NASA Procedural Requirements

NPR 2200.2A

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Guidelines for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information

Responsible Office: AO/Chief Information Office

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Preface

P.1 Purpose

This NASA Procedures and Guidelines (NPG) prescribes specific guidelines, procedures, and standards for creating, acquiring, organizing, publishing, and disseminating scientific and technical information (STI) under the policy set forth in NASA Policy Directive (NPD) 2200.1, "Management of NASA Scientific and Technical Information (STI)." STI is the collected set of facts, analyses, and conclusions resulting from scientific, technical, and related engineering research and development efforts, both basic and applied. Information published in policy documents such as NASA directives and NASA Technical, Engineering, or Safety Standards (draft NPD 8070, "Technical Standards") such as NASA Safety Standard (NSS) 1740.15, "NASA Oxygen Safety Standard;" and NSS 1740.09, "NASA Safety Standard for Lifting Devices and Equipment;" or information published as a result of mishap investigations (NASA Management Instruction (NMI) 8621.1, "Mishap Reporting and Investigating") are excluded from this NPG. This NPG encompasses the following STI–associated activities.

P.1.1 Origination and Issuance of STI

The creation, acquisition, production, and dissemination of STI are derived from NASA activities, including that generated by NASA–sponsored research and development and related efforts. NASA STI is published using mechanisms that include the NASA STI Report Series or non–NASA scientific and technical channels, such as external publications (e.g., professional society journals, transactions, and similar periodicals), or conference, symposia, and workshop presentations or proceedings. These publications are released in print, electronic form (e.g., World Wide Web, multimedia, diskette, and CD–ROM), and nonprint media (e.g., microfiche and videotape).

P.1.2 Review and Approval of STI

Associated review and approval procedures and guidelines.

P.1.3 Dissemination of STI

Associated publication and distribution activities.

P.2 Applicability and Scope

P.2.1 NASA Headquarters, Centers, and Contractors and Grantees

This NPG is applicable to NASA Headquarters offices and Centers and to NASA contractors and grantees who elect or are required under the terms of their contracts or grants to have their reports reviewed by and/or published by NASA.

P.2.2 All Published STI

This NPG applies to all STI published and/or disseminated by or on behalf of NASA that contains NASA–sponsored STI, except as excluded by paragraph P.2.3 of this NPG.

P.2.3 Confidential Proposal Information Excepted

This NPG does not apply to documents containing proposal information furnished to NASA by contractors or grantees with notice regarding the confidentiality thereof. Such documents may be used or disclosed only to the extent authorized by the submitter and are not to be added to the NASA STI Database or disseminated without express written approval of the submitter. Any questions regarding such documents, or the appropriateness of notice regarding the confidentiality thereof, should be referred to the NASA Headquarters or Center Intellectual Property or Patent Counsel.

P.2.4 Restrictions on STI

Any restrictions or limitations placed on NASA contractors or grantees regarding the distribution, dissemination, or publication of STI produced under a contract or grant must be consistent with the "Federal Acquisition Regulations" (FAR) and the "NASA FAR Supplement" (NHB 5100.4) for contracts and the "Grant and Cooperative Agreement Handbook" (NPG 5800.1) for grants.

P.2.5 Security Information

Information protected for national security reasons under appropriate security classification must be treated in accordance with NHB 1620.3, "NASA Security Handbook," and NHB 2410.9, "NASA Automated Information Security Handbook."

P.2.6 Release under the Freedom of Information Act

Responsibilities and procedures for releasing Agency records to members of the public under the Freedom of Information Act (5 United States Code (U.S.C.) 552 et seq.) are set forth in 14 Code of Federal Regulations (CFR) Part 1206, "Availability of Agency Records to Members of the Public."

P.2.7 Technology Utilization Procedures

Additional procedures relating to technology utilization materials and computer programs are set forth in NMI 2110.1, "Foreign Access to NASA Technology Utilization Material."

P.3 Authority

Authority for policy described or referenced herein is granted by NPD 2200.1, "Management of NASA Scientific and Technical Information (STI)."

