Presidential Addr 101-0001; - NECIES: history & future trends 101-0145; - education & training: testimony: ships 104-0119; - NECIES & others: history & future trends: education & training: Long Lee: 108-0095
- Progress.** USE: specific subjects e.g. Workshops; RT: History
- Project planning.** USE: Management
- Propellants.** USE: Fuel; USE: Weapons
- Propeller tunnels.** USE: Model tests; USE: Propellers
- Propellers: general.** BT: Propellers; NT: Thrusters; RT: Ballasting; secured craft; RT: Cavitation; RT: Manufacturing devices; RT: Precision machinery; RT: Shuttering; RT: Stern gear; - model tests: performance 003-0179; - design: performance 007-0079; - design: law of similarity 012-0031; - design 040-0039; - model tests: data analysis 040-0439; - war: manufacturing 042-0175; - economics: model tests 043-0144; - performance: shuttering: transmission 045-0261; - immersion: testing: reduced draft: model tests 048-0026; - 050-0025; - conferences: NECIES 054-0249; - hull: interaction: 054-0249; - wakes 054-0251; - aerofoils 054-0289; - blades: vibration 054-0301; - performance: shaft bracket effects 054-0311; - performance: model test trials 054-0321; - performance: rough waters 054-0327; - immersion: resistance: wake: model tests 054-0349; - fishing vessels & tugs: towing 054-0365; - cargo systems: fire: hull: fueling: model tests 054-0383; - aerodynamic: resistance 056-0083; - 3-bladed: standard series: model tests & trials 056-0091; - model tests: scale effects 056-0115; - cavitation: push 056-0225; - power 058-0161; - blades: cascades: design 060-0059; - performance: ship: theory 060-0266; - model tests: drag: performance 051-0279; - 4-bladed: design: single screw: cargo ships 051-0321; - model tests 052-0157; - propeller tunnels: model tests 053-0233; - 2- & 3-bladed: standard B-series: trials 057-0088; - & shattering: structural strength 067-0089; - cavitation: photography: trials 068-0109; - & propulsion 068-0137; - design: optimisation 072-0027; - blade: thickness: model tests: performance 073-0415; - trials: performance: hull interaction 076-0025; - aerodynamic: aerobics: design 081-0101; - blades: model tests: performance 081-0219; - 084-0049; - manufacturing: designs 088-0031; - blades: performance: hull: dry: trials & design 088-0091; - design: cavitation: pressure dis

SECTION 4: SUBJECT INDEX.

- Turbines** (91:005). -; ducted vs conventional: economics 093:005; -; design: model tests 094:019; -; shafting: design & performance: *Lang Lect* 095:0019; -; maintenance: economics 100:0011; -; design optimisation: wake 100:0004; -; hull interactions 100:0005; -; structural analysis: finite elements 105:0127
- Propellers: cavitation: model tests.** -; cavitation tunnels 029:0200; -; warships & trials 065:0339; -; 070:0121; -; blades: design 071:0123.
- Propellers: merchant ships.** -; performance 040:0254; -; cargo ships: model tests: propulsion 047:0217; -; coasters: critical speeds: model tests: hull-propeller interaction 050:0249; -; coasters: resistance & propulsion: model tests 050:0081; -; passenger ships & tankers: cavitation: model tests 079:0295; -; concretating: high speed cargo ships: design 083:0075; -; tankers: large 083:0004.
- Propellers: shafts.** BT: Shafting. -; & stern gear design: shipbuilding 058:0259; -; forging & casting: reliability 015:0149; -; reliability 015:0161; -; shafts: corrosion 017:0217; performance 045:0253; -; fatigue: reliability: forging & casting 046:0221; -; performance: torque 059:0147; -; reliability: structural strength 055:0203; -; 067:0389; -; casters 070:0343; -; reliability: castalities 076:0295; -; model tests in air: fatigue: tankers 079:0183
- Propellers: vibration.** BT: Vibration. -; singing 003:0189; -; blades: US:0043; -; blades: trials: model tests: singing 062:0249; -; blades: model tests 065:0275; -; singing 065:0301; -; 071:0291; -; entrained water effects 078:0125; -; hull form: all-cast: resistance 055:0193.
- Properties of materials.** USE: Materials. USE: Structural strength.
- Propulsion: ships.** BT: Powering. BT: Ships. NT: Auxiliary propulsion. NT: Electric propulsion. NT: Electromagnetic propulsion. NT: Human powered vessels. NT: Nuclear powered ships. NT: Padle ships. NT: Propulsion machinery. NT: Sailing vessels. NT: Steam propulsion. NT: Swimming [fish]. NT: Turboelectric propulsion. RT: Performance. RT: Resistance. RT: Wake. -; trials: measured mile 039:0470; -; 042:0051; -; model tests: economics: ship design 043:0144; -; cargo ships: model tests: propellers 047:0317; -; propeller immersion: ballasting: model tests 048:0026; -; coasters: cruiser sterns: model tests: hull-propeller interaction 050:0249; -; performance: weather: rough 053:0055; -; manoeuvring: trials: *Boston Globe* (merchant ship) 055:0177; -; scale effects: model tests 058:0115; -; history 063:0183; -; merchant: resistance: model tests: WW II 064:0289; -; & resistance: merchant ships: single screw: model tests 065:0047; -; & resistance: model tests: review 066:0265; -; & propellers 108:0104; -; & resistance: rowlers 075:0359; -; & resistance: model tests: standardisation 076:0311; -; & resistance: reduced draught: single screw 080:0185; -; high speed cargo: ship design 082:0277; -; animals: aquatic: *Blackadder Lect* 093:0127; -; history: NECIES centenary conference 100:0000; -; naval vessels: performance 100:0001; -; history: NECIES centenary 100:0000
- Propulsion machinery: general.** SN: engines and shafting. BT: Engines. RT: Machinery. BT: Power generators. RT: Propulsion. NT: Combined cycles. NT: Reheat propulsion machinery. RT: Diesel engines. RT: Engines. RT: Gas turbines. RT: Manoeuvring devices. RT: Marine engineering. RT: Naval engineering. RT: Propellers. RT: Steam reciprocating engines. RT: Steam turbines. -; electric motor power: ships & other vehicles 043:0347; -; aircraft: 2-strokes: heavy and engines 056:0171; -; gas turbines: jet engines: aircraft 062:0145; -; superconductors: future trends 135:0075.
- Propulsion machinery: cargo ships.** -; triple vs steam recip engines vs geared steam turbines 029:0220; -; economics: ship design 049:0235; -; conversions: merchantships: *Silowicz & Silowicz*: performance 052:0215; -; steam recip engines: tanks 061:0263; -; reheat: steam cycles: steam turbines: *Beaver* 063:0071.
- Propulsion machinery: naval vessels.** -; diesel engines: gas & steam turbines: nuclear powered: *Parsons Lect* 073:0037; -; *Lang Lect* 081:0021; -; gas turbines 087:0037.
- Propulsion machinery: ships.** -; electric 009:0249; -; internal combustion engines 027:0233; -; comparison of types: diesel & geared steam: testbed & surface gas & steam recip engines 028:0249; -; *Presidential Addr* 029:0025; -; diesel engines 030:0033; -; temperature: thermocouples 036:0216; -; operations: economics 040:0321; -; steam recip engines vs diesel: cost vs oil 040:0317; -; conversions: steam recip vs diesel engines 041:0315; -; comparison with power stations 050:0237; -; steam vs diesel engines: economics: maintenance & operations 051:0229; -; *Presidential Addr* 054:0018; -; electric propulsion: history: *Vandal: Wuppertal* 055:0068; -; performance: torque 059:0147; -; Asia (cargo ships): steam turbines: performance: *N Atlantic Ocean* 064:0332; -; steam-gas power plants: diesel engines & gas turbines 066:0081; -; geared steam turbines 066:0315; -; tankers: & auxiliary machinery: *Lang Lect* 076:0021; -; medium speed diesel engines 083:0005; -; diesel engines 083:0101; -; medium speed diesel engines 083:0029; -; superconducting dc motors 082:0111; -; oil-trop: hull form: all-cast: resistance 095:0197; -; techno-economics: future trends 097:0151; -; diesel engines 098:0137; -; diesel engines: history & future trends 100:0003; -; gas & steam turbines: combined cycles 100:0011; -; history: NECIES centenary 100:0000; -; history: NE Englund: conferences: NECIES 105:0069
- Propulsive devices.** USE: Propulsion. USE: Propulsion machinery.
- Protection.** USE: Coatings. USE: Corrosion.
- Psychology.** RT: Science. -; management: shipbuilding: industry 045:0205
- Publications.** BT: Communication. NT: Statistical sources. RT: Drawing. RT: Regulations.
- Publications: NECIES.** SN: *see Transactions*, technical pprs, books, etc. RT: NECIES. NT: Bibliographies. NT: Biographies. NECIES. NT: Conferences. NECIES. NT: Index. NECIES. NT: Reports. NECIES. NT: establishments e.g. Propulsion. RT: Abstracts. NECIES. RT: Meetings. NECIES. RT: NECIES Library. -; *Transactions*. NECIES annual v. 1 - v. 128. 001:0000 - 108:0000. -; NECIES centenary: history: engineering: shipbuilding: education & training: engines: research: materials: ship design: propulsion: propulsion machinery 100:0000
- Pulkova refractor (telescope).** USE: Astronomy.
- Pumping & piping.** BT: Generators. NT: Nozzles. NT: Pipes. NT: Pumps. RT: Cargo handling equipment. RT: Fuel. RT: Machinery. RT: Materials. RT: Marine engineering.
- Pumps.** BT: Pumping & piping. NT: Auxiliary machinery. RT: Cargo handling equipment. -; air 005:0217; -; ships 008:0035; -; centrifugal 044:0043; -; firefighting: ships 039:0033; -; electric: ships & graving docks 027:0129; -; vacuum: condensers: ships: reports: NECIES 034:0085; -; safety: education & training 055:0055
-
- QA.** USE: Quality assurance
- Quadruple expansion steam recip engines.** USE: Steam reciprocating engines. RT: Compound engines.
- Qualifications.** USE: Education & training
- Quality assurance.** SN: -; QA. BT: Management. RT: Accuracy control. RT: Production. RT: Reliability. RT: Standardisation. -; shipbuilding: surface preparation: plates 038:0277; -; shipbuilding: merchant & naval ships 087:0079; -; forging & casting: large: *Amcoars* 096:0061; -; statistical process control: ship production: 105:0111; -; shipbuilding: Japan: productivity 106:0127
- Quartz.** USE: Minerals
- Queen Elizabeth & Queen Mary.** USE: Passenger ships

SECTION 4: SUBJECT INDEX.

Queen's Island Belfast. USE: Northern Ireland.

Racing: general. BT: Operators. RT: High speed craft - yachts USE: Yachts

Radar. BT: Electronic equipment & machinery. BT: Navigation. - guided missiles. naval vessels 076-0079

Radar. USE: Telecommunications.

Radiography. BT: Testing. RT: Welding. - science & engineering: future trends 042-0225. - material molecular structure: Laing Lect 055-0025. - metallurgy: structural strength 060-0299. - engineering 060-0327. - welding 060-0310. - 060-0314. - 076-0095

Radius of gyration: ship motions. USE: Motions: ships.

Railcar carriage ship design. BT: Cargo ships. RT: Train ferries. - inland waterways vessels. (yhs 000-0209. - Seairain (ss): USA New Orleans - Havana 016-0179

Railways. BT: Structures. RT: Transport. NT: Locomotives (railway engines). RT: Train ferries. - electric 038-0173. - concrete 045-0147. - railcar carriage: Seairain (ss): ship design 060-0179. - underground: Iron: Tyne & Wear Metro 096-0085. - underground London management 102-0071.

Ramps. USE: Cargo handling equipment. - no specific pp

Rapid transit systems. USE: Railways.

Ratone steam turbines. USE: Steam turbines.

Reaction turbine blades. USE: Turbines.

Reconditioning: ships & machinery. BT: Repairing. - steam recip engines 048-0254. - 019-0081.

Reduced draught. USE: Draught

Reduced speed rubbing: ships. USE: Operations: concrete: ships.

Reduction gears. USE: Gears.

Reengining: ships. USE: Conversions. USE: Engines

Refitting: ships. USE: Conversions. USE: Maintenance. USE: Shiprepairing

Refractories. USE: Boiler furnaces. USE: Gas turbines

Refrigeration. BT: Cargo. BT: Machinery. RT: HVAC. RT: Liquefied gases. - machinery: carbon dioxide & others: ships 061-0205.

Registries. RT: Organisation. - shipping: Great Britain: government. future trends 097-0002

Regulations. RT: Government. NT: Classification. NT: Contracts. NT: IMO. RT: Liability. NT: Livery rules. RT: Load lines. NT: LR. RT: Insurance. RT: Publications. RT: Safety. tonnage measurement: ships 028-0105. - education & training: marine engineers 021-0142. - ships: reports: NECHES. RCOT 021-0724. - 022-0205. - 024-0015. - 024-0367. - 025-0011. - 026-0365. - 029-0294. - 028-0305. - 029-0357. - 030-0601. - merchant ships: Act of Parliament 041-0287. - safety: history: ships 045-0225. - ships: collision: structural design 071-0547. - hull: structural design: classification 064-0179. - management 076-0149. - mechanical engineering: design & research: Laing Lect 078-0021. - insurance relations 084-0006. - shipping: UNCTAD: government 097-0001. - surveying: ship design: future trends 095-0087. - insurance: stability: IMO 104-0091. - classification rules: offshore structures 105-0117. - marine: IMO: future trends: Blackadder Lect 117-0075

Reheat propulsion machinery: ships. BT: Ships: steam machinery. - Beaver (Turk) electric cargo ship 063-0071. - steam turbines 053-0197.

Reinforced concrete ships. USE: Concrete ship

Reliability. BT: Engineering. RT: Inspector. RT: Maintenance. RT: Metallurgy. RT: Operations. RT: Production. RT: Quality assurance. RT: Remotely. RT: Risk analysis. RT: Safety. RT: Standardisation. RT: Structural strength. RT: Surveying. RT: Testing. - propeller shafts: structural strength: forging & casting 015-0049. - 015-0101. - steel: ship plates: routing: shipbuilding 031-0221. - steam turbines 035-0411. - engine: cylinder castings: manufacturing 040-0355. - & repairing:

ships 045-0400. - steel: shafts: forging & casting 036-0221. - rollers: vibration: manufacturing 068-0313. - diesel engine: pistons & cylinders: ships 071-0163. - repairing: machinery: ships 073-0369. - propeller shafts: castings 076-0285. - machinery: ships 078-0193. - control systems: marine engineering 100-0179

Remote control: ships. USE: Automation.

Remotely operated vehicles (ROVs). USE: Submersibles.

Removal. USE: Scrapping.

Repairing. BT: Construction. RT: Operations. BT: Structures. NT: Reconditioning. NT: Shiprepairing. RT: Conversions. RT: Corrosion. RT: Design. RT: Maintenance. RT: Reliability. RT: Shipbuilding. RT: Wear

Replenishment tankers. USE: Naval vessels. USE: Tankers

Reports Admiralty. - naval engineers: education & training 018-0055.

Reports NECHES. SN: Report of Council. not indexed. not published annually in Transactions. BT: Publications: NECHES. - powering: steam recip engines: ships 004-0335. - shipbuilding: statistical sources: history 004-0343. - pumps: vacuum: condensers: ships 034-0083. - standardisation: steam recip engines: cargo ships 036-0315. - condensers 075-0351

Reports NECHES: classification: LR: ships. - 012-0179. - 013-0259. - 019-0229. - surveys 025-0113. - 027-0505

Reports NECHES: education & training. - yards 020-0255. - apprentices 024-0063. - 025-0101. - 034-0052. - naval engineers 046-0204. - nuclear: industry: shipbuilding 050-0255.

Reports NECHES: regulations: HOF: ships. - 021-0327. - 023-0207. - 024-0015. - 024-0361. - 025-0311. - 025-0265. - 024-0297. - 028-0395. - 029-0367. - 030-0601.

Rescue. USE: Life-saving craft & appliances

Research. BT: World. NT: specific subjects: e.g. diesel engines. RT: Design. RT: Materials. RT: Science. RT: Testing. RT: Universities. - engineering & shipbuilding: future trends 031-0171. - marine engineering: shipbuilding 035-0069. - economics: ship design: model tests 042-0144. - science: engineering: technology: fluid mechanics: materials: future trends 045-0225. - lbs: engine design 052-0103. - lbs: steam turbines: ship design 054-0021. - universities 054-0353. - lbs: gas turbines: aerial: propulsion: vibration 065-0085. - lbs: ships 065-0237. - economics: vibration: ships 067-0155. - gas turbines: Laing Lect 069-0111. - marine engineering: diesel engines: nuclear powered ships: Laing Lect 078-0017. - & coastal: mechanical engineering: Laing Lect 079-0021. - lbs: model tests: ships 081-0017. - shipbuilding: automation: steelwork: research: computers 082-0147. - corporate: shipping industry 083-0063. - curriculum of universities: education & training: ships 084-0059. - shipping & shipbuilding: Blackadder Lect 087-0103. - lbs: marine industry: Blackadder Lect 091-0121. - innovation: ship design: Blackadder Lect 093-0235. - offshore engineering: economics: Blackadder Lect 095-0155. - history: MARILL centenary 100-0300. - & design: comparison: Blackadder Lect 104-0065.

Research: Presidential Adm. - 034-0007. - 048-0019. - 053-0095. - 060-0017. - 061-0019. - 062-0810. - 064-0007. - 067-0003. - 091-0009. - 093-0009

Research ships. BT: Service vessels. - Nausharra 101-0155

Residual stresses: welding. USE: Welding.

Resistance: general. RT: Powering. RT: Friction. RT: Performance

Resistance: propellers: model tests. - wide: measurement 05-0349. - drag 081-0279.

Resistance: ships. RT: Powering. RT: Ships. NT: Wake. NT: Drag. NT: Frictional resistance. NT: Hull roughness. NT: Pressure resistance. NT: Wave-making resistance. NT: Wind resistance. RT: Hull form. RT: Model tests. RT: Propulsion. RT: Roughness. - & permission 060-0037. - calculating: instruments 070-0031. - parameters 070-0032. - frictional: 011-0004. - hull form: elongated sides: Mastinera (sc)

SECTION 4: SUBJECT INDEX.

- 026:0257; - hull form 028:0029; - corrugated sides. Monitors (s) 028:0059; - model tests: hull forms: jets: status: bilge keels: struts 032:0041; - calculators 032:0137; - merchant ships: hull form: powering 044:0047; - wake: model tests 046:0083; - hullform bows: hull form: propulsion 052:0065; - wake: powering: single screw ships 052:0179; - cargo ships: hull form: propulsion 052:0155; - hull form: merchant ships: history: Ljung Lect 054:0033; - & propulsion: coasters: model tests 058:0084; - hull roughness: model tests 058:0245; - & propulsion: cargo ships, high speed: ship design: economics 059:0023; - launching 062:0361; - powering: model tests 064:0211; - & wake 064:0275; - & propulsion: merchant ships: model tests: WW II 064:0289; - & propulsion: merchant ships: single screw: model tests 065:0047; - & propulsion: model tests: review 066:0295; - hull form: laminar flow 066:0194; - ship-theory correlation 067:0043; - wake: model tests: scale effects 069:0245; - (air)-wake effects: ship-model correlation; - Rine: largest: ship-model correlation 070:0279; - hull roughness 072:0257; - & propulsion: tankers: model tests 072:0279; - hulls: boundary layers 074:0311; - & propulsion: fishing vessels 075:0155; - model tests: using tank blockage & boundary effects 076:0059; - & propulsion: model tests: standardisation 076:0011; - frictional & pressure: Victory model tests 078:0445; - model tests: slat analysis: ship design 079:0157; - & propulsion: reduced draught: single screw 080:0185; - & propulsion: cargo ships, high speed: ship design 082:0277; - model tests: tank wall boundary effects 083:0055; - hull form 087:0139; - & performance 089:0067; - ship-model correlation: boundary layer 090:0051; - history & frame trends: Ljung Lect 091:0067; - boundary layers: hulls 092:0007; - & floating structures 093:0015; - hull form: vibration: all cases 095:0197; - drag: model tests: automation 096:0165; - hull roughness 100:X006; - hull form: full ship design 100:X007
- Resources.** BT: Environment. NT: Energy resources. NT: Manpower. NT: Materials. NT: Waste. RT: Mining. RT: Offshore engineering. - ships: shipbuilding: offshore engineering: environment 085:0075.
- Retirements NECIES.** USE: Awards NECIES
- Rhine (river).** USE: Inland waterways IFF: Europe RT: Germany.
- Richardson Westgarth oil engines.** USE: Oil engines
- Rigs, oil & gas drilling.** USE: Offshore drilling rigs.
- Rigs, sailing vessels.** USE: Sailing vessels.
- RINA.** SN = Royal Institution of Naval Architects 1960, previously INA - 1960 BT Naval Architects BT Professional institutions. RT: RINA [in Corporate Name Index] - re: specific pp
- Risk analysis.** BT: Analysis. BT: Safety. RT: Reliability. - chemical industry 057:0117; - aeronautics: shipbuilding: scrapping: NECIES conference 102:X006.
- River vessels.** USE: Inland waterways vessels.
- Rivers & river engineering.** USE: Inland waterways.
- Riveted ships.** BT: Riveting. BT: Ships. - vs welded: structural strength: tankers 064:0234; - dry cargo ships: vibration 067:0205
- Riveting: general.** BT: Metalworking. NT: Riveted ships. RT: Welding. - hydraulic machinery: riveting. - boilers: structural strength 034:0205
- Riveting: shipbuilding.** - machine: plates 005:0079; - counter-sinking 012:0039; - large ships: tapered bars 019:0185; - pneumatic equipment: chipping: hammer: drills 022:0015; - plates: metalurgy 030:0227; - pneumatic 042:0030; - 048:0159; - vs welding: dry cargo ships: structural strength 067:0205; - aluminium plates: structural analysis 072:0063; - vs welding: structural strength: cable: beams 072:0125.
- Road transport.** BT: Transport. NT: Motorways. RT: Road vessels. - of heavy cargoes: Ljung Lect 103:0047; - 108:0170
- Robots.** BT: Machines. RT: Automation. RT: Computers. - shipbuilding 102:0059
- Rockets.** USE: Weapons.
- Roll: ship motions.** USE: Motions. USE: Stability.
- Rolls Royce engines.** USE: Engines.
- Roll-on roll-off ships.** USE: Ro-ro ships.
- Ropes, wires, & cordage.** RT: Structures. NT: Cables. RT: Cargo handling equipment. RT: Mooring. - steel wire: parts: details 096:0371; - springs: manufacturing: machinery 097:0091; - man-made fibres: marine structures 107:0183
- Ro-ro ships.** BT: Merchant ships. RT: Ferries. RT: Passenger ships. RT: Road transport. - cargo handling equipment 083:0069.
- Rotterdam (port).** BT: Nether lands. NT: Europe: (cont)
- Rough weather & waters.** USE: Weather.
- Roughness: hulls.** USE: Fouling. USE: Resistance.
- Routing: ships.** RT: Operations. RT: Navigation. RT: Weather. - tankers: safety: English Channel 086:0131
- ROVs.** USE: Submersibles. - no specific pp
- Rowed vessels.** RT: Human powered vessels. - hull form: history: Ljung Lect 054:0033.
- Royal Institution of Naval Architects.** USE: RINA.
- Royal Navy.** USE: Navy: (subject). USE: Royal Navy [in Corporate Name Index]
- RT (Index term).** SN: - Related Term. USE: Index terms.
- Rubber.** BT: Materials. - abrasion: vibration: fudge: hammers 066:0155
- Rudders: ships.** RT: Appendages. BT: Manoeuvring devices. - structural design 024:0097; - steering 046:0141; - screw: slope: model tests 049:0097; - vibration: reliability: manoeuvring 058:0113; - manoeuvring devices: single screw ships 075:0087; - manoeuvring: see also 084:0021
- Rules.** USE: Classification. USE: Regulations.
- Running costs: ships.** USE: Economics: operations
- Russia (country).** BT: Countries. BT: Europe. - Baku (lake): near: forests: in: and waterways vessels 026:0181.

SECTION 4: SUBJECT INDEX.

- San Francisco (bay), USE: Marshes
- San Francisco (port, USA), USE: Ports, USE: USA
- Scale effects, USE: Model tests
- Scantlings: ships: structural design, BT: Structural design, BT: Structural members, BT: Structural strength, RT: Steelwork, - 007 029; - load lines 015:025; - 061 0323, - 065 0399; passenger ships: aluminium decks 077:0321.
- Scavenging: diesel engines, USE: Diesel engines
- Schools, USE: Education & training, RT: Organizations
- Science, BT: World, NT: Astronomy, NT: Geology, NT: Magnetism, NT: Mathematics, NT: Oceanography, NT: Philosophy, NT: Psychology, RT: Engineering, RT: Research, RT: Scientists, - economy management 037:0337; - ships: air-submarine warfare: acoustics: radio: helium airships 035:0386; - engineering: fibres: trends: geology: fluid mechanics: materials 043:0225, - materials: Nile 049:0255, - - S.I. C.A. Parsons 053:0053; - Presidential Addr 052:0019, - engineering: research: nuclear power: Lang Lect 071:0889, - education & training 105:0015; - chemical industry: education & training 108:0355.
- Scientists, RT: Personnel, RT: Science, - shipbuilding & engineering 067:0091.
- Scotland (country), BT: Great Britain, NT: Clyde (river & Clydebank region), NT: Glasgow (port).
- Scott Still oil engines, USE: Oil engines.
- Scrapping, BT: Engineering, BT: Structures, RT: Commissioning, RT: Construction, RT: Salvage, RT: Shipbuilding & build ships: Presidential Addr 052:0019; - casualties: ships 065:0374; - removal: offshore drilling platforms 093:029
- Screw machinery, USE: Pumps, USE: Propellers
- Screw propellers: -shafts: -ships, USE: Propellers, USE: Shafts, RT: Ships
- Seelve boards, USE: Laying off
- Sea power, USE: Economics, USE: Naval vessels.
- Sea trials, USE: Tests
- Seabed, BT: Geographic regions, BT: Oceans & seas, NT: Dredgers, RT: Offshore engineering, RT: Shallow water effects, - geology: surveying: offshore engineering: submersibles 097:0091.
- Seaborne diesel engines, USE: Diesel engines.
- Seajoule (waste heat recovery), USE: Waste heat recovery
- Seakeeping: ships, BT: Motors, BT: Performance, NT: Sea trials, NT: Slamming, RT: Balancing, - rough weather: damage: slamming 051:0151, - seakindness: ship design 054:0229; - - 066:0117, - fishing vessels: trials: performance 081:0037; - - 083:0013, - oceanic: review 090:0053, - - 097:0052; - fisheries: protection: vessels 002:0011, - theories: review 107:0045
- Seakindness: ship design, BT: Seakeeping, BT: Seaworthiness, - 054:0227, - 066:0117, - 066:0194
- Search & rescue, USE: Lifesaving craft & appliances.
- Searchlights, USE: Lights
- Seascope (conference: NECTES), USE: Conferences: NECTES
- Seating: engines, USE: Foundations
- Seatrail (rail car carrier s.s.), USE: Railcar carriers
- Seawater, BT: Oceans & seas, BT: Water: corrosion: boilers & heating: ships 076:0395.
- Seaworthiness: ships, BT: Ship design, RT: Seakindness, - regulations: insurance 041:0257
- SECTO, - awards: NECTES Hon. Fellowship 054:0015
- Secretary: NECTES, BT: NECTES, - education & training: research: management: Great Britain: engineering & shipbuilding: future trends 051:0171, - charity 055:0167, - history: NECTES 077:0151; - obituary 090:0029; - recruitment: 101:0208; - biography 103:0091.
- Self elevating drilling rigs, SN: Jack up rigs, USE: Offshore drilling rigs.
- Self-polishing paints, USE: Coatings
- Selling, USE: Marketing
- Semisubmersible vessels, BT: Satps, BT: Multi-hulled vessels, RT: Offshore drilling rigs, RT: Submersibles, - ship design: drilling rigs 076:0157, - ships: (Jing) Ocean Prince 087:0093, - shipbuilding: Aker H 2 060:0003; - ship design: Unite (Jing) N Sea 094:0113; - ship design: preliminary 107:0349
- Series 60 propellers, USE: Propellers.
- Service vessels, BT: Merchant ships, NT: Anchor handling vessels, NT: Diving support ships, NT: Dredgers, NT: Firefighting vessels, NT: Fishing vessels, NT: Icebreaking ships, NT: Lifesaving craft & appliances, NT: Offshore vessels, NT: Research ships, NT: Salvage vessels, NT: Tugs
- SEN, USE: Surface effect ships
- Shaft brackets: propellers, USE: Shafts, USE: Stern gear.
- Shafting, SN: Engine & propeller shafting, BT: Engines, BT: Transmission systems, NT: Crankshafts, NT: Engine shafting, NT: Propeller shafting, NT: Stern gear, NT: Tailshafts, RT: Torsion: wires, - structural strength 003:0077, - machinery: torque: performance: ships 059:0107, - vibration: stern: turbines: Parsons Lect 061:0111; - makers: alignment: diesel engines 070:0245; - corrosion: fatigue: structural strength & weld repair: ships 077:0293, - propellers: design & performance: Lang Lect 052:0019.
- Shallow draught vessels, BT: Draught, BT: Ships, - motor: coasters 050:0093, - Rhine: barges: ship mode: correlation 079:0279.
- Shallow water effects, RT: Seabed, - Collins: vibration: shallow water effects 073:0193.
- Sheffield (town), BT: Northern England, BT: Towns, - fire: fires: waste: NECTES 068:0301
- Shelterdeck vessels, BT: Merchant ships, - subdivision: water-tight: decks 059:0079.
- Shim Atoku Maru (sail-assisted tanker), USE: Sailing vessels, USE: Tankers.
- Shinkai 2000 (submersible), USE: Submersibles.
- Ship construction, SN: ship construction: terminology, Has been used to mean ship construction methods, i.e. shipbuilding and ship structural design, USE: Ship design, USE: Ship production, USE: Shipbuilding, USE: Structural design.
- Ship design: general, BT: Design, BT: Naval architecture, BT: Ships, NT: Standard ships, NT: Accommodation design, NT: Art & aesthetics: NT: Drawing offices (shipyards), NT: General arrangement, NT: Hull form, NT: Hydrodynamics, NT: Hydrostatics, NT: Interior design, NT: Load lines, NT: Machinery layout, NT: Seaworthiness, NT: Stability, NT: Structural design, NT: Subdivision, RT: Commissioning, RT: Marine engineering, RT: Model tests, RT: Specific: ship types: e.g. Tankers, RT: Specific: structural members: e.g. Hulls: e.g. Propellers, - Presidential Addr 008:0011; - 040:0558, - shipbuilding: economics: industrial relations 043:0249; - standardization 043:0269, - drawing offices: stopwatches: engine works 044:0335, - hydrodynamics 045:0025; - vibration 048:0063; - history: biography: A Lang 049:0029; - repair: tor 050:0125; - motor: coasters: shallow draught 054:0083; - sea-kindness 054:0227; - & propellers: aerodynamics: research 056:0082; - preliminary 057:0175; - production: welding 060:0159; - slamming 065:0451; - structural strength: photoelastic methods: Xy-onic: model tests 066:0037; - seakindly 066:0117; - - 066:0194; - Presidential Addr 067:0019; - combination & fire: carriers: fauna 070:0449; - nuclear: powered 078:0123; - engine & boiler: repairs: marine engineering 078:0243; - , CAD: vibration: shafting: diesel engines 079:0265; - resistance: model: time: data: analysis 079:0157; - classification: SOLAS 082:0215; - economics 082:0031, - modelling & simulation 087:0104; - tankers: finite element analysis 087:0003; - safety: innovation: Lang Lect 088:0083, - CAD 088:0151, - - 088:0002, - conferences: NECTES: safety 092:0001, - seaworthiness 093:0017; - research: innovation: Blackadder Lect 094:0206, - - 094:0217, - engineering: economics: optimization

SECTION 4: SUBJECT INDEX.

- uncertainty 096:0077; -; manufacturing: regulations: future trends 099:0087; -; hull form: resistance 102:X007; -; History: NECIES century 100:Y000; -; preliminary: uncertainty 102:0089; -; CAD 103:0175; -; preliminary 103:0107; -; pre-contract phase: ship production: integration 106:0007; -; Lizing Lect 108:0065.
- Ship design: cargo ships.** -; hull form: sea: consumption: economics 004:0065; -; wet dock 005:0151; -; new type 008:0231; -; wet dock 011:0209; - 014:0173; -; propulsion machinery: economics 049:0233; -; examples: shipowners: economics: operations 050:0071; - & tankers: history 051:0393; -; coasters: history 051:0417; -; high speed: economics: resistance & propulsion 059:1023; -; standard ships 063:0027; - 066:D194; -; combination carriers 070:0409; -; bulk carriers 079:0229; -; dry cargo ships: machinery layout: optimization 081:0271; -; high speed: Glenlyon: Pratts: resistance & propulsion: motions 082:0277; -; liquefied gas carriers 087:0069; -; tug-barge combinations 092:0025; -; passenger cargo ships: hull form.
- Ship design: high speed craft.** -; hovercraft 080:0245; -; hydrofoil vessels 082:0166; -; catamaran vessels 103:0139.
- Ship design: inland waterways vessels.** -; railcar carriers: India 008:0209; -; passenger ships: London CC 023:0171; -; Bangladesh: country boats 100:0123.
- Ship design: merchant ships.** - 009:0275; -; defence budget: anti-airborne 038:0157; -; passenger ships 040:0228; -; Searam (as: tanker carrier) 046:0179; -; shipowners: views 055:0105; -; shipowners: problems 075:0437; -; shipbuilding: operations 080:0239; -; marketing 098:0091; -; coal fired 098:0123; -; economics: operations 130:0147.
- Ship design: naval vessels.** -; battleships: anti submarine defence budget 009:0031; -; history 020:0377; -; destroyers 051:0053; -; history: Lang Lect 051:0077; -; floating docks 067:0155; -; nuclear weapons 072:0021; -; Lang Lect 077:0183; -; project planning 085:0089; -; Parsons Lect 098:0037; -; frigates: battleworthiness 106:0117.
- Ship design: offshore vessels & structures.** -; offshore service vessels 098:0109; -; tension leg platforms 100:0075; -; offshore & icebreaking vessels: operation: Arctic 103:0033.
- Ship design: passenger ships.** -; inland waterways vessels: London CC 023:0171; -; interior design 045:0301; -; history 061:0571; -; Bergensfjord: superstructure: aluminium 073:0113.
- Ship design: semi-submersible vessels.** -; offshore support vessels: N Sea: Uncle John 094:0117; -; preliminary design 101:0419.
- Ship design: service vessels & floating docks.** -; floating docks 004:0211; -; Acervoche (heavy lift vessel) 077:0249; -; offshore service vessels 098:0109; -; offshore & icebreaking vessels: operation: Arctic 103:0033.
- Ship design: small craft.** -; yachts: racing 002:0217; -; fishing vessels: drifters 085:0193; -; yachts: international 12m racing class 091:0149.
- Ship design: submarines & submersibles.** -; air row: powered cargo 075:0461; -; deep-diving 085:0013; -; GPP 092:0099.
- Ship design: tankers.** - 045:0417; -; Peter G. Cammell (Great Lakes oil tank-barge): shipbuilding: welding 050:0385; -; history 051:0393; -; welding: Phoenix 062:0033; -; performance 065:0181; -; standardisation 074:0101; -; Lang Lect 087:0025;
- Ship design: welding.** -; Peter G. Cammell (Great Lakes oil tank-barge): shipbuilding: welding 050:0385; -; merchant ships 055:0519; -; - & shipbuilding 060:0159.
- Ship models.** USE: Model tests.
- Ship motions.** USE: Motions.
- Ship production.** BT: Production. RT: Shipbuilding -; management 037:0323; - 085:X003; -; steelwork 083:X007; -; ship yards: analysis & design 087:X003; -; modeling & simulation 087:X004; -; large ships: tankers: future trends 087:X006; -; strategic planning 091:0181; -; simulation: computer 099:0115; -; productivity 100:0110; -; lasers: welding 102:0127; -; Germany 104:0007; -; automation: Finland: Italy 104:0143; -; statistical process control 105:0111; -; pre-contract phase: ship design: integration 106:0007.
- Ship types.** USE: Ships. USE: Ship types.
- Ship-experiments.** USE: experiments except for those listed here.
- Ship-model correlation.** USE: Model tests.
- Shipboard.** USE: specific subjects e.g. Cargo handling equipment.
- Shipbreaking.** USE: Scrapping.
- Shipbuilders: general.** RT: Engineers. RT: Shipbuilding. RT: Shipyards. -; economics: Europe: government 097:X004.
- Shipbuilders: education & training.** USE: Education & training.
- Shipbuilding: general.** BT: Construction. BT: Manufacturing. BT: Marine technology. RT: Naval architecture. RT: Ships. NT: Laying off. NT: Lifting. NT: Moulding. NT: Gauging. NT: Ship production. NT: Shipbuilders. NT: Steelwork. RT: Docks. RT: Launching. RT: Marine engineering. RT: Scrapping. RT: Shipbuilders. RT: Shiprepairing. RT: Shipyards. -; statistical sources: reports: NECIES 004:0343; -; equipment & machinery 025:0043; -; cost: estimating 015:0221; -; auxiliary work 073:0237; - & future trends 030:0331; -; research 035:0069; -; women in: WW I 035:0227; -; NE: England: WW I 015:0479; -; laying off 036:0138; -; pneumatic equipment 042:0050; -; workshop methods 042:0099; -; industrial relations: ship design: economics 047:0249; -; classification societies: Great Britain 053:0299; -; electrical equipment: economics 046:0158; -; repair for 060:0125; -; WW II: N America: Great Britain: Lang Lect 059:0061; -; WW II: Presidential Addr 050:0017; -; alloys: manufacture: foundries: welding 072:0157; -; steel: quality control: surface preparation 078:0277; -; Blackadder Lect 085:0073; -; research: future trends 087:0100; -; market forecasting 087:X001; -; standardisation: Great Britain 002:0123; -; naval architecture: consultants: Blackadder Lect 097:0073; -; Great Britain: government: strategy 100:0099; -; NECIES century: history: 100:Y000; -; contracts: performance 100:X002; -; quality control: 105:0111; -; productivity: quality control: Japan 106:0127.
- Shipbuilding: automation.** -; plates: optical marking 075:0247; -; steelwork: computers: research: Lang Lect 082:0047; -; numerically controlled machines 088:X003; - 089:0121; -; robots 102:0098; -; welding: computer integrated manufacture 103:0123.
- Shipbuilding: countries.** -; Canada & USA 045:0251; -; Netherlands 048:0167; -; foreign 054:0153; -; N America: WW II: Great Britain: merchant ships 059:0061; -; Great Britain: & world: Blackadder Lect 084:0151; -; Great Britain: history & future trends: Lang Lect 092:0017; -; Europe: Blackadder Lect 101:0089; -; USA: warships 101:0109; -; world: manufacturing: competition 102:X006; -; Germany 104:0007; -; Japan: productivity 106:0127.
- Shipbuilding: economics.** - 047:0249; -; electrical equipment 046:0358; -; subsidies 053:0023; - 055:0029; -; shipowners: views 056:0117; -; tendering & costs 071:0563; -; Blackadder Lect 088:0131; -; 094:X001; -; government: conferences: NECIES 097:X000; - 097:X001; -; risk analysis: conferences: NECIES: Serapco 100:X000; - 102:X001; -; shipowners vs builders vs financiers 102:X004; - 102:X006; -; government: subsidies: Presidential addr 103:0001; -; oil prices: Presidential Addr 103:0300.
- Shipbuilding: education & training.** -; future trends 071:0371; -; students: industry: research: NECIES 050:0295; -; universities 061:0065; -; craftsmen & seamen 062:0091; -; Presidential Addr 075:0021; -; leisure trends 087:0103; - 092:0009; -; manual training: craftsmen 098:0047.
- Shipbuilding: floating docks.** -; 024:0121; -; usage: naval vessels: WW II 085:0107.
- Shipbuilding: history.** -; NECIES century 100:Y000; -; NE: Eng: and conferences: NECIES 103:0071.

SECTION 4: SUBJECT INDEX.

- Shipbuilding: management** -> psychology: announcements 041-0305 -> industrial relations 043-0249, -> time & motion studies 051-0075; - 063-0141; - industrial relations 065-0263; - Denmark 079-0921; -> productivity: marketing: standardisation & future trends 082-0123, -> productivity: Fairfields 095-0045 -> tankers: long range planning 085-0099, -> marketing: Laing Lee 094-0167, -> future trends: conferences: NECIES 094-X030; -> computers 096-X032; - 189-X003, -> planning 094-X034; -> Great Britain 096-0135; -> marketing 097-X005, - 102-X002; -> world competition 102-X006.
- Shipbuilding: materials**, -> steel, basic 015-0291; -> metal alloys 045-0373, -> steel: non-ferrous 048-0271; -> metal-ferrous: Laing Lee 050-0025, -> steel, special 054-0177; -> aluminium 058-0221; -> non-metallic: coatings: warships 076-0267, -> aluminium 080-0219; -> GRP: mine warfare vessels 103-0159.
- Shipbuilding: merchant ships** -> steam recip engines: conversion: Presidential Addr 004-X013; -> magnetism: Thuermer (s. cargo ship) 023-0249; -> NE England: history 026-0095, -> rebreaking inland water main: Lury 026-0181; -> economics: trade 037-0152; -> rail-car carrier: Seatrain (s) 036-0179, -> tankers 046-0419; -> Peter U. Campbell (Chief Libr of tank-barges); welding 052-0085; -> cargo ships: market forecasting: data source 052-0193; -> shipowners: views 056-0105, -> N America: WW II: Great Britain: Laing Lee 058-0061, -> United States (passenger ship): aluminium 068-0221; -> ship-owners: problems 075-0437, -> ship design & operation 080-0135; -> quality control 087-0019.
- Shipbuilding: naval vessels**, -> steel, basic 015-0291, -> Clyde (river): history 026-0119; -> standardisation 028-0249; -> naval: floating docks, steel & concrete: WW II 065-0103, -> steel: brittle fracture: Laing Lee 073-0001, -> quality control 087-0018; -> USA: 101-0199; -> aircraft carrier: 102-0122; -> marketing: Great Britain vs world 107-X001, -> Great Britain: future trends 107-0067.
- Shipbuilding: offshore drilling rigs**, -> Ocean Prince (convertible): Transocean No 2 (jack-up rig) 083-0093; -> Akar II 3 (nonconvertible vessel) 090-X005.
- Shipbuilding: Presidential Addr**, -> 007-0503, -> steam recip engines 043-0009, - 043-0013, - 411-0013, - 012-0013; - 017-0017, - 019-0013; - 105-0025, - 077-0017; - 029-0118; - 035-0003, - 038-0025; - 042-0022, - 046-0019, - 047-0031, - 048-0019, -> design & build 052-0019, - 055-0038; - 058-0019, - 059-0015, - 066-0017, - 062-0019, - 065-0017; - 064-0017, - 073-0021; - 075-0021, - 079-0015; - 080-0009; - 083-0001, - 086-0006; - 091-0009; -> history & future trends 101-0001.
- Shipbuilding: propulsion machinery**, -> steam recip engines: Presidential Addr 007-0048, -> diesel-recip: diesel engines 013-0060; -> diesel engines: history: Great Britain 105-0019.
- Shipbuilding: riveting**, -> plates 005-0073; -> commercial: 012-0093, -> lapped butt: large ships 019-0085, -> pneumatic equipment: clapping: hammers: articles 072-0015, -> plasma metallurgy 073-0227; -> pneumatic equipment: 042-0030; 048-0159.
- Shipbuilding: small craft**, -> international 12m racing class: yachts 092-0149; -> GRP vessels 103-0359.
- Shipbuilding: welding**, -> electric 033-0248, -> Fear O Connell (Great Lakes oil tank-barges) 050-0085, -> structural strength 052-0061, - 055-0293; -> merchant ships 061-0159; -> lasers 099-0106, - 100-0093.
- Shipgrafting**: USE: Conversions, USE: Shiprenovating.
- Shipowners**: BT: Economics, BT: Personnel, RT: Shipowning -> views: compared vs triple exp steam engines 007-0229, -> tankships 047-0041, -> ship design: economics: operations: non-stop 056-0071, -> subsidies 050-0263, -> views: merchant ships: ship design: shipbuilding: operation 056-0105, -> problems: merchant ships & machinery: ship design: shipbuilding: operations: maintenance 075-0123; -> operations: merchant ships 083-X001, -> views: automation: operations 086-0141, -> scientists vs owners vs financiers 102-X003.
- Shipowning: economics**: BT: Operations, RT: Economics, RT: Shipowners, -> cargo ships 055-0117; -> Blackadder Lee 086-0109, -> tankers: oil industry: Blackadder Lee 089-0099; -> credit: banks: future trends 102-X005.
- Shipowning: Presidential Addr**, -> 035-0038; - 081-0015.
- Shipping: general**: BT: Transport, NT: Ships, -> Great Britain: merchant: history: sea power: Laing Lee 058-0033, -> industry: corporate research 083-0061; -> consultants: naval: architecture: Black Lee 097-0073; -> economics 097-X003, -> Great Britain: government: strategy 100-0099; -> automation: Laing Lee 105-0051.
- Shipping: Presidential Addr**, -> 014-0013; - 051-0017; -> WW II 055-0020, - 058-0019, -> WW II 065-0017, 071-0017; - 081-0015; - 089-0039.
- Shiprepairing**: BT: Repairing, RT: Ships, RT: Conversions, RT: Docks, RT: Shipbuilding, RT: Shipyards, -> boilers 012-0225; -> iron & steel 015-0031, -> NE England: WW I 035-0349, - 035-0479, -> Fujino: reliability & repair 045-0400; -> Presidential Addr 048-0019; -> ships & machinery 049-0081; -> & conversions 049-0147; -> for ship design & shipbuilding 050-0125, -> & maintenance: boilers: merchant ships 054-0063; -> WW I: Great Britain 053-0195; -> cargo ships & tankers: straggling: WW II 064-0059; -> safety: freighting 064-0093; -> & maintenance: floating docks: naval vessels: USA: Pacific Ocean: WW II 067-0355; -> reliability: machinery 073-0369; -> welding: shafting: fatigue strength 077-0293; -> & maintenance: machinery: ships 078-0193, -> & maintenance: naval vessels 082-0229; -> & maintenance: economics: operation 090-0009, -> outfitting 092-X026, -> management: computers 094-X003, -> conferences: NECIES 096-X009, -> manual training: craftsmen 098-0047.
- Ships**, SN: unless otherwise stated are monohull, surface displacement, self-propelled, steel, ocean-going, merchant ships, BT: Shipping, RT: Structures, NT: Ships: various headings, RT: Boats, RT: Docks, RT: Floating structures, RT: Flying boats, RT: Ports, RT: Offshore structures, -> Presidential Addr 025-0025; - 034-0009; -> conferences: NECIES: Seatrain, 087-X000, -> Blackadder Lee 085-0073; -> future trends: Laing Lee 086-0073; -> Presidential Addr 087-0069; -> technology: conferences: NECIES 087-X000.
- Ships: calculations**, USE: Conformation, USE: Hydrostatics, USE: Ship design, USE: Stability.
- Ships: component & structural parts**, USE: Accommodation design, USE: Appendages, USE: Rigging: keels, USE: Bulkheads, USE: Cargo handling equipment, USE: Cranes, USE: Decks, USE: Engines, USE: Funnels: masts: USE: Equipment, USE: Hulls, USE: Machinery, USE: Manoeuvring devices, USE: Masts, USE: Plates, USE: Propellers, USE: Propulsion machinery, USE: Rudders, USE: Shafting, USE: Stabilizing devices, USE: Superstructures, USE: Tanks.
- Ships: construction facilities**, USE: Conversions, USE: Engine builders, USE: Ship production, USE: Shipbuilding, USE: Shiprepairing, USE: Shipyards.
- Ships: construction materials**, USE: Materials, USE: Steel, USE: Structural design, USE: Structural strength.
- Ships: construction methods**, USE: Riveting, USE: Ship production, USE: Shipbuilding, USE: Welding.
- Ships: design**, USE: Accommodation design, USE: Hull form, USE: Manoeuvrability, USE: Model tests, USE: Models, USE: Naval architecture, USE: Ship design, USE: Stability, USE: Structural design, USE: Structural strength.
- Ships: dynamics**, USE: Dynamics, USE: Motions.
- Ships: equipment**, USE: Auxiliary equipment, USE: Cargo handling equipment, USE: Machinery, USE: Outfitting.
- Ships: maintenance**, USE: Conversions, USE: Maintenance, USE: Shiprepairing.
- Ships: motions**, USE: Motions, USE: Stability.
- Ships: offshore engineering**, USE: Offshore engineering.
- Ships: operations**, USE: Offshore engineering, USE: Operations, USE: Performance, USE: Ports, USE: Trials.

SECTION 4: SUBJECT INDEX.

- Ships: propulsion. USE: Maneuverability. USE: Propulsion.
- Ships: propulsion machinery. USE: Air motion vehicles. USE: Diesel engines. USE: Engines. USE: Human powered vessels. USE: Manufacturing. USE: Marine engineering. USE: Motor ships. USE: Nuclear powered vessels. USE: Oil engines. USE: Performance. USE: Propulsion machinery. USE: Sailing vessels. USE: Steam reciprocating engines. USE: Steamships.
- Ships: repairing. USE: Conversions. USE: Shiprepairing.
- Ships: resistance. USE: Powering. USE: Propulsion. USE: Resistance.
- Ships: size. USE: Large ships. USE: Small craft.
- Ships: safety. USE: Safety.
- Ships: speed. USE: High speed craft. USE: High speed ships. USE: Medium speed vessels. USE: Model tests. USE: Performance. USE: Trials.
- Ships: stability. USE: Multi-hulled vessels. USE: Stability.
- Ships: types: general. USE: Merchant ships. USE: Naval vessels. USE: Small craft. USE: Submarines. USE: Submersibles. RT: Offshore structures [including Jack-up rigs; Mobile offshore drilling platforms; Tension leg platforms].
- Ships: types: specific. SN: in addition to those listed above. USE: Advanced marine vehicles. USE: Air motion vehicles. USE: Barges. USE: Bulk carriers. USE: Car carriers. USE: Catamaran vessels. USE: Cellular ships. USE: Chemical carriers. USE: Colliers. USE: Combination carriers. USE: Container ships. USE: Ferries. USE: Fishing vessels [including Drifters; Whale factory ships]. USE: Fisheries protection vessels. USE: Hovercraft. USE: Hydrofoil vessels. USE: Hydroplane vessels. USE: Icebreaking vessels. USE: Inland waterways vessels. USE: Lifesaving craft & appliances. USE: Liquefied gas carriers. USE: Offshore vessels. USE: Ore carriers. USE: Passenger ships. USE: Railcar carriers. USE: Research ships. USE: Row ships. USE: Salvage vessels. USE: Semi-submersible vessels. USE: Shallow water vessels. USE: Shelterdeck vessels. USE: Sister ships. USE: SWATH vessels. USE: Tankers. USE: Train ferries. USE: Tug-barge combinations. USE: Tugs. USE: Turret-deck ships. USE: Warships [including Aircraft carriers; Battleships; Cruisers; Destroyers; frigates; Mine warfare vessels]. USE: Well-deck ships. USE: Yachts.
- Ships: *other subjects*. USE: *specific subjects* e.g. Economics.
- Shipyards: general. RT: Engineering works. RT: Industry. RT: Docks. RT: Launching. RT: Ship production. RT: Shipbuilding. RT: Shiprepairing. - : *summary notes* NECIES: Netherlands 029-0343; - : *naval vessels* 030-0377; - : *layout* 023-0033; - : *drawing offices; engine works* 044-0252, - : *Netherlands layout* 048-0167; - : *electrical equipment* 059-0093; - : *lighting; welding; electrical equipment* 067-0179; - : *cranes* 070-0232, - : *Queens Island; Belfast, N. Ireland* 087-0153; - : *analysis & design* 087-0002; - : *Swan Hunter Shipbuilders* 091-0109, - : *small craft* 095-0029; - : *designs; Palliser Ship Factory Project* 095-0093, - : *Europe; Blackadder Leet* 101-0089, - : *sailing vessels; Epcosaul (port)* 106-0081.
- Shipyards: industrial relations. - : *Facilities* 085-0002, - : *Tyneside* 092-0077, - : *& management; Japan; Long Leetors* 102-0007.
- Shipyards: management. - : 015-0087, - : 017-0129, - : *United* 025-0125, - : 033-0033; - : *reorganisation conferences* NECIES: Tyneside 077-0077; - : 077-0078; - : 077-0089; - : 077-0095; - : 077-0101; - : *nationalised; Great Britain; Long Leet* 104-0019.
- Shipyards: visits. NECIES. - : 403-0275; - : *Hartlepool* 005-0061; - : 016-0101, - : *Walsend* 017-0081.
- SI (index term). USE: Subject index.
- Sides: hulls. USE: Hulls. USE: Hull form.
- Signalling. USE: Telecommunication.
- Silverlarch & Silverpine (m.s. cargo ship). USE: Cargo ships. USE: Motorships.
- Simplification. USE: Standardisation.
- Simulation. BT: Design. RT: Analysis. RT: Computers. RT: Model tests. - : *ship design & production* 087-0004; - : *ship production; computers* 099-0115.
- Singing propellers. USE: Propellers. USE: Vibration.
- Single-hulled ships. USE: Mono-hulled vessels.
- Single screw ships. SN: many ships are single screw. USE: Propellers. USE: Ships. RT: Twin screw ships.
- Sinking: ships. USE: Ballasting. USE: Casualties. USE: Stability. RT: Flooding.
- Sister ships. BT: Ships. - : *wave ship-to-ship correlation* 378-0416.
- Slamming: ships. BT: Seakeeping. RT: Ballasting. RT: Waves. - : *rough weather; damage; seakeeping* 051-0151; - : 065-0451; - : *vibration; damage* 087-0083.
- Sleeve valve diesel engines. USE: Diesel engines.
- Slide valve gears. USE: Gears.
- Slipways. USE: Shipyards. RT: Docks. graving. RT: Launching.
- Slow speed diesel engines. USE: Diesel engines.
- Slow speed oil engines. USE: Oil engines.
- Sludges, oil. USE: Oil.
- Small craft. SN: small marine craft. BT: Ships. NT: Fishing vessels. NT: Lifesaving craft & appliances. NT: Yachts. RT: High speed craft. RT: Large ships. RT: Power engines. - : *stability; metacentric height* 019-0107; - : *non-metallic materials; outfitting* 076-0267; - : *shoypards* 095-0029; - : *safety* 098-0151; - : *inland waterways vessels; Bangladesh* 100-0153, - : *GRP; stabilising; structural design; mine warfare vessels* 102-0159.
- Small ships. USE: Small craft.
- Small warships. USE: Warships.
- Small waterplane twin hulled ships. USE: SWATH vessels.
- Smoke. RT: Pollution. - : *coal combustion ships* 009-0043.
- Software engineering. USE: Computers.
- SOULAS. SN = Safety of Life at Sea (Convention). USE: Safety. USE: Regulation.
- Solway Firth (river). USE: Inland waterways. USE: Northern England.
- South Dakota (cruiser, USA). USE: Warships.
- South Shields meetings. NECIES. RT: Ports. BT: Tyne (river) & Tyneside (quay). - : 013-0151; - : 014-0155, - : 015-0125, - : 016-0151; - : 017-0143; - : 018-0273; - : 019-0155.
- Southern England. RT: England. NT: London (port).
- Special steel. USE: Steel.
- Speed: & - loss: & - trials: ships. USE: Performance. USE: Resistance. USE: Trials. USE: Weather. NT: Medium speed ships.
- Spennymoor (town). RT: North East England. RT: Towers. - : *foundries; visits* NECIES 007-0040.
- Spraying. USE: Coatings.
- Spring foundations: foundries. USE: Foundations.
- Springing: ships. BT: Structural strength. RT: Vibration. - : *vibration; damping* 087-0083, - : *containerships* 090-0019.
- Springs. BT: Equipment. RT: Ropes, wires & carriage. - : *manufacturing; wires; machinery* 069-0001; - : *designs; research; mechanical engineering; Long Leet* 079-0021.
- Stabilising devices: ships. BT: Ships. RT: Appendages. RT: Helms. RT: Stability. - : *Presidencia; Addr* 029-0025, - : *rolling motions; hull & bilge keels* 056-0025; - : *compensators; SWATH vessels* 106-0057.
- Stability: ships. BT: Safety. BT: Ship design. BT: Ships. NT: Ballasting. NT: Free curves. RT: Hydrostatics. RT: Load lines. RT: Mooring. RT: Safety. RT: Stabilising devices. RT: Subdivision. - : *curves* 001-0053, - : *merchant ships; load lines* 002-0059, - : *damaged; unsinkability; cargo ships* 007-0087, - : 001-0335; - : *crossing* 308-0141; - : *motions; rolling* 011-0053, - : *load lines; scantlings* 015-0125, - : *merchant ships; ballasting; water* 018-0051, - : *small craft; metacentric height* 019-0107, - : *displacement; cubes; Tchebycheff formula; hydrostatics* 019-0155, - : *survey; paper calculating instruments*

SECTION 4: SUBJECT INDEX.

020:0097; - merchant ships: engine room bulkheads: bilge condition 020:0159. - trim curves: hydrostatics 023:0295. - curves 027:0183; - damaged: calculations 032:0137. - convex standardisation 032:0164. - 040:0219; - capsizing: safety 041:0025; - damaged: flooding 046:0292; - sea-kindness: ship design 054:0227; - cargo ships: ballasting: water 058:0241; - merchant ships: shelterdeck vessels: decks, water-tight 059:0039. - chronometer & levels 061:0137. - stanchion free surface: offshore tankers 065:0153; - hydrostatic curves 070:0326; - offshore drilling rigs 091:0143; - intact: rolling motions. IMO: regulations 104:0081

Staland (oil tanker). USE: Miniships. USE: Tankers.

Standardisation. BT: Design. BT: Ship design. RT: Hull form. RT: Propellers. RT: Quality assurance. RT: Reliability. - metric system: Great Britain 011:0281. - stability curves. ships 032:0164; - steam recip engines: cargo ships 032:0233. - - reports: NECTES 036:0315; - merchant ships: shipbuilding 038:0349; - design: trade: economics 038:0471; - data analysis: model tests: ships 019:0227; - ship design & machinery 043:0269; - engineering: production: WW II 050:0113; - ship design: cargo ships 063:0327; - ship design: tankers 074:0101. - ship model tests: resistance & propulsion 076:0011. - shipbuilding 083:0129; - , Great Britain 092:0122; - statistical process control: shipbuilding 095:0111

Stars. USE: Astronomy. USE: Navigation.

State assistance: economic subsidies. USE: Economics. USE: Government. USE: Shipbuilding.

Static loading: ships. USE: Longitudinal strength.

Static stability: ships. USE: Stability.

Statics. RT: Mechanics. NT: Hydrostatics. RT: Dynamics. - chain cable lifers: ships 066:0095.

Stationing: ships. USE: Dynamic positioning. USE: Manoeuvring.

Statistical process control: shipbuilding. USE: Ship production.

Statistics: data. - shipbuilding: reports: NECTES 024:0543

Statistics: methods. BT: Mathematics. USE: Data processing.

Steam. BT: Water. NT: Steam engines.

Steam boilers. USE: Boilers.

Steam engines. SN: External combustion engines. Expansion engines. NT: Steam reciprocating engines. NT: Steam turbines. NT: Compound engines. RT: Boilers. RT: Combination engines. RT: Economics. RT: Steamships. ships awards: NECTES: Her Fellows: ships 048:0237. - vs diesel engines: economic operations & maintenance: ships 057:0229

Steam gas engines. USE: Gas engines.

Steam generators. BT: Power generators. BT: Steam machinery. NT: Boilers. NT: Condensers. NT: Heat exchangers. NT: Steam turbines. - : accessories: maintenance & repair 048:0045; - comparison of land & ship 050:0137. - boiling water: pipes & nozzles: fluid dynamics 053:0165. - general & ships: Laing Lect 053:0161; - nozzles: fluid dynamics 062:0051; - Presidential Addr 077:0623.

Steam machinery. SN: steam power machinery. RT: Machinery. NT: Steam generators. RT: Nozzles. - pipes: iron steel & copper: ships 007:0115. - freighting: ships 019:0032; - high pressure: valves: ship 018:0161. - copper pipes: fatigue 025:0132; - high pressure: history 043:0281; - steering gear: ships 050:0101.

Steam pipes. USE: Pipes. USE: Steam machinery.

Steam propulsion & steam powered ships. USE: Propulsion machinery. USE: Steam engines. USE: Steam reciprocating engines. USE: Steamships.

Steam reciprocating engines. BT: Steam engines. RT: Combustion engines. - : crankshafts: forging & casting 001:0057. - triple exp 001:0107; - crankshafts: structural strength: ships 001:0191; - - forging & casting: ships 002:0057; - high speed: ships 002:0287. - shipbuilding: Presidential Addr 003:0009; - triple exp vs compound: ships 003:0229. - triple exp conversion: ships: Presidential Addr 004:0019. - steam valve gears 004:0045. - powering: ships: reports: NECTES

004:0335. - high speed: ships 006:0115. - powering: ships 006:0175; - merchant ships: weight: economics 006:0253. - boilers: high pressure: piston speed: ships 007:0047; - war ships 008:0069; - high speed: vibration: ships 012:0059. - DeFore 2-stroke high speed vibrators: ships 012:0041. - high speed: powering 012:0149; - boilers: fuel: combustion: ships 012:0225. - research: university 013:0073; - boilers: high pressure: ships 013:0185; - multiple exp: cylinder ratios 014:0199. - quadruple exp: crank angles: performance 014:0227. - multiple exp: receiver: ship 016:0063; - structural strength: connecting rods 017:0027; - vibration: balancing: powering: ships 019:0131. - governors: automation: ships 020:0159. - pistons: performance 024:0225. - & steam turbines: combination machinery: ships: Orski (ss) 026:0051; - & auxiliaries: performance: ships 027:0051; - superheaters: ships 027:0194. - vs other engine types: ships 028:0249; - triple exp: vs geared steam turbines: ships 029:0220; - ships: history: NE England 030:0412. - triple exp: cargo ships: standardisation 033:0233. - - 036:0315; - vs diesel engine: propulsion machinery 040:0517. - fuel vs ships 041:0091. - conversion: to diesel engines: ships 041:0315; - high pressure: triple exp: Hornet (tug) 043:0083. - triple exp: Presidential Addr 045:0017; - high pressure: Steam (tug) 045:0055. - steamships: performance: operations: steam reciprocating engines 045:0058; - economic performance: ships: conference 046:0089; - Bushanic: gear: ships: economics 048:0096; - Constantin: ships: economics 049:0099. - , Laing: ships: economics 048:0106; - superheated: ships 048:0113. - ships: economics 048:0134; - conversion: repair: ships 048:0244; - conversion: repair: ships 049:0081. - vs diesel: boilers, water-tube: cargo ships 049:0205; - auxiliary: ships 050:0197. - fuel: maintenance & operations: economics: ships 051:0229; - history: ships 051:0443; - locomotives 052:0207. - torque: propulsion: performance 059:0147. - design: for: production 060:0343; - performance: machinery: low: meters: ships 061:0051; - machinery & equipment: tankers 061:0263; - Queen Victoria (cargo ship): longitudinal strength: foundations 064:0045.

Steam turbines. BT: Steam generators. RT: Turbines. NT: Steam engines. RT: Combustion engines. RT: Steamships. - , compound generators 004:0127. - Rankine & others 018:0073; - ships: history 020:0157; - version: internal: powering: ships 024:0131; - internal: speed: ships 025:0203; - steam recip engines: combination machinery: ships: Orski (ss) 025:0051; - design: heat diagrams 026:0501. - geared: vs triple exp: steam recip engines: cargo ships 029:0220. - geared: ships 036:0051; - steel: metallurgy 066:0021. - nozzles: fluid mechanics 057:0209; - reliability 029:0411. - performance: merchant ships 039:0541; - merchant ships: coal: powdered: fuel 039:0571; - thermal efficiency 041:0242; - performance: gas: fuel: economy: general: of ships: King George VI (river steamer) 043:0155. - high pressure: King George VI (river steamer) 045:0260. - auxiliary: ships 050:0187; - ships: history 051:0479. - & generators: ships & general: Parsons Lect 052:0021. - Queen Mary & Queen Elizabeth (high powered passenger ships) 057:0095. - blades: wind tunnel model tests: ships 058:0059. - shafting: vibration: Parsons Lect 061:0311; - reheat: steam cycle: Beaker (cargo-steam: cargo ship) 059:0071; - research: ships: ships: Laing Lect 064:0021. - Arco (cargo ship) performance: N Atlantic 064:0333; - Turbina (high speed naval craft) 065:0117. - geared: vibration: ships 066:0223. - general: merchant ships 066:0313. - superheater: tubes: vibration: ship: steel 069:0027; - manoeuvring: ships: thermal effects 070:0093. - oil-fired: water-tube: boilers: ships 070:0251. - high temperature: metallurgy 070:0217. - bases: up: clearance 070:0419. - geared: hawking: ships 072:0235; - naval vessels: propulsion machinery: Parsons Lect 073:0037; - trade: warships 073:0179; - freshwater systems: ships 073:0252; - boilers: water-tube: the: natural circulation: ships 074:0311; - design & operation: ships 077:0225; - turbo-gears vs diesel engines:

SECTION 4: SUBJECT INDEX.

- marine engineering 079:0243; -; vibration 079:0051; -; oil lubrication: cavitation wear thrust rollers: ships 081:0305; -; replenishment tankers 082:0059; -; large war: Parsons Lect 089:0031; -; raked propellers: machinery: ships 093:0107; -; vs diesel engines: automation: ships 094:0129; -; power stations & future trends: economics: Parsons Lect 097:0023; - & gas turbines: warships: Blackadder Lect 099:0058; -; auxiliary geared: design: ships 100:0135; - & combined cycles: propul: ship: ships 100:0011.
- Steamers.** USE: Steamships.
- Steamships.** SN: many ships are steamships, hence too many pprr to list here. BT: Ships. NT: <same headings as for Ships>. RT: Motorships. RT: Steam engines. RT: Steam reciprocating engines. RT: Steam turbines.
- Steel.** SN: Steel is an iron alloy. BT: Metals. BT: Iron. NT: Steelwork. NT: specific steel structures: e.g. Plates, e.g. Ships. RT: Forgings. - & iron: crankshafts: rotary recip engines: forging & casting 001:0037; -; Presidential Auld 002:0037; -; base: shipbuilding 003:0291; -; base: warships: shipbuilding 003:0291. - & iron & copper steam pipes: ships 009:0113; -; mild: boilers: forging & casting 010:0067; -; mild: corrosion: fatigue: bolts 026:0029; -; watertight bulkheads: structural strength: 025:0227; -; iron: carbon: heat treatment 029:0142. - plates: naval: forging & casting: shipbuilding 051:0227. - steam turbines: metalurgy 036:0021; - casting & treatment 036:0355; -; economy: trade: Great Britain & foreign 047:0089. - mild: forging & casting: fatigue 048:0121. -; shipbuilding: converters 048:0221; -; special: engineering & shipbuilding 056:0177; -; low carbon: creep: aluminium superheaters: steam turbines: ships 069:0027; - plates: manufacture: shipbuilding 072:0137; -; cleavage: welded structures 073:0087; -; brittle fracture: shipbuilding: warships: Laing Lect 075:0301; -; coated mild: boilers: ships 076:0095; -; high tensile: tankers 081:0263; -; high yield: structural design: ships 083:0137; -; industry: Laing Lect 087:0057; -; coatings: corrosion: ships & engineering 088:0117; -; high ten. steels: ships: structural design 092:0148.
- Steel ships.** SN: most ships are steel unless otherwise stated. USE: Ships. USE: Steel.
- Steelmakers.** USE: Foundries.
- Steelwork:** ship design & shipbuilding. RT: Examination. RT: Ship design. BT: Shipbuilding. BT: Steel. RT: Scantlings. - automation: computers: research: Laing Lect 083:0047. -; introduction 083:0707. -; structural design: cost estimating: automation 104:0045.
- Steering gear.** USE: Manoeuvring devices.
- Stern frames: ships.** BT: Frames. BT: Sterns. - structural design 104:0097.
- Stern gear: ships.** BT: Appendages. BT: Shafting. BT: Sterns. NT: Shaft brackets. RT: Aft ends. RT: Frameless. -; structural design 004:0097. -; 008:0259. -; shaft bracket effects: propellers: performance 044:0211; -; forging & casting 065:0315; -; hydrostatic: design 066:0037.
- Stern trawlers.** USE: Fishing vessels.
- Stern tubes.** USE: Stern gear.
- Sterns.** BT: Hulls. NT: Stern frames. NT: Stern gear. RT: Aft ends. -; cruiser: coasters: population: model tests 050:0249. -; performance: cargo steam ships: weather 057:0135.
- Stiffeners: ships.** BT: Structural design. BT: Structural members. BT: Structural strength. RT: Plates. -; bulkheads: hulls: design 012:0157; -; scantlings 061:0331; -; structural: design 056:0183; -; aluminium: structural strength 075:0057; -; torsion: longitudinal strength 079:0157.
- Sub oil engines.** USE: Oil engines.
- STT conference.** (1970). SN: Ship technology in transition. USE: Conferences NPCIES. USE: Ship design.
- Stock control.** USE: Production.
- Stripping: ships.** USE: Manoeuvring.
- Stork diesel engines.** USE: Diesel engines.
- Strain gauges.** BT: Instrumentation. -; experimental methods: engineering design 065:0029.
- Strength.** USE: Materials. USE: Metallurgy. USE: Structural analysis. USE: Structural design. USE: Structural strength.
- Strength of materials.** USE: Materials. USE: Structural strength.
- Stress analysis.** USE: Structural analysis.
- Strip theory.** -; propellers 062:0269; -; skeekeeping: warships 102:0011.
- Structural analysis.** BT: Analysis. -; vibration: ships 051:0259; -; engineering design: experimental methods 065:0029; -; naval vessels: Navier expression: girders 066:0051; -; Laing Lect 068:0031. -; Ocean Valero (cargo ship): vibration 068:0051; -; computers: using: ships 071:0067; -; vibration: data analysis: graphics: ships 073:0331; -; structures 074:0163; -; photoelasticity: stress analysis: marine engineering 078:0031. -; complex structures: model tests 079:0149; -; tankers: finite elements 087:0005; -; tankers: ULCCs: VLCCs 090:0133; -; dynamics: offshore structures 093:0041; -; offshore drilling rigs 098:0011; -; propellers & mast sails: finite elements 105:0127. -; cargo ships: finite elements 107:0133.
- Structural design: general.** BT: Design. NT: Structural design: specific structures. NT: specific structures. RT: Loads. RT: Materials. RT: Structural strength. -; boilers: corrosion 001:0073. -; boilers: high pressure 006:0097. -; plasticity 057:0255.
- Structural design: ships.** BT: Ship design. NT: Bulkheads. NT: Bulkheads. NT: Engine foundations. NT: Frames. NT: Girders. NT: Longitudinal strength. NT: Machinery spaces. NT: Scantlings. NT: Struts. -; salvage ships 002:0131. -; rudders: hinge keels: stern frames 004:0097. -; scantlings 007:0395. -; hulls: 008:0019. -; stem gear 008:0259; -; large: cellular: machinery spaces 010:0019; -; 012:0111; -; frames, transverse 014:0027. -; iron & steel 015:0031; -; scantlings: load: hulls: stability 015:0125. -; framing 024:0289; -; arch principle 029:0085; -; 034:0151; -; 040:0107. -; girders 041:0033; -; discontinuities: metalurgy: passenger ships 049:0221; -; collisions: regulations 051:0347; -; welding: Mauritania (passenger ship): Laing Lect 056:0045; -; tankers 058:0169; -; naval vessels: Laing Lect 061:0027; -; hulls: clastic: beam: stresses 064:0138. -; girders: plates: scantlings 065:0099; -; plates: stiffeners 066:0185; -; Staland (conv. tanker): bulkheads: arranged: plates 066:0233; -; tankers: classification 070:0045; -; steel: weight 072:0123. -; weight saving: girders 073:0145. -; passenger ships: aluminium scantlings: stress 075:0121; -; aluminium 090:0219. -; steel: high yield 082:0125. -; wave loads 083:0036; -; CAD: bulk carriers 086:0119; -; liquefied gas carriers 087:0066. -; new innovations 089:0101; -; materials 092:0149; -; LNG carriers: tanks 096:0197; -; vibration 098:0049; -; mine warfare vessels: GRP vessels 104:0159; -; steelwork: optimization: cost estimating 104:0045.
- STRUCTURAL design: superstructures.** -; cargo: cargo ships 014:0089. -; aluminium: economics: cargo ships 060:0101. -; aluminium 062:0329.
- Structural dynamics.** USE: Dynamics.
- Structural loads.** BT: Loads. RT: Structural design. RT: Structural strength. -; no specific pprr.
- Structural members.** BT: Structures. NT: Beams. NT: Columns. NT: Cylinders. NT: Girders. NT: Girders. NT: Plates. NT: Stiffeners. NT: Tanks. -; ships 071:0025.
- Structural names.** BT: Names. BT: Structures. NT: specific structures: e.g. Tubular.
- Structural strength: general.** BT: Ships. NT: Longitudinal strength. NT: Photoelasticity. RT: Loads. RT: Metallurgy. RT: Reliability. RT: Safety. RT: Structural design. RT: Testing. -; crankshafts: steam recip engines: ships 001:0037; -; shaft: beams 003:0077; -; copper: beam: pipes 015:0067. -; laminated: materials 016:0017; -; composite: rad: steam recip engines 017:0027; -; oxy-acetylene: welding 030:0026; -; steam turbines: steel 040:0421. -; materials 045:0042. -; -;

SECTION 4: SUBJECT INDEX.

- testing 053:0101, -; plates: arc-welding: residual stress 053:0255; -; molecular structure: radiography: Laing: Lee: 055:0033; -; plasticity: design 057:0255; -; rivets: radiography 061:0299; -; aluminum: plates 064:0223; -; mass & defects: wire ropes: ships 065:0371, -; discontinuities: plates 073:0029; -; welded structures: steel: cleavage 073:0087; -; surveys 074:0163; -; fatigue: fretting: aluminum 076:0183; -; cylinders 087:0015; -; fracture mechanics 080:0077; -; plains 093:0153.
- Structural strength:** boilers, - 006:0059, - 007:0205; - 007:0219; -; funnels: fuel oils 021:0253; -; classification: ships 069:0185.
- Structural strength:** naval vessels, -; brittle fracture: Laing: Lee: 073:0001; -; plates 074:0021;
- Structural strength:** propeller shafting, -; reliability: fatigue & casting 015:0149; -; - 015:0161; -; reliability 055:0203; - & propellers 067:0389, -; corrosion: fatigue & welded repairs 077:0293;
- Structural strength:** ships, -; Presidential Addr 002:0037, -; stiffness: bulkheads, collision 002:0157; -; cargo ships 015:0155; -; - 006:0215; -; transverse sections 013:0105; -; large: zivcing: lepped hulls 019:0185; -; watertight bulkheads, steel 025:0227; -; cargo ships: N Atlantic: water: weather: performance 046:0107; -; rough weather damage: sunken: jamming 051:0151; -; welding: shipbuilding 052:0151, -; San Francisco (matterships): rough weather 054:0119; -; plates: stiffness: scarlings 061:0133; -; launching 062:0351; -; plastic: elastic modulus: Kyrimitz model tests 065:0031, -; welding vs riveting: vibration: dry cargo ships 067:0205, -; structural members 071:0025; -; aluminum: plates: riveting 072:0083; -; gillages: weight saving 075:0155; -; nuclear powered: merchant ships: Laing: Lee: 075:0027; -; aluminum: stiffness 075:0057; -; longitudinal strength: ship design: computers 077:0023; -; double bottoms: box-shaped: welding vs riveting 077:0145; -; longitudinal vs transverse strength: computers 077:0291; -; passenger ships: deck girders: HVAC 078:0091; -; superstructures 078:0161; -; double bottoms 081:0175; -; transverse strength 081:0175; -; tanks: phosphate carriers 087:0013; -; longitudinal strength: vibration: containerships 090:0019, -; plates 091:0035.
- Structural strength:** tankers, - 006:0327; -; welding: Panama 063:0055; -; rivets: vs welds: Newcastle & Newcastle 063:0257; - 055:0193; -; frames: Hardy Cross method 069:0157, -; launching 070:0253; -; Lloyd 080:0093.
- Structures:** general, SE: man-made engineering structures, BT: World: NT: Construction: NT: Design: NT: Equipment: NT: Floating structures, NT: Machines: NT: Machinery: NT: Maintenance: NT: Minimization: NT: Off-shore structures, NT: Operations: NT: Repairing: NT: Ropes: wires & cables: NT: Strapping: NT: Ships: NT: Structural members: NT: Structural members, NT: Welded structures, RT: Engineering, RT: Materials, RT: Transport, -; complex structural analysis: model tests 079:0149.
- Structures:** types, NT: Decks, NT: Decking, NT: Parts, NT: Shipyards, NT: Aircraft, NT: Chimney stacks, NT: Containers (general), NT: Off-shore structures, NT: Railways, NT: Ships, NT: Vehicles.
- Structs:** ships, BT: Structural design, BT: Structural members, BT: Structural strength, RT: Columns - model tests, resistance 052:0041.
- Students,** USE: Education & training, USE: Universities, BT: Personnel.
- Subdivision:** ships, BT: Ship design, RT: Bulkheads, RT: General arrangement, RT: Stability, damaged -; cargo ship: unsinkability 007:0087, -; -; stability, damaged 007:0335; -; merchant ships, bulkheads: stability, fringed condition 020:0159, -; bulkheads, watertight steel 025:0227; -; - 036:0033; -; regulations: history 043:0025, -; merchant ships: sheltered vessels: decks, watertight 059:0039; -; passenger ships 079:0043.
- Subject Index:** NECIES, BT: Index: NECIES, NT: <specific subjects> e.g. Ships, RT: Subjects.
- Subjects,** USE: <specific subjects> e.g. Ships, RT: Names, RT: Subject Index: NECIES.
- Submarine cargo ships,** USE: Cargo ships, USE: Submarines.
- Submarines:** general, RT: Ships, RT: Cylinders, RT: Diving, RT: Submersibles, RT: Warships, -; nuclear powered cargo ships: ship design, performance 075:0461; -; closed cycle diesel engines 080:0067.
- Submarines:** anti-submarine defence, -; bulkheads: bulges 050:0301; -; dazzle painting: ships 035:0237; -; accuracy: surface 025:0350, -; merchant ships: bulges 038:0157.
- Submerged foil craft,** USE: High speed craft.
- Submersibles,** BT: Diving, BT: Ships, RT: Semi-submersible vessels, RT: Submarines, -; deep-diving: bathyscaches, Alvin: Trieste: fuel cells: nuclear power, oceanographic: design 085:0073; -; offshore structures: maintenance & transport 090:0090, -; offshore engineering: seabed surveying 093:0081, -; GRP: ship design 095:0049; -; deep-diving: Shinko, 2000 00:0155.
- Suhadins:** shipbuilding, USE: Economics, USE: Government, USE: Shipbuilding.
- Suction gas engines,** USE: Gas engines.
- Suez Canal,** USE: Egypt, USE: Inland waterways.
- Sulbiker (HMS),** fisheries protection vessel, USE: Fishing vessels, USE: Warships.
- Sulphur dioxide,** BT: Gases, -; firefighting: ships 019:0033.
- Sulzer diesel engines,** USE: Diesel engines.
- Summer meetings:** NECIES, USE: Meetings: NECIES.
- Sunderland (port):** general, BT: Ports, BT: Wear (river) & Weirside (region), -; Bo: Lou (ships yard): design 095:0093.
- Sunderland (port):** meetings: NECIES, -; 014:0199, -; 015:0067, -; 016:0043; -; 017:0044, -; 017:0217, -; 018:0051, -; 018:0311; -; 019:0061; -; 019:0280; -; 025:0047, -; 026:0187.
- Super atmospheric oil engines,** USE: Oil engines.
- Superchargers,** USE: Diesel engines.
- Superconducting motors,** BT: Generators, -; de propulsion machines: ships 092:0111, -; generators & transmission: land & ships 045:0075.
- Superheaters,** BT: Boilers, BT: Engines, -; steam recip engines: ships 027:0199; -; internal combustion engines: Presidential addr 032:0025; -; ships 056:0097, -; mounting: creep: steam turbines: ships 060:0027.
- Superstructures:** ships: general, BT: Ships, RT: Hulls, RT: Wind resistance, -; structural design: large cargo ships 019:0089; - & hull: vibration: passenger ships 064:0092, - & hull: vibration: data analysis: graphics 073:0321; -; structural strength 078:0141.
- Superstructures:** ships: aluminum, -; economics: cargo ships, structural design 060:0101; -; structural design 062:0329; -; structural strength 065:0115; -; Sugganoye (passenger ship) 073:0111; -; passenger ships 077:0321.
- Supply vessels,** USE: Offshore vessels.
- Supply & demand,** USE: Economics, USE: Marketing, USE: Trade.
- Support ships,** BT: Service ships.
- Surface effect ships,** BT: Air cushion vehicles, BT: High speed craft -; vs specific prop.
- Surface preparation,** BT: Metalworking, RT: Coatings, -; engines: ships 056:0194; -; plates: quality control: vibration 078:0277, -; corrosion: coatings: steel ships 088:0117.
- Surface protection,** USE: Coatings.
- Surveying:** general, BT: Monitoring, NT: Inspection, RT: Reliability, RT: Surveyors, -; geology: seabeds: offshore engineering: submersibles 093:0093.
- Surveying:** ships, RT: Classification, RT: Regulations - & classification 016:0013, -; reports: NECIES: LR 023:0112; -; classification societies: IMCO, Lamp: Lee: 096:0031; -; 101:0033.

SECTION 4: SUBJECT INDEX.

Surveyors: ships. BT: Personnel. RT: Surveying. -- reports
NECIES classification 015 0259. -- 104 007A.

Survival craft & systems. USE: Lifesaving craft & appliances.

SWATH vessels. SN: = small water-plane twin-hulled ships. BT:
High speed craft. BT: Multi-hull vessels -- stabilising devices
100 0001.

Sweating: cargoes. USE: Cargo. USE: HVAC

Swimming: animals. BT: Animals. BT: Propulsion -- aquatic
hydromechanics: Blackadder Lect 093.0127.

Symposium. USE: Conferences.

Synchrolift. USE: Decks.

Synthesis. USE: Design.

Systematic series. USE: Model tests. USE: Propellers.

Systems analysis. BT: Analysis. -- ship design & production
087.0004

Systems engineering. RT: Optimisation. -- project planning:
warships: ship design 088.0009; -- machinery: marine
engineering 090.0031; -- outfitting: ships 052.X003.

Tailshafts. USE: Propellers shafting

Tank steamships. USE: Tankers

Tank tests. USE: Model tests

Tankers. SN: oil tankers. BT: Liquid bulk carriers. BT: Oil.
NT: Chemical carriers. RT: Double bottoms. RT: Fuel oil.
RT: Large ships. RT: Combination carriers. RT: Tanks -- fuel
oil: combustion & transport 013.0027. -- structural strength
005 0027. -- ship design & shipbuilding 046 0417. -- corrosion
047 0093. -- ship design: welded: Post D Campbell
(Great Lakes oil tanker) 050.0087; -- emergency operations
051.0323. -- ship design: history 051.0393; -- structural
design 059.0169. -- auxiliary equipment & propulsion
machinery: steam recip engines 061 0263. -- design &
strength: welding: Phoenix 062.0053; -- riveting vs welding
structural strength: Nevada & Newcombe 063.0253; -- ship
grating: slipstreaming: WW II 064 0059. -- ship design: stability.
capac. 065 0193. -- structural design: connected plates
bulkheads: Stalard (oil) 066.0232; -- naval: refuelling at sea
068.0133; -- frames: stress: Hardy Cross method: structural
design 069 0167. -- corrosion & fouling: paints: economic
performance 069.0289; -- structural design: classification
070.0045. -- attaching: structural strength 070.0253. -- shaft-
ing: alignment: diesel engines 070.0343; -- tubular: protection
cargo spaces: corrosion: Axis 070.0577. -- single screw: per-
formance: ship-model correlation 070 0475. -- hull form:
model tests: resistance & propulsion 072.0279. -- large: ship
design: standardisation 074.0101; -- oil: recovery from sludge:
Vesta 074.0271. -- longitudinal strength: 075.0039; -- gear:
design: manufacture 075.0139. -- hull form: trials 075.0565; --
propulsion & auxiliary machinery 076.0021; -- balancing:
dynamics 076.0131; -- model tests: wind resistance 076.0279;
-- performance: fuel economy 076.5061. -- Axis: of distribu-
tion 077.0407; -- Axis: & slips: gas turbines: dynamic
transmission 077.0427; -- longitudinal strength: bulkheads:
grillages 079.0137; -- propeller shafting: (a) gas: mode: tests in
air 079 0189; -- propeller: cavitation: model tests 079.0295.
-- longitudinal strength: steel: corrosion 081 0241. -- auxiliary
naval vessels: machinery 082 0059; -- diesel: engines 082.0168.
-- very large: propellers 083 X004; -- marks: forecasts: ship
building 085.0059; -- large: structural strength: 086.0002; --
ship design: structural analysis: finite elements 087 X005. --
large: shipbuilding: future trends 088 X006. -- shipbuilding:
economic: oil industry: Blackadder Lect 089.0090; -- safety:
routing: navigation: hydrodynamics: English Channel
089.0131; -- V.L.C.C.: U.L.C.C.: structural analysis 090.0133. --
gas venting: safety 090.0165; -- permeability: condition: manu-
facturing 091.0155; -- Shin Aizuri: Man. (oil-assisted tanker)
098.0075; -- balancing: controllability 102.0137. -- Göttscheff
(1885) & others: history 103.0072

Tanks. BT: Cargo handling equipment. BT: Hulls. RT: Ballast-
ing. RT: Cargo. RT: Fuel. RT: Gas. RT: Liquefied gas car-
riers. RT: Oil. RT: Tankers. -- corrosion: tankers: ships
047.0093; -- cylindrical: structural strength: phosphate carriers
087 0013; -- oil & gas: offshore engineering: N Sea 090.X004;
-- LNG: structural design: ships 096.0197.

Tchobrycheff formula. USE: Stability

Teaching. USE: Education & training.

Technical papers NECIES. USE: Publications NECIES

Technician engineers. USE: Education & training. BT: Person-
nel.

Techno-economics. RT: Economics. -- propulsion machinery:
future trends 097 0351; -- maintenance: ships 100.0011.

Technology. USE: Engineering

Tees (river) & Teesside (region). RT: North East England. NT:
Hartlepool's (port). NT: Middlesbrough (port). NT: Sunderland
(port)

Telecommunications: general. BT: Communication. BT: Electro-
nic & electronic equipment & machinery. RT: Computers. --
telephones 028.0072.

Telecommunication: ships. -- telegraphing & signalling
009.0249. -- radio 030 0259. -- 035 0386. -- direction
finding 044.0257. -- Loring Lect 105.0051

Telegraphs & telephones. USE: Telecommunication.

Telescopes: astronomy. USE: Astronomy.

Temperature. BT: Heat. RT: Measurement. -- thermocouples:
propulsion machinery: ships 035.0215.

Tendering: shipbuilding. USE: Economics. USE: Estimating.
USE: Shipbuilding.

Tension leg platforms. USE: Offshore drilling rigs

Terminals. USE: Cargo handling equipment. USE: Ports.

Test tanks. USE: Model tests.

Testing. BT: Engineering. NT: Model tests. NT: Radiography.
NT: Trials. RT: Construction. RT: Materials. RT: Research.
RT: Structural strength. -- materials: structural strength
005 0101; -- welds 058 0206; -- non-destructive: materials:
corrosion 069.0225. -- non-destructive: tonnage: ships
076 0363; -- environmental: marine equipment: computers
107 0149.

Theory. USE: separate subjects e.g. hydrodynamics. USE:
Research

Thermal effects & efficiency: <engines>. USE: <engine type>.

Thermal properties: materials. USE: Materials. USE: Metal-
lurgy. USE: Structural strength

Thermocouples. BT: Electrical equipment & machinery. -- pro-
pulsion machinery: ship 036.0216. -- 051 0103

Thermodynamics. BT: Science. RT: Engines. RT: Heat. --
steam turbines: design: heat diagrams 026.0301; -- history:
Loring Lect 065.0165. -- engines: future trends: Loring Lect
084.0071

Thrust collars. USE: Steam turbines

Thrusters. BT: Manoeuvring devices. BT: Propellers. RT: Noz-
zles. -- bow: shafts: manoeuvring devices 088.0051

Tugger (ship). USE: Cargo ships. BT: Steamships.

Timber. USE: Forest products. USE: Wood: uses.

Time. USE: Obsolescence. USE: History.

Tire & motion studies. USE: Management

Tip clearance: blades. USE: Compressors. USE: Propellers.
USE: Steam turbines.

TLPs. SN: = Tension leg platforms. USE: Offshore drilling rigs.

Tonnage measurement: ships. RT: Regulations -- 008.0105

Tools. SN: equipment. NT: Machine tools.

Torsion meters. BT: Instruments. RT: Powering. RT: Shafting.
-- powering: steam turbines: shafts 024.0151.

Towing tanks. USE: Model tests. RT: Towing.

Towing: ships. RT: Operations. RT: Docks: floating. RT: Fish-
ing vessels. RT: Towing tanks. RT: Tugs. -- trawlers & tugs:
propellers 034.0065; -- marine structures: man-made fibre
ropes 101.0183

SECTION 4: SUBJECT INDEX

- Towns.** BT: Geographic regions. NT: Consett. NT: Leeds. NT: Newcastle upon Tyne. NT: Ports (towns which are ports). NT: Sheffield. NT: Wallsend.
- Trade.** BT: International relations. RT: Cargo. RT: Economics. RT: Employment. RT: Marketing. RT: Merchant ships. RT: Production. RT: Transport. < economics: British Empire 033-0203. < merchant ships: shipbuilding: economics 027-0152. < economics: design: standardisation 038-0477. < ship design: standardisation 043-0269. < Presidential Addr 044-0629. < steel & materials: Great Britain vs foreign: economics 047-0385. < scrap & shipbuilding: Presidential Addr 052-0019. < awards: NECTES: Her Fellowship 054-0415. < Presidential Addr 055-0018. < < 060-0017. < shipbuilding: economics 094-0001.
- Trade unions: education & training.** BT: Organisations. RT: Employment. RT: Industrial relations. < industrial relations 059-0027. < technician: engineers 104-0129
- Traditions.** USE: History
- Trade ferries.** BT: Ferries. BT: Railways. < shipbuilding: inland waterways: vessel: Baked Oak, Russia 026-0181. < ship design: Steam in test USA 046-0179
- Training.** USE: Education & training
- Trains.** USE: Locomotives. USE: Railways.
- Trampships.** BT: Merchant ships. RT: Cargo ships. < ballast: ing: water: stability 018-0051. < performance 042-0261. < ocean-going: shipowners 047-0061. < shipowners: ship design: economics: operators 050-0071.
- Transactions.** NECTES. USE: Publications: NECTES
- Transmission systems.** BT: Machines. NT: Bearings. NT: Gears. NT: Shafting. RT: Marine engineering. RT: Power generators. < machinery: hydraulic: riveting & others 002-0091. < gear: workshops 003-0290. < wave power: machinery: mechanics 009-0052. < mechanical & electrical: future trends 042-0111. < performance: engines: sailing: pleasure ships 045-0261. < electrical & mechanical 057-0027. < hydraulic: ships: history 092-0285. < hydraulic: gas turbines: ships & Airs (tanker) 097-0127
- Transmission systems: electrical.** USE: Electrical: equipment & machinery.
- Transocean No2 (jack up rig).** USE: Offshore: drilling rigs.
- Transport.** BT: World. NT: Aircraft. NT: Railways. NT: Road transport. NT: Shipping. NT: Vehicles. RT: Cargo. RT: Structures. RT: Trade
- Transverse frames: ships.** USE: Frames
- Transverse sections: ships.** USE: Structure: strength.
- Transverse stability: ships.** USE: Stability.
- Transverse strength: ships.** USE: Structure: strength.
- Traveling Scholarships.** NECTES. USE: Awards: NECTES
- Trawlers.** USE: Fishing: vessels
- Trees.** USE: Forest: products.
- Trenching: pipelaying.** USE: Pipelaying.
- Trials: general.** BT: Testing. RT: Construction. RT: Model tests. RT: Operations. RT: Performance. < launching: conference: floating: harbours 061-0345. < Xairne (west coast): test: container: hull 097-0125
- Trials: propellers.** < performance 064-0321. < & model tests: 3 Blade 056-0091. < & model tests: blades: vibration 052-0249. < container: workshops 065-0339. < H shaped: series 067-0089. < cavitation: photography 068-0019.
- Trials: ships.** BT: Commissioning. BT: Full scale tests. < performance 001-0021. < cargo ships: performance: coal design: economics: full form 054-0065. < construction: machinery: performance: Ouka (sic) 026-0151. < powering: steamships 033-0243. < merchant ships: performance: data analysis 043-0065. < & land: steam turbines 042-0155. < powering: oil engines 044-0285. < full form: Arzform: performance 040-0269. < merchant ships: manoeuvring: propulsion 055-0177. < Rhos: barges: ship model correlation 070-0279. < tankers: ship model correlation 070-0475. < steam turbines: workshops 075-0179. < Cairmont (cargo ship): performance: N Atlantic 074-0115. < passenger ships & tankers: full form 075-0165. < model tests: performance: data analysis: conference 076-0063. < manoeuvring & turning 076-0079. < sister ships: ship model correlation 078-0418. < towing vessels: reeving: performance 081-0037. < < 083-0013. < performance: data analysis 084-0047. < ship model correlation: boundary layer: resistance 090-0051. < equipment: marine: computers 104-0149.
- Trials: ships: measured mile.** < propulsion 025-0470. < < 042-0051. < 045-0253. < 066-0019. < ship model correlation 075-0645. < < 076-0165
- Trieste (submersible).** USE: Submersibles.
- Triggers: launching.** USE: Launching.
- Trim curves.** USE: Hydrostatics
- Triple expansion steam recip engines.** USE: Steam: reciprocating engines. RT: Compound engines
- Tubes.** USE: Boilers. USE: Condensers. BT: Structural members.
- Tugs.** BT: Service vessels. NT: Top-hull combinations. RT: Towing. < steam recip engines: triple exp high pressure: Barneo 044-0083. < < high pressure: Barneo 045-0055. < Express (paddle tug): machinery: history 052-0087. < propulsion: towing 054-0565
- Tug-barge combinations.** BT: Barges. BT: Merchant ships. BT: Tugs. RT: Barge carriers. RT: Multi-modal vessels. < tug: ship design 092-0025. < culture: NE England 101-0105
- Turbines.** BT: Engines. NT: Air turbines. NT: Gas turbines. NT: Steam turbines. NT: Water turbines. NT: Wind turbines. < history: Parsons: Lect 069-0133. < instrumentation: merchant ships 071-0051. < wave energy devices 097-0135
- Turbine (steam turbine high speed craft).** USE: High speed craft. USE: Steam turbines
- Turbochargers.** USE: Diesel engines
- Turbopropeller propulsion.** BT: Propulsion: machinery. < passenger ships: air-powered 042-0249. < exhaust steam cycle: Bower (cargo ship) 063-0071.
- Turboprops.** BT: Gears. < steam vs diesel engine: ships 078-0242.
- Turning: ships.** USE: Manoeuvring.
- Turret deck cargo ships.** USE: Cargo ships.
- Twin-screw ships.** BT: Propellers. RT: Propulsion: machinery. < models: manoeuvring: model tests 049-0067
- Two-cycle internal combustion engines.** USE: Internal combustion engines.
- Two-stage diesel engines.** USE: Diesel engines
- Two-stroke diesel engines.** USE: Diesel engines.
- Two-stroke heavy oil engines.** USE: Oil engines.
- Tyne Coal Terminal.** USE: Terminals
- Tyne (river) & Tyne-side (tributary).** SN: see also Scoops Nets under North East England. BT: Inland waterways. BT: North East England. NT: Newcastle near Tyne. NT: South Shields. NT: Walsend (town). < river engineering 088-0291. < canals: Salford: Fish 026-0351. < Presidential Addr 055-0018. < docks: graving 072-0229. < shipyards: reorganisation: conferences: NECTES 077-0073 & other pprr. < docks: ports: shipyards: marina relations 092-0077. < conversions: shiprepairing: ships 057-0019. < coal terminals 102-0087. < factory: marine engine builders 103-0067. < marine engineering: history 105-0007
- Type 42 destroyer.** USE: Warships

SECTION 4. SUBJECT INDEX.

- Underground engineering. USE: Mining. USE: Railways; under ground.
- Underwater engineering. USE: Offshore engineering.
- Underwater vehicles. USE: Submarines. USE: Submersibles.
- Underwater <subjects>. USE: ₋
- United Kingdom. USE: Great Britain.
- United Nations Conference on the Law of the Sea - UNCLOS. USE: Regulations.
- United States of America. USE: USA.
- United States (as passenger ship). RT USA. USE: Passenger ships.
- Units of measurement. USE: Standardisation.
- Universe. NT: World. RT: Astronomy.
- Universities. USE: Education & training. USE: Research. BT: Organisations.
- Unsinkability: ships. USE: Stability. damaged. USE: Subdivision.
- Upper works; ships. USE: Superstructures.
- USA (country). BT: North America. NT: Great Lakes. RT: United States (as passenger ship). - launching: S. Dakota (cruiser); San Francisco (port) 021:007; - shipbuilding 035:0151. - New Orleans - Havana (ports); Seairair (railcar carrier); ship design 046:0179. - maintenance & repair: naval vessels: floating docks: Pacific Ocean: WWII 057:0355. - shipbuilding: warships 101:0194
- USE index terms. USE: Index terms
- Validation: ship-model tests. USE: Model tests.
- Valves: steam. BT: Steam machinery. - high pressure ship 029:046.
- Vandal (electric propelled vessel). USE: Electric propulsion.
- Vardøfjell (tanker). USE: Tankers.
- Vehicles. USE: Aircraft. USE: Motorcars. USE: Railways. USE: Road transport. USE: Ships. BT: Structures. BT: Transport.
- Veneers: wood. USE: Coatings. USE: Forest products.
- Ventilation. USE: HVAC.
- Venting: tankers. USE: Gas venting. USE: Tankers.
- Vessels. USE: Ships.
- Vesilla (tanker). USE: Tankers.
- Vibration: general. BT: Dynamics. RT: Noise. RT: Springing. RT: Waves. - noise: insulation 048:0181. - internal combustion engines 052:0223. - materials: damping 056:0273. - metals 060:0227. - steam turbines: shunting: Parsons Lect 061:0111. - data analysis 064:0177. - experimental methods: design: engineering 065:0029. - gas turbines: research: lab: arc: air propulsion 065:0085. - forge hammers: rubber: insulation 066:0155. - steam turbines 079:0051. - boilers: tubes: heat exchangers: aerodynamics 092:0091
- Vibration: propellers. - sailing 054:0159. - blades 054:0301. - - 057:0043. - blades: model tests & trials 062:0249. - blades: model tests 065:0273. - sailing 065:0301. - 071:0291. - external water effects 078:0325. - air: flow: airfoil: form: resistance 065:0197
- Vibration: ships. - classification 010:0287. - steam recip engines: high speed 012:0059. - - 012:0141. - - balancing: powering 019:0131. - gears 019:0143. - 044:0143. - ship design 048:0065. - 049:0159. - structural analysis 051:0259. - machinery: marine engineering 055:0127. - engines 057:0207. - damping: materials: decks: ships 058:0207. - & passenger ships: hulls & superstructures 064:0355. - steam turbines: geared 065:0225. - electronic: research 067:0155. - welded: & riveted: dry cargo ships 067:0205. - Ocean Vulcan (cargo ship): structural analysis 068:0051. - tankers: transverse: reliability 068:0313. - colliers: vibration: shallow water effects 073:0195. - hulls & superstructures: data analysis: graphics 073:0331. - longitudinal strength: computer: ship design 077:0053. - shunting: diesel engines: computer: aided design 079:0265. - merchant: ships 080:0061. - Minera Sevaug (ore carrier) 080:0069. - & steering: damping
- 087:0083. - air ends 087:0117. - containers: ships: springing 090:0039. - model tests 091:0025. - ballasting: reduced draft 093:0097. - rudder: ship design 095:0177. - structural design 098:0049. - engine: excited hull 103:0059. - cargo: ships: finite elements 107:0133
- Vickers internal combustion engines. USE: Diesel engines.
- Victory meeting. NECIES. USE: Meetings. NECIES.
- Victory models. USE: Model tests.
- Vikingen (whaling factory ship). USE: Fishing vessels.
- Viscous drag. USE: Drag.
- Visits. NECIES: general. BT: NECIES. - exhibition: Nile 003:0279. - engineering works & docks: Harlow's 005:0061. - marine engine works: Harlow's 014:0069. - - 015:0078
- Visits. NECIES: foundries. - Consult 003:0279. - Spennyinar 007:0440. - Sheffield 006:0301. - Leeds 006:0399. - Consult: 010:0327. - Midlethrough 017:0241.
- Visits. NECIES: shipyards. - 003:0279. - Harlow's 005:0061. - - 015:0161. - Wallsend 017:0301.
- VLOCs. SN: - Very large crude carriers. USE: Tankers.
- VME diesel engines. USE: Diesel engines.
- Vortex shedding. BT: Fluid mechanics. RT: Wake. - chimney: stacks: wind loads 096:0189
- Voyage performance. USE: Performance: ships.
- Vulcan oil clutch. USE: Clutches.
- Wake: ships. BT: Resistance. RT: Production. RT: Vortex shedding. - & resistance: model tests 046:0083. - 050:0020. - 051:0303. - resistance: powering 052:0179. - propellers 054:0251. - propellers: transverse: resistance: model tests 054:0349. - & resistance 064:0273. - model tests: scale effects 069:0245. - ship-model: simulation: other ships 078:0418. - model tests: wave-making: resistance 089:0025. - propellers: design: optimisation 100:0084
- Wake. RT: Great Britain. NT: Cardiff.
- Walker wingsails. USE: Sailing vessels.
- Wallsend (town). BT: Tyne (river) & Tyneside (region). - shipyards: visit. NECIES 017:0301
- Wars. BT: World. RT: Naval vessels. RT: Weapons.
- Wars: World War I. - Presidential Addr 031:0002. - aircraft 031:0059. - - 032:0005. - women in engineering & ship building 035:0227. - dazzle painting: ships: anti-submarine 035:0237. - warplanes: design 045:0268. - shiprepairing: NE England 035:0349. - NE England: industry: shipbuilding & repairing: marine engineering: weapons 035:0479. - Victory Meeting. NECIES 035:0526. - ships: defence: budgets: anti-submarine 038:0157.
- Wars: World War II. BT: Wars. - shipping: Presidential Addr 056:0023. - merchant: ships: N America: Great Britain: shipbuilding 059:0061. - engineering: production: standardisation 059:0113. - shipping: shipbuilding: Presidential Addr 060:0107. - shipbuilding: naval: floating docks: steel & concrete 063:0103. - shiprepairing: Great Britain 063:0195. - shiprepairing: conversion 064:0059. - merchant: ships: resistance & propulsion: model tests 064:0289. - naval vessels: USA: floating docks: shunting & maintenance: Pacific Ocean 065:0255.
- Warships. RT: Naval vessels. - steel: shipbuilding 003:0251. - gun: water-tower: rolling motion 005:0100. - steam: recip engines 008:0069. - boilers: operations: Good Hope (HMS cruiser) 026:0201. - South Dakota (USS), cruiser: launching 021:0077. - shipbuilding: Clyde (river): factory 026:0109. - Greenhow's: Presidential Addr 027:0017. - Presidential Addr 028:0018. - hulls: ships: ship design: anti-submarine: defence 035:0331. - history: Sir W G Armstrong: Whitworth & Co Ltd 030:0377. - longitudinal strength: Wolf (HMS destroyer) 041:0122. - destroyers: hull form 049:0172. - destroyers: ship design 051:0055. - structural design: Laing Lect 061:0027. - drydocking: floating docks: steel & concrete

SECTION 4: SUBJECT INDEX.

- 065-9103; -; Turbina & MGB 2099 gun boats gas turbines 065-9117; -; propellers, cavitation: trials: model tests 065-9339; - structural analysis: girders: Navier expression 065-9951; - ship design: nuclear weapons 073-0021; - trials: steam turbine 073-0179; - steel bridle fracture shipbuilding 073-9901; - non-metallic materials: suitability 076-0267; - machinery: maintenance & repair 082-0229; - & merchant ships: shipbuilding: quality control 087-0019; -; non-wetproof: fibre composite materials 090-0151; -; ship design: Parsons Lect 092-0031; -; Type 42 destroyers: automation 094-0143; -; gas & steam turbines: Blackadder Lect 099-0051; -; history: professional societies 100-0035; -; shipbuilding: USA 101-9199; -; seakeeping performance: Sulistker (JMS) fisheries protection vessel 102-0011; -; shipbuilding: Ark Royal & Illustrious (aircraft carriers) 132-0129; - shipbuilding: marketing: Great Britain vs world 102-X004; -; mine warfare: GRP vessels: shipbuilding 107-0159; -; frigates: ship design: backwardness 106-0117; -; shipbuilding: Great Britain: future trends 107-0067.
- Waste.** BT: Resources. -; Presidential Addr 041-0020
- Waste disposal.** USE: Pollution.
- Waste heat recovery.** BT: Power generators -; Sespole diesel engines: gas turbines: ships 094-0031; -; Seayole power stations 076-0225.
- Water.** BT: Fluids. NT: Ice. NT: Seawater. NT: Steam. NT: Swimming. RT: Corrosion. RT: HVAC. RT: Hydrodynamics. RT: Oceans & seas. RT: Waves. -; suspended in steam: boilers 099-0233; -; firefighting: ships 019-0033; -; boiling: fluid dynamics: steam machinery: pipes & nozzles 053-0065; -; saturated fluid dynamics: nozzles: steam generators 062-0031; -; enriched fuel: diesel engines: ships 096-0115; -; industry: future trends: Great Britain 108-0006
- Water ballasting:** ships. USE: Ballasting
- Water channels:** model tests. USE: Model tests.
- Water gauges:** boilers. USE: Boilers
- Water turbines.** BT: Turbines. -; Kaplan: power stations: hydroelectric 097-0085.
- Water waves.** USE: Waves
- Water-lubricated bearings.** USE: Bearings. USE: Lubrication.
- Waterpower.** USE: Power stations, hydroelectric
- Watertube boilers.** USE: Boilers.
- Wave-drift, ships.** BT: Wave loads. - 033-0015
- Wave energy devices.** BT: Power generators. RT: Buoy. -; Kaimoraby trials 067-0035.
- Wave loads.** BT: Environmental loads. BT: Waves. NT: Wave drift. -; ships: structural design 093-X006.
- Wave motors.** BT: Power generators. RT: Waves. -; washup gear: rolling customs 025-0105
- Wavemaking resistance:** ships. BT: Resistance. BT: Waves. -; critical speeds: ships 041-0053; - 042-0071; - 047-0153; -; high speed craft: supersonic hulls 060-0047; -; skin friction: correlation 067-0045; -; longitudinal weight distribution: performance 079-0155; -; model tests 089-0075; - 091-0015; -; edited 100-X008
- Waves.** SN, except of water waves. BT: Mechanics. NT: Wavemaking resistance. RT: Fluid dynamics. RT: Oceans & seas. RT: Slamming. RT: Vibration. RT: Water. RT: Wave subjects. RT: Wind. -; power transmission: rot. water waves: machinery 099-0022.
- Weapons.** BT: Equipment. RT: Naval engineering. RT: Naval vessels. RT: Wars. -; pure hydraulic machinery: warships 003-0299; -; warships: gun wash: motor: rolling 005-0105; -; projectiles & gunpowder: history 026-0023; -; gun control: detonation 030-0189; -; propellants & explosives: inertial ballistics 034-0367; -; industry: NE England: WW 1 035-0479; -; missiles: guided: radar: navy: vessels 076-0079.
- Wear (river) & Wearside (region).** BT: Inland waterways. RT: North East England. NT: Sunderland. -; shipbuilding: history 103-0071.
- Wear.** RT: Friction. RT: Lubrication. RT: Maintenance. RT: Repairing. -; steam turbines: thrust collect: cavitation: oil: lubrication: ships 081-0020.
- Weather: ships.** BT: Environment. NT: Cold regions. NT: Wind. RT: Geographic regions. RT: Ice. RT: Operations. RT: Routing. -; winter N Atlantic: performance: structural strength: cargo ships 046-0107; -; rough damage: seakeeping: slamming 051-0101; -; rough performance: propulsion 053-0055; -; rough: structural strength: San Francisco (merchant ships) 054-0119; -; rough: propellers: performance 054-0327; -; performance: single screw: hull form 057-0133; -; cold: rough 068-0175.
- Weight saving.** USE: Structural design.
- Weights & measures.** USE: Standardisation
- Weld radiography.** USE: Radiography. USE: Welding
- Welded ships.** BT: Ships. RT: Welding. -; Peter G Campbell (Great Lakes tank barge): ship design: shipbuilding 050-0081; -; ship design: merchant ships 055-0313; -; Phoenix (tanker): ship design 052-0035; -; vs riveting: structural strength: Newarthia & Nevada (tankers) 053-0237; -; vs riveted: dry cargo ships: structural strength: vibration 067-0205.
- Welding.** SN: usually electric. BT: Metalworking. NT: Welded ships. RT: Electrical equipment & machinery. RT: Lasers. RT: Plasma gas. RT: Radiography. RT: Riveting. -; boilers & machinery: maintenance & repair 011-0165; -; oxy-acetylene: structural strength 030-0526; -; hot plates: residual stress 053-0225; -; Presidential Addr 057-0017; -; testing 058-0205; -; radiography 060-0310; - 060-0314; -; structural strength: steel cleavage 073-0087; -; boilers: corrosion: ships 076-0095; -; mild steel: boilers: ships 076-0095; -; shafting: fatigue: repairing: ships 077-0293.
- Welding ship design.** -; Peter G Campbell (Great Lakes tank barge) 050-0083; -; merchant ships 055-0319; -; structural design: Macretaria (passenger ship): Long Lee 056-0043; -; vs riveting: double bonnet: structural strength 077-0145.
- Welding: shipbuilding.** -; electric 033-0048; -; Peter G Campbell (Great Lakes tank barge) 050-0083; -; structural strength 052-0081; - 055-0245; -; merchant ships 060-0159; -; mechanical machinery 067-0179; -; uses 099-0136; - 101-0127; -; automation: computer aided manufacture 100-0123; -; uses 104-0063.
- Well-deck cargo ships.** USE: Cargo ships.
- WENT (conference).** USE: Conferences. NECIES. WEMT
- Workshop internal combustion engines.** USE: Internal combustion engines.
- Workshop Lugt diesel engines.** USE: Diesel engines
- West European Conference on Marine Techn.** USE: Conferences. NECIES. WEMT
- West Hartlepool (port).** USE: Hartlepool (port).
- Wet steam turbines.** USE: Steam turbines
- Whale factory ships.** USE: Fishing vessels.
- WHR.** USE: Waste heat recovery.
- Winches.** USE: Auxiliary machinery. USE: Lifting machinery.
- Wind.** BT: Weather. NT: Wind subjects. RT: Aerodynamics. RT: Waves.
- Wind assisted ships.** USE: Sail assisted ships
- Wind loads.** BT: Environmental loads. -; buffeting: chimney stacks 046-0189; -; hull form: performance: manoeuvring 067-0173
- Wind propulsion:** ships. USE: Sailing vessels.
- Wind resistance:** ships. RT: Resistance. RT: Superstructures. -; experimental methods 421-0105; -; model tests: merchant ships: tankers: passenger ships 076-0229
- Wind tunnels.** USE: Model tests. RT: Aerodynamics.
- Windlasses:** ships. USE: Auxiliary machinery
- Wingsails.** USE: Sailing vessels.
- Winter weather.** USE: Weather
- Wireless.** USE: Radio.

SECTION 4: SUBJECT INDEX.

Wires. USE: Ropes, wires, & cordage.
Wolf (HMS, destroyer). USE: Warships.
Women. RT: Personnel - in engineering & shipbuilding; WW I 035:0227.
Wood. USE: Forest products.
Wind gas producer engines. USE: Gas engines.
Wooden ships. BT: Ships. RT: Yachts. -; no specific pp.
Woodworking. USE: Joinery.
Work study. USE: Management.
Working conditions & practice. USE: Education & training. USE: Operations. USE: Trade unions.
Works & workshops. USE: Engineering works.
World. SN the following broad subheadings are used. BT: Universe. NT: Animals. NT: Communications. NT: Economics. NT: Education & training. NT: Engineering. NT: Environment. NT: Fishing. NF: Future trends. NF: Geographic regions. NT: History. NT: Industry. NT: International relations. NT: Management. NT: Mechanics. NT: Names. NT: Organisations. NT: Pollution. NT: Research. NT: Safety. NT: Science. NT: Structures. NT: Transport. NT: Wars. NF: <specific subjects> e.g. Liquefied gas carriers e.g. Shipbuilding.
World Wars. USE: Wars.
Wuppertal (electric propelled vessel). USE: Electric propulsion.
WW I and WW II. USE: Wars: World War I. USE: Wars: World War II.

Xylonite. USE: Plastics.
X-rays. USE: Radiography

Yachts. BT: Small craft. RT: Sailing vessels. RT: Wooden vessels. -; racing ship design 002:0217. -; motor: Clyde (river) 043:0281. -; high speed sailing. Hydrofoil vessels; racing 096:0625. -; international 12m class racing 096:0626. 097:0149.

Youths. USE: Education & training. RT: Personnel

Zeebrugge (port). USE: Belgium. USE: Ports.