

**STANDARDS FOR THE
PREPARATION AND PUBLICATION OF SSC
TECHNICAL REPORTS**



**Ship
Structure
Committee**

OCTOBER 2000

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1. PURPOSE. This document established standards for scientific and technical reports prepared by or for the Ship Structure Committee (SSC). The application of these standards aids in the interchange of scientific and technical information and in the reduction of costs in the preparation, publication, and dissemination of such information. This document is reviewed periodically by the SSC Executive Group to ensure its compatibility with their requirements and conformance to national documentation standards.
2. DEFINITIONS.
 - a. Sponsoring Agency. The Ship Structure Committee or member organization having program responsibility for the scientific or technical effort.
 - b. Performing Organization. The SSC agency member (either headquarters, field, or laboratory), contractor, grantee or recipient of SSC R&D funds reporting specific scientific or technical research findings which result from investigations, demonstrations, tests, or experiments.
 - c. Draft Final Report. A report issued during the course of a project, or a major part thereof, to reflect completion of the research phase of a project assignment. Draft final reports should be prepared per this specification. Where sections are incomplete, a note should be made by the author as to that fact.
 - d. Final Report. A report issued at the completion of a project, or a major portion thereof, to signify the accomplishment and formal "close-out" of a project.
3. REQUIREMENTS. SSC-sponsored reports shall conform to the requirements of this document and the implementing instructions of the sponsoring organization.
4. LEGAL CONSIDERATIONS. The Government may be subject to liability for misuse of the literary or intellectual property (patents, trademarks, "proprietary information") of others. To ensure that technical reports can receive the widest possible dissemination, report writers and editors should observe the following guidelines:
 - a. Copyright. No copyrighted material may be incorporated into a report unless written permission of the copyright owner has been obtained. Prior use of copyrighted material in another Government publication does not necessarily constitute permission to use it in an SSC publication. Where permission has been obtained and the material issued in a report, it shall be identified by a statement substantially as follows:

Reprinted from (title of publication) by (name of author) by permission of (name of copyright owner). Year of first publication _____.
 - b. Courtesy requires that acknowledgment or credit is given (by footnote, bibliographic reference, or a statement in the text) for the use of the material contributed or assistance rendered by someone else though no copyright notice is involved.

- c. Unpublished work may be protected under common law or equity even though there is no copyright notice. Problems relating to the protection given to unpublished work will be referred to the Office of the General Counsel.
- d. Privately Owned Information. To avoid restriction on availability of reports, every effort should be made to avoid the use of proprietary information accepted by the Government for limited purposes. Such proprietary information will be used only if it is essential to the understanding of a report and only after approval by the Project Technical Committee (PTC). Reports containing such proprietary information will bear a statement restricting availability and handling, as required (paragraph 7b).
- e. Data Use Restriction. In the event that the Contractor furnishes any information or data which the Contractor considers to be proprietary under the terms of the contract, the Contractor shall affix the following use restriction legend to such proprietary data, shall mark such data with the number of the prime contract, and subcontract, if applicable; and shall deliver such proprietary data directly to the Government. No other legend is authorized and the Government will thereafter treat the data in accordance with such legend.

DATA USE RESTRICTION

These data furnished under U.S. Government Contract No. _____ may be duplicated and used by the Government with the express limitations that the data may not be disclosed outside the Government, nor be used for purposes of manufacture, without prior permission of the contractor. These restrictions do not limit the Government's rights to use or disclose any data obtained from another source without restriction. This legend shall be marked on any reproduction of these data in whole or in part.

- f. Trademarks. The term "trademark" includes any word, name, symbol, device or any combination thereof, adopted and used by a manufacturer or merchant to identify his goods and distinguish them from those manufactured and/or sold by others. It is improper to use a "trademark" to identify goods not manufactured or sold by the owner of a trademark or his licensee. In general, the use of trademarks is discouraged. Where feasible, goods should be identified by a type designation or a structural feature that distinguishes them from other goods.
- g. Trade Names and Manufacturer's Names.
 - (1) Under Section 522 of Title 5, United States Code, as implemented by DOT Public Affairs Management Manual, DOT Order 1210.5, 2-6-74, reports which once were not available to the public, may be obtained by anyone who wants them. Particularly to be avoided is the appearance of endorsing or favoring a commercial product, commodity or service. Trade names or the names of manufacturers will not be given unless the report will not contain meaningful information without them.

- (2) When trade names or manufacturers names are used in a report, this fact will be specifically brought to the attention of the reviewing office before the report is approved. Such reports shall contain the following notice on the Technical Report Documentation Page, Block 16.

NOTICE

The United States Government does not endorse products or manufacturers. Trade or manufacturer's names appear herein solely because they are considered essential to the object of this report.

- (3) DOT operating elements should first refer all legal considerations to their appropriate General Counsels before seeking legal advice at the departmental level.

5. FORMAT.

- a. Order of Elements. When some or all of the following elements are appropriate for a report, they will be included and the standard order will be as follows:

<u>Page #</u>	<u>Item</u>
	SSC Cover
	Inside Self-Cover (provided at printing by SSC)
i	Chairman SSC letter
ii	Blank page
iii	Technical Report Documentation Page
iv	Metric Conversion Factors (Figure 3)
v	Table of Contents, List of Illustrations, list of Tables, List of Abbreviations and Symbols
1-1	Introduction
	Main Text
	Conclusions
	Recommendations
A-1	Appendices
	Glossary
	References
	Bibliography
	Index
	Project Technical Committee
	Recent SSC Publications back cover

- b. Cover. The SSC will provide a cover page and SSC Report Number when the report is accepted for publication.

- c. SSC Membership List. The SSC will provide this list when the report is accepted for publication.
- d. Front Matter.
 - (1) SSC Chairman Letter. The SSC will provide a letter from the SSC Chairman to be inserted into the report printing. Assume this page and its back is numbered i. and ii.
 - (2) TECHNICAL REPORT DOCUMENTATION PAGE (DOT F 1700.7). Include one completed Technical Report Documentation Page as the second right-hand page after the cover. This page replaces the traditional front title page and abstract page. A completed example page is shown in Figure 1. Instructions for completing the documentation page are provided below. Adequate and accurate completion of this page will assist documentation of a report. The documentation page also may be distributed in lieu of copies of the published report. This form is attached at the back of this manual, Figure 2, for the contractor to reproduce for their use. The information presented on the documentation page is the basis for input on the SSC Internet web site and the National Technical Information Service (NTIS). The keywords should be selected from the existing ones in the SSC Bibliography; only create new keywords when absolutely necessary. This page is number iii.

Instructions for completing the Technical Report Documentation Page:

1. Leave blank. Assigned by the Executive Director SSC just prior to printing.
2. Leave blank. Assigned by NTIS just prior to printing.
3. Leave blank.
4. Use the Title of the contract as issued in the RFT, all uppercase. If you feel it is appropriate to change the title give the Executive Director a call. Please keep it short, if the title gets too long it won't fit on the cover or heel.
5. Final report date.
6. For your internal use.
7. Include those persons as you feel are appropriate. The bibliography will include the names you enter here.
8. Enter the project number that begins SR-xxxx.
9. Your company address.

10. Leave blank.
11. Enter the contract number, it often starts DTTCG23-...
12. Ship Structure Committee
U. S. Coast Guard (G-MSE/SSC)
2100 Second Street, SW
Washington, D.C. 20593-0001
13. Final Report
14. G-M
15. Sponsored by the Ship Structure Committee. Jointly funded by its member agencies.
16. Enter your abstract. Limit it to the area provided.
17. Enter key words. Try to use those found at the back of the bibliography of SSC Reports. Only create new keywords when absolutely necessary.
18. Distribution unlimited, available from:

National Technical Information Service
Springfield, VA 22161
(703) 487-4650
19. Unclassified.
20. Unclassified.
21. Leave blank.
22. Leave blank.

- (3) Metric Conversion Factors. Include a Metric Conversion Factors page (Figure 3) in the report to provide the reader with information for converting to metric measures. Additional units may be included as they apply to the contents of the report. The Metric Conversion Factors page may be copied from this document. Include the page on reverse side of Technical Report Documentation Page.
- (4) Table of Contents. In the Table of Contents list principal headings as they appear in the report with the page numbers on which the headings occur. Do not list items from the front matter. Start the Table of Contents on a right-hand page (v).

- (5) List of Illustrations. Furnish a list of illustrations only if it is essential. List figure number, legend, and page number of each illustration. Abbreviate lengthy legends.
- (6) List of Tables. Furnish a list of tables if applicable. List table number, caption, and page number of each table. Abbreviate lengthy captions.
- (7) List of Abbreviations and Symbols. Define symbols and abbreviations where first introduced in the text. When symbols and abbreviations are numerous, furnish a separate list with definitions. If a list is used, include organization symbols, e.g., IEEE, ANSI, etc.

NOTE: To save space, items (5) and (6) should follow on at the end of the Table of Contents. Do not present each of these on a new page.

e. Body of Report.

- (1) General. The contents and organization of the body of a report shall be determined by the nature of the work. However, limit the contents to that information required by the sponsoring organization to inform the reader. Eliminate unnecessary details and appendices. Start each chapter on a right-hand page (1-1, 2-1, etc.). This section usually provides work objectives and background information. End the body of the report with conclusions and recommendations, specifically recommendations for future research on the topic. Succeeding sections describe work procedures, apparatus involved, tests performed, results achieved, and related matters, as appropriate. Start new sections within chapters at the top of the next succeeding page, be it left or right-handed.
- (2) Headings. Headings shall stand out from the text with their relative importance apparent.
- (3) Numbering System. Number headings and paragraphs when the numbers are needed for clarity or when extensive cross-references are used.

f. Reference Material.

- (1) Appendices. Start an appendix on a right-hand page. Do not use a separate page to announce an appendix; rather, the appendix identification should appear at the top of the page with the content starting immediately on the same page. Each appendix shall be cited in the table of contents and from the appropriate position in the body of the report. When more than one appendix is used, designate them Appendix A, Appendix B, etc. When only one appendix is used, no designation is necessary. Page number appendices A-1, A-2, B-1, B-2, etc.
- (2) Glossary. Define special terms where first introduced in the text. When such terms are numerous, list them as a glossary in alphabetical order.

- (3) Reference, Bibliography, and Footnotes. Include complete identification of reference as footnotes either at the end of the chapter or at the end of the body of the report. Entries should be presented in a uniform style, with complete identifying data, in accepted bibliographic format. Each entry should include authors, title, sources, identifying numbers, pagination, and dates. Abbreviations are not recommended and should be used sparingly.
- (4) Index. If an index is included for a lengthy report, make it as complete as the nature of the report and its probable usage requires.

g. Illustrations.

- (1) General. Treat illustrations consistently throughout a report. Prepare them so that details and call-outs (labels) will be clearly legible after final reproduction. Crop or mask photographs to eliminate insignificant detail. Do not add border frames to outline illustrations or use backdrop tones in line drawings unless they contribute substantially to clarity. For reproducible copy, submit only clean line art and only original photographs (or other types of tone art) rather than screened (halftone) reproductions and indicate smallest size acceptable. The use of color illustrations is encouraged, when appropriate, in the electronic version of the report.
- (2) Placement. Locate illustrations on the next page after the first text reference made to them. In special situations, such as when a chapter contains only a few text pages and many illustrations place the illustrations in numerical sequence in the back of the chapter. It is preferable that illustrations be placed so that they may be viewed without turning the page sideways. If an illustration has to be placed sideways on a page, orient it so that the top of the illustration is at the left side of the page.

h. Tables.

- (1) Headings and Columns. Give repetitive unit of measure or degree in the column headings of tables. (Example %; \$; °F.) Do not repeat in the columns. When tables continue on two or more pages, note the continuation and repeat the tableland column headings and rulings on each page.
- (2) Numbering. Number tables to which reference is made in the text consecutively in Arabic numerals, preceded by the word TABLE, for example; TABLE 1, TABLE 2, or TABLE 1-1, TABLE 1-2, TABLE 2-1, etc. Number tables within appendices in a manner consistent with the appendix letter, such as TABLE A-1, TABLE B-2, etc.
- (3) Captions. Give each table, except short ones, which run in with the text, a descriptive caption following the table number. Place caption above the table.

i. Equations.

- (1) General. Prepare mathematical matter with extreme care. Use machine or transfer-type composition when available. Identify symbols after first use. Where many equations are used include a separate list identifying all symbols. Make opening and closing parentheses, brackets, and braces the same height as the tallest expression they enclose. Separate numerator from the denominator with a line as long as the longer of the two. Center both numerator and denominator on the line.
- (2) Placement. Indent or center a displayed equation in the line immediately following the first text reference made to it. Break equations before an equal, plus, or multiplication sign. Align a group of separate but related equations by the equal signs and indent or center the group as a whole. Short equations not part of a series may be placed in the text rather than displayed.
- (3) Numbering. Number equations which are part of a series or which are referred to in the text consecutively in Arabic numerals; for example, (1), (2), or (1-1), (1-2), (2-1), etc. Enclose each number in parentheses at the right margin on the last line of the equation numbers. Number equations within appendixes in a manner consistent with the appendix letter, such as (A-1), (B-2), etc.

j. Distribution List. Do not include a distribution list in an SSC report.

6. PRODUCTION

a. Composition

- (1) Type Size. Use a minimum 10-point type size for the main text of the report.
- (2) General Format. For maximum page coverage, do not use block paragraphs. Rather, return all succeeding lines to the left margin. Do not include two and three line pages, noting "Chapter and Title" only or "Appendix and Title" only. Place this information at top of page containing the start of text. This eliminates the cost and time to make pages ready for printing.
- (3) Line Spacing. Use single or 1 1/2 line spacing, except when extra spacing between lines is necessary to assure clarity of run-in equations, symbols, etc.
- (4) Margins. Use margins of no more than 1 inch on all sides of text pages.
- (5) Page Numbering. The author may choose from two methods of numbering, either consecutively or by chapter. Number all pages throughout a report at the bottom center. Number preliminary pages, containing the Technical Report Documentation Page Preface, Metric Conversion Factors, Table of Contents, etc., in lower case Roman numerals: i, ii, iii, etc. Number pages containing main text and illustrations

in Arabic numerals: 1, 2, 3, etc. or by chapter: 1-1, 1-2, 2-1, etc. Number appendixes in alphanumerics: A-1, A-2, B-1, etc. Odd numbered pages are right-hand pages and even-numbered pages are left -hand pages. Each chapter is to start on the right hand side, if consecutively numbered use an odd numbered page, even if a blank page must be entered to make it so.

- b. Print-Ready Hard Copy. Contractors shall furnish a reproducible copy on one side only of the final approved report within the time specified in the contract. Only clean tone or line art and original photographs and text suitable for camera-ready copy for offset printing shall be submitted.
 - (1) Workmanship. Reports published under this document are microreproduced. Filled-in or broken letters, illegible text or illustrations (including lettering), or similar imperfections are not acceptable. Original printouts or photographic reproductions using high contrast file processing techniques are generally acceptable.
 - (2) Page Size, Stock, and Ink. Reports shall be printed using paper 8 1/2 by 11 inches in size. Use black ink on opaque white paper. Different colored paper in report sections shall not be used.
 - c. Electronic Copy. Contractors shall also furnish an electronic copy of the final report in Adobe Portable Document Format (PDF) on either 3.5 inch floppy diskette or CD-ROM. Please do not send the final report as an e-mail attachment. The SSC will electronically publish this version of the report on the SSC Internet web site.
 - d. Decorative Features and Advertising. Advertising display on pages shall not be used.
7. REVIEW, ACCEPTANCE AND DISTRIBUTION. To ensure that SSC technical reports conform to the established standards of format and distribution and to protect the Government interest against possible litigation, all reports shall be reviewed and accepted as follows:
- a. Review. After completion of the technical work related to a contract, grant, or project phase, the performing organization shall submit advance draft copies of the report with a letter of transmittal to the PTC Chairman and Executive Director of the SSC for review and approval in accordance with the appropriate work agreement. Such review is for the purpose of assuring that the report is of high professional quality and in compliance with the project assignment and with the guidelines established by this document.
 - b. Acceptance. A critique of reports will be provided to the performing organizations in writing by the SSC PTC concerned, within 60 days of receipt of draft copies. For contractor prepared reports, approval will be provided in writing by the contracting officer or his designated representative.

Figure 1

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle		5. Report Date	
		6. Performing Organization Code	
7. Author(s)		8. Performing Organization Report No.	
9. Performing Organization Name and Address		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address		13. Type of Report and Period Covered	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract			
17. Key Words		18. Distribution Statement	
19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price

Figure 2

Technical Report Documentation Page

1. Report No. SSC-404	2. Government Accession No. PB98-172455	3. Recipient's Catalog No.	
4. Title and Subtitle Ship Structural Integrity Information System (SSIIS) Phase III Ship Quality Information System		5. Report Date June 1997	
		6. Performing Organization Code	
7. Author(s) Reave, H.P.; Bea, R. G.		8. Performing Organization Report No. SR-1370	
9. Performing Organization Name and Address Department of Naval Architecture and Offshore Engineering. University of California at Berkeley Berkeley, CA 94720		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No. DTCG23-95-C-E01011	
12. Sponsoring Agency Name and Address Ship Structure Committee U.S. Coast Guard (G-MSE/SSC) 2100 Second Street, SW Washington, DC 20593-0001		13. Type of Report and Period Covered Final Report 4/96-4/97	
		14. Sponsoring Agency Code G-M	
15. Supplementary Notes Sponsored by the Ship Structure Committee. Jointly funded by its member agencies			
<p>16. Abstract</p> <p>The Ship Structural Integrity Information System Phase III (SSIIS) Project presents the framework for the development of an Industry-Wide Ship Quality Information System (SQIS) for use in the United States oil tanker trade. This full-scope, life-cycle, industry-wide information system provides the basis for the development of risk based inspection, maintenance, and repair (IMR) active management tools, intended to supplement those in development by industry members. The SQIS combines information concerning structures, equipment, and operations, and provides analysis of the links between all facets of vessel management. The cooperation of all sectors of the maritime community is paramount to the successful implementation of a industry-wide SQIS. The recommendations and requirements of interested parties have been incorporated into the development of the SQIS framework. A prototype SQIS application, applied to crude oil tanker structures and operations, demonstrates the utility of the SQIS concept, despite its limitations in scale. The future requirements for the development and implementation of the full scale Industry-Wide SQIS have been identified.</p>			
17. Key Words computer, data bases inspection, maintenance and repair programs, tanker ships, structural inspection		18. Distribution Statement Distribution is available to the public through: National Technical Information Service U.S. Department of Commerce Springfield, VA 22151 Ph. (703) 487-4650	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 134	22. Price

Figure 3

CONVERSION FACTORS
(Approximate conversions to metric measures)

To convert from	to	Function	Value
LENGTH			
inches	meters	divide	39.3701
inches	millimeters	multiply by	25.4000
feet	meters	divide by	3.2808
VOLUME			
cubic feet	cubic meters	divide by	35.3149
cubic inches	cubic meters	divide by	61,024
SECTION MODULUS			
inches ² feet ²	centimeters ² meters ²	multiply by	1.9665
inches ² feet ²	centimeters ³	multiply by	196.6448
inches ⁴	centimeters ³	multiply by	16.3871
MOMENT OF INERTIA			
inches ² feet ²	centimeters ² meters	divide by	1.6684
inches ² feet ²	centimeters ⁴	multiply by	5993.73
inches ⁴	centimeters ⁴	multiply by	41.623
FORCE OR MASS			
long tons	tonne	multiply by	1.0160
long tons	kilograms	multiply by	1016.047
pounds	tonnes	divide by	2204.62
pounds	kilograms	divide by	2.2046
pounds	Newtons	multiply by	4.4482
PRESSURE OR STRESS			
pounds/inch ²	Newtons/meter ² (Pascals)	multiply by	6894.757
kilo pounds/inch ²	mega Newtons/meter ² (mega Pascals)	multiply by	6.8947
BENDING OR TORQUE			
foot tons	meter tons	divide by	3.2291
foot pounds	kilogram meters	divide by	7.23285
foot pounds	Newton meters	multiply by	1.35582
ENERGY			
foot pounds	Joules	multiply by	1.355826
STRESS INTENSITY			
kilo pound/inch ² inch ^{1/2} (ksi√in)	mega Newton MNm ^{3/2}	multiply by	1.0998
J-INTEGRAL			
kilo pound/inch	Joules/mm ²	multiply by	0.1753
kilo pound/inch	kilo Joules/m ²	multiply by	175.3