P.4 References

American National Standards Institute (ANSI)/National Information Standards Organization (NISO) Z39.18, "Scientific and Technical Reports—Elements, Organization, and Design"

ANSI/NISO Z39.23, "Standard Technical Report Number (STRN) Format and Creation"

Arms Export Control Act (22 U.S.C. 2751 et seq.), as implemented by the International Traffic in Arms Regulations, 22 CFR Part 120–30

Export Administration Act of 1979 (50 U.S.C. App. 2401–2420), as implemented by the Export Administration Regulations, 15 CFR Part 730–774

Freedom of Information Act (5 U.S.C. 552 et seq.), 14 CFR Part 1206, Availability of Agency Records to Members of the Public

40 U.S.C. 1401 et seq., the Clinger–Cohen Act of 1996 (Section 808 of Public Law 104–208 — renaming, in pertinent part, the Information Technology Management Reform Act (ITMRA), Division E of Public Law 104–106)

OMB Circular No. A–130, Management of Federal Information Resources

National Archives and Records Administration, CFR 1230, Micrographic Records Management

Patent Rights Under Government Contracts, 35 U.S.C. 205, as implemented by the Federal Acquisition Regulations, Subpart 27.3

NHB 1490.5, “NASA Printing, Duplicating, and Copying Management Handbook”

NHB 1620.3, “NASA Security Handbook”

NHB 2410.9, “NASA Automated Information Security Handbook”

NHB 5100.4, “Federal Acquisition Regulations Supplement” (NASA FAR Supplement)

NMI 1050.9, “Delegation of Authority to Take Actions Related to Certain Reimbursable and Nonreimbursable Space Act Agreements”

NMI 1381.1, “Approval, Production, Distribution, and Management of Audiovisual Products and Services”

NMI 2110.1, “Foreign Access to NASA Technology Utilization Material”

NMI 8010.2, “Use of the Metric System of Measurement in NASA Programs”

NP–212, “NASA Graphics Standard, NASA Insignia”

NPD 1490.1, “NASA Printing, Duplicating, Copier, Forms, Reports, and Mail Management”

NPD 2200.1, “Management of NASA Scientific and Technical Information (STI)”

NPG 5800.1, “Grant and Cooperative Agreement Handbook”

P.5 Cancellation

This NPG, which is issued in loose–leaf form and will be revised by page changes, cancels NHB 2200.2, dated February 6, 1987.

/s/ Benita A. Cooper
Associate Administrator for
Management Systems and Facilities

September 3, 1997

Distribution:
SDL 1(SIQ)
NODIS

Chapter 1. Publication and Dissemination of NASA STI: An Overview

1.1 Purpose

This chapter delineates responsibilities associated with the publication and dissemination of STI and provides an overview of NASA's process for publishing, approving, and disseminating the results of NASA STI activity. The associated procedures, guidelines, standards, and requirements are detailed in the following chapters.

1.2 Responsibility

1.2.1 Associate Administrator for Management Systems and Facilities

As specified in NPD 2200.1, "Management of NASA Scientific and Technical Information (STI)," the Associate Administrator for Management Systems and Facilities has overall responsibility for the NASA STI Program. This responsibility is carried out through the Director, Information Resources Management Division, with the advice of a council of senior program officials to ensure strategic direction and facilitate coordination.

1.2.2 Institutional Associate Administrators

The Associate Administrators, who are responsible for Center activities, ensure that their Centers follow the STI guidelines in this NPG and related documents.

1.2.3 NASA Officials–in–Charge of Headquarters Offices and Directors of Centers

NASA Officials–in–Charge of Headquarters offices and Directors of Centers are responsible for ensuring that all STI activities under their cognizance are performed in accordance with NPD 2200.1, "Management of NASA Scientific and Technical Information (STI)," this NPG, and related documents. Each also has the responsibility for designating an individual to serve as a focal point for these activities at his or her Headquarters office or Center.

1.3 Selection of Publication Channel(s)

1.3.1 NASA Scientific and Technical Information (STI) Report Series

Although NASA and NASA–sponsored authors are encouraged to publish in journals and to make oral presentations to professional societies, results of NASA STI activities must be published in the NASA STI Report Series whenever possible. Initial selection of the appropriate report series, made by authors in consultation with their NASA Lead Center or Center Publications Office, is based on the content of the document and the intended readership. The selection is subject to review as part of the NASA

Headquarters office or Center review process. The NASA STI Report Series comprises six types of publications: Technical Publication (TP), Technical Memorandum (TM), Contractor Report (CR), Conference Publication (CP), Special Publication (SP), and Technical Translation (TT). (See chapter 2 and appendix 3.)

1.3.2 Oral Presentations at Conferences and Symposia

Oral presentation of scientific and technical findings is one way to ensure the timely dissemination of information to audiences at society meetings and other professional gatherings. NASA and NASA–sponsored authors who take this approach should distribute copies of the presentation to attendees and publish their presentation in the appropriate NASA STI Report Series to include their work in the NASA STI Database. (See chapter 3.)

1.3.3 Non–NASA Publication of NASA STI

1.3.3.1 Dissemination of NASA STI Through Non–NASA Channels

Significant STI derived from NASA activities, including NASA–sponsored research and development and related efforts, may be disseminated through suitable non–NASA scientific and technical channels in addition to being included in the appropriate NASA STI Report Series. Such channels include society journals, trade journals, and similar periodicals produced by professional, technical, and/or academic organizations, and the proceedings of scientific and technical conferences, symposia, and workshops. Manuscripts submitted to such channels for publication must have NASA Headquarters or Center approval. (See chapter 3.)

1.3.3.2 Authorization of Foreign Dissemination of NASA STI

While the dissemination of STI through foreign publication channels is encouraged, such dissemination is subject to additional restrictions beyond those applied to domestic dissemination. Authors desiring to publish STI through non–U.S. channels must submit a copy of their proposed document in advance to the individual designated by the NASA Officials–in–Charge of Headquarters offices or the Center Director to coordinate the required review, approval, and release. (See chapter 4.)

1.3.4 Contractor– and Grantee–Produced Reports

NASA requires NASA contractors and grantees to submit a final report of their work. They should furnish NASA with a review copy containing appropriate acknowledgment of NASA support and identifying the contract(s) or grant(s) involved. Final versions of these reports are usually published in the Contractor Report series. However, a report authored by a contractor or grantee may be selected by the cognizant NASA monitoring office for publication in another series. Such reports must meet all criteria for the selected series and must be reviewed and approved at the level(s) required for that series. (See paragraph 1.4, below, and chapter 4.)

1.3.5 Duplicate Publication

The release of STI through non–NASA channels does not preclude the publication of equivalent information by NASA. For example, significant findings could be reported

initially in a prominent journal (in which space limitations might constrain complete presentation of text and figures); more detailed documentation of these findings could then be published in an appropriate NASA STI report. To avoid duplication, authors should not publish identical NASA material through different channels, with the following exceptions:

1.3.5.1 Preprints of Presentations Made at Professional Meetings

Preprints of presentations made at professional meetings that may or may not appear in subsequently published proceedings or transactions may be published as Technical Memoranda. (See chapter 2.)

1.3.5.2 Preprints or Reprints of Journal Articles

Preprints or reprints of journal articles may be published as Technical Memoranda. (See chapter 2.)

1.4 Reviews and Approvals

NASA STI reports; conference, meeting, and symposia presentations; and STI intended for external publication are subject to review and approval prior to their publication, presentation, distribution, or dissemination. These review and approval requirements vary depending upon information content, publication channel, and/or audience (i.e., foreign or domestic). Chapter 4 contains a discussion of the various review and approval procedures.

1.5 Reproduction

1.5.1 Duplication/Printing

Duplication or printing of NASA STI reports and other NASA STI publications is accomplished through NASA Headquarters and Center Publications Offices using NASA duplicating/copying facilities or Government Printing Office (GPO) regional printing procurement offices, in accordance with NPD 1490.1, “NASA Printing, Duplicating, Copier, Forms, Reports, and Mail Management,” and NHB 1490.5, “NASA Printing, Duplicating, and Copying Management Handbook.” (See chapter 5.)

1.5.2 Microphotography

Most STI publications submitted to the NASA CASI are microfiched. NASA makes extensive use of microphotography as a fast, economical, and efficient way to supply information to researchers worldwide. About 80 percent of NASA scientific and technical documents are available on microfiche or in a paper copy format reproduced from microfiche (blowbacks).

1.5.3 Electronic and Nonprint Media

Release of NASA STI may be made using electronic means (e.g., World Wide Web, multimedia, diskette, and CD–ROM) and nonprint media (e.g., microfiche and

videotape). These releases may be the only media, or they may accompany or supplement release of NASA STI in print form. Electronic and nonprint media submitted to the NASA CASI will conform to the standards in paragraph 2.6 of this NPG.

1.6 Dissemination

NASA STI reports; conference, meeting, and symposia presentations; and external publications receive the widest practical and appropriate dissemination. Unless otherwise restricted for reasons explained in chapter 4, they are distributed to NASA Centers; to domestic and international organizations, corporations, and universities that are registered to receive NASA STI publications; to NASA Center–identified authors, conference registrants, and interested members of organizations or groups; and, where appropriate, to the general public through the NASA CASI, NTIS, the Superintendent of Documents at GPO, and the Federal depository libraries. The availability of NASA STI publications is announced using a variety of channels and media. Bibliographic citations describing NASA STI publications are added to the NASA STI Database, which currently contains more than three million citations. The NASA CASI serves as the historical repository for publications and disseminates them further on demand. (See chapter 5.)

1.7 Definition of Terms

Terms used in this NPG are defined below. Acronyms are defined in Appendix 1 of this document.

Accession, Accessioning. The process by which documents are added to the NASA STI Database.

Authorized Requester. Individual or organizational user properly registered with the NASA CASI to receive STI services and products. (See also User Registration.)

Availability. The degree of authorized access to a given document based on approved distribution limitations.

Copyrighted Document. A document for which the exclusive legal right to reproduce, publish, and sell the matter and form of the work has been asserted by the author of the work. For Government–sponsored activities, a document produced in performance of a contract or grant in which the right to assert copyright has been granted to the contractor or grantee by the U.S. Government, and the contractor or grantee has asserted that right.

Dissemination. The process by which STI is transmitted to the user community.

Distribution. The transmittal of STI electronically or by hard copy, microfiche, and/or nonprint media to authorized users.

Document. An information package that may consist of printed hard copy and/or nonprint media such as videotape, audio tapes or notations, diskettes, and CD–ROM's, including the NASA STI Report Series, external publications, and symposium presentations.

Document Availability Authorization. The process by which the cognizant NASA official determines which restrictions, if any, need to be placed on the availability of a document and

initiates the accessing and distribution of the document. The form used in this process is NASA Form (NF) 1676, Document Availability Authorization.

Duplicating. The reproduction process utilizing direct transfer (maximum of 11 by 17 inches with image maximum of 10 by 14½ inches), mimeograph, high–speed electrostatic (50 copies per minutes or higher), or similar processes. (The use of a negative or metal plate is not authorized.) Additionally, it includes those processes used in conjunction with duplicating and copying processes (e.g., master making and bindery operations).

Duplicating/Copying Facility. Any location having at least one employee operating duplicating/copying equipment on a full–time basis, excluding authorized printing plants.

Export Administration Regulations (EAR). U. S. export control regulations (15 CFR 730–774) administered by the U.S. Department of Commerce that require limited availability for technical data pertaining to commodities, technology, and software listed on the Commerce Control List. NASA STI reports subject to restriction under this regulation often are referred to as EAR documents.

Electronic Dissemination. The delivery of information through the use of electronic communications or machine–readable representations of documents.

External Publication. Technical paper, article, or book reporting on NASA research submitted by a NASA employee, contractor, or grantee for publication through a non–NASA channel.

Folio. Page number.

Formal STI. Scientific and technical information intended for release in the NASA STI Report Series (e.g., Technical Memorandum, Conference Publication) or as a professional journal article or presentation for which the NASA STI Program maintains responsibility for dissemination and preservation.

Hard Copy. See Paper Copy.

Informal STI. Scientific and technical information not intended for initial release in the NASA STI Report Series.

Initial Distribution. Distribution made when the document is first published. (See also standard, nonstandard, and NASA CASI distributions.)

International Traffic in Arms Regulations (ITAR). U. S. export control regulations (22 CFR 120–130) that require limited availability for technical data that pertains to commodities, technology, and software listed on the United States Munitions List. NASA STI reports subject to restriction under this regulation are often referred to as ITAR documents.

International Standard Serial Number. An identification number used by the Library of Congress for serial titles (periodicals, annuals, and other publications regularly issued under the same title).

International Standard Book Number. An identification number used by libraries and bookstores as an aid in book publishing.

Library of Congress Card Catalog Number. An identification number used by the Library of Congress for monographic publications.

Microfiche. Miniature film copy of a document. The NASA STI Program uses microfiche to archive the documented results of STI and as one of its document distribution mechanisms. All NASA STI Program microfiche are processed, archived, duplicated, and distributed in accordance with the National Archives and Records Administration 35 CFR 1230, Micrographic Records Management, and applicable American National Standards Institute (ANSI)/Association for Information and Image Management (AIIM) standards.

Microreproduction. The preparation of a miniature film copy, e.g., microfiche, from an original document.

NASA Center for AeroSpace Information (NASA CASI). The NASA STI Program's primary information processing facility.

NASA CASI Distribution. Prescribed initial distribution of a document, e.g., two copies (if black and white and an 8 x 11–inch page size) or 15 copies (if color or a page size other than 8 x 11 inches) supplied by the NASA Lead Center or Center STI Manager, Publications Office, contractor, or author to the NASA CASI for document supply stock and/or input processing.

Nonstandard Distribution. Prescribed initial distribution of a document, e.g., to NASA Center libraries; other Government agencies such as the National Technical Information Service (NTIS), the Superintendent of Documents at the GPO, and Federal depository libraries; and the NASA CASI for document supply stock and/or input processing.

Paper Copy. Full–sized reproduction of an original document on paper.

Printing. The processes of composition, platemaking, presswork, duplicating, silk screen processes, binding, microform, and the end items of such processes.

Printing Plant. Facility dedicated in whole or in part to the printing function and duly authorized by the Joint Committee on Printing (JCP). A listing of JCP–authorized printing plants is maintained by the NASA Printing Management Officer.

Professional Journals. Scientific, technical, and trade publications produced by professional, technical, and/or academic organizations.

Publication. The process of officially releasing a NASA document for public or restricted access through print, electronic, or nonprint media. Also, the resultant publicly available document.

Publicly Available. Availability assigned to STI information for which distribution and use is unrestricted (i.e., unclassified, unlimited).

Report Series. See STI Report Series.

Research and Technology Objectives and Plans. A document outlining research to be performed by a Center with the approval of the cognizant NASA Headquarters Program Office.

Secondary Distribution. Distribution of a previously published document made subsequent to its initial distribution, usually in response to a specific request for the document; i.e., distribution on demand.

Security Classified. Documents containing classified information as defined in NHB 1620.3, "NASA Security Handbook," or similar regulations or directives of other Government agencies (e.g., Department of Defense).

STI Report Series. Discrete report designations that characterize NASA and NASA contractor STI reports. The NASA STI Report Series comprises six types of publications: Technical Publication (TP), Technical Memorandum (TM), Contractor Report (CR), Conference Publication (CP), Special Publication (SP), and Technical Translation (TT).

Standard Distribution. Prescribed initial distribution of a document, e.g., to users registered with the NASA CASI to receive all documents concerning a particular subject.

Subject Division. Specific subject areas used to categorize documents in the collection which are used in the NASA announcement journals, e.g., aeronautics, astronautics, chemistry and materials. A complete listing of the subject divisions and the subject categories included in each division covered by the NASA STI Database is provided in appendix 2.

Symposia. Technical conferences, seminars, and similar meetings held by Government agencies, professional societies, universities, or industrial organizations.

Technical Report Server (TRS). A file server at each NASA Center that serves as a repository for all the technical reports produced by the Center. The NASA Center for AeroSpace Information (CASI) currently serves as the historical repository of all NASA formal STI and as the physical full text (hard copy) distribution center for these reports after their initial distribution by the Center producing the formal report.

Trademark. A trademark is a word or symbol that is used to identify a particular product or service in a way that distinguishes it from other similar products or services. A trademark may be registered.

Trade Name. A trade name, or commercial name, is any name used by a person to identify his or her business or vocation. Generally, these names are not registered.

Technical Monitor. The NASA employee appointed to monitor or manage technical progress, referred to in grant instructions as the Technical Officer. In contract instructions, this employee may be identified as the Project Manager or the Contracting Officer’s Technical Representative (COTR).

User Registration. The process by which eligible organizations and individuals become authorized to receive STI services and products.

Chapter 2. NASA STI Report Series

2.1 Purpose

All significant scientific and technical findings derived from NASA activities are distributed or disseminated either in one of the NASA report series defined in this chapter or through suitable non–NASA scientific and technical channels. This chapter provides the standards for publication of NASA STI in the NASA STI Report Series. See chapter 3 for a discussion of publication of NASA STI through professional journals and similar periodicals, or the proceedings of conferences, symposia, and workshops.

2.2 Assigning Publications to the NASA STI Report Series

2.2.1 NASA STI Report Series Types

The NASA STI Report Series comprises six types of publications:

1. Technical Publication (TP).
2. Technical Memorandum (TM).
3. Contractor Report (CR).
4. Conference Publication (CP).
5. Special Publication (SP).
6. Technical Translation (TT).

2.2.2 Basis for Series Selection

Selection of the correct series in which a document is published should be based on the content of an author's manuscript and the needs of an identifiable readership. (See appendix 3.) The preliminary determination is made by the author in conjunction with the NASA Lead Center or Center Publications Office. It is subject to approval as part of the NASA Headquarters office or Center review process. (See chapter 4.)

2.2.3 Report Series Assignment

When the series is selected and approved, the publication is assigned a report number by the NASA CASI through the NASA Lead Center or Center Publications Office. The report number is prefixed by the Agency acronym and the two–letter abbreviation that indicates the series. Examples: NASA/CP—1998–123456; NASA/TP—1998–123456. (See also paragraph A8.2.1.)

2.2.4 STI Work Undertaken for Another Agency

When NASA or NASA–sponsored employees work with or undertake work for another agency, they should report their scientific and technical findings in the NASA

STI Report Series. Appropriate indication of the joint project or sponsorship should be given on the cover, title page, and Standard Form (SF) 298, Report Documentation Page (RDP). (See paragraphs 2.5.3 and 2.5.5.) Such publication will not, of course, preclude the other agency from publishing the work in its own series.

2.2.5 STI–Related Work Funded by One Center and Performed by Another

When NASA work is sponsored or funded by one Center and performed by another Center, the scientific and technical findings should be reported in the NASA STI Report Series. The Center performing the work is responsible for approval, production, and issuance of the technical report. Appropriate indication of sponsorship is given on the cover, title page, and the RDP.

2.3 Description of the NASA STI Report Series

2.3.1 Technical Publication (TP)

This series comprises reports of completed research or of a significant phase of research that presents the results of NASA programs. TP's usually include extensive data or theoretical analysis, but they may be compilations of significant scientific and technical data or information deemed to be of continuing reference value. TP's represent the NASA counterpart to peer–reviewed formal professional papers but have less stringent limitations on manuscript length and extent of graphic presentations. In addition to reports documenting research, the types of documents assigned to this series include the following:

- Bibliographies of STI literature in defined subject areas with abstracts and/or extensive annotation.
- Technical handbooks, critical tables, extensive use data compilations.
- Design standards.
- Scientific and technical textbooks and manuals.
- State–of–the–art summaries, including critical reviews or surveys of a body of scientific or technical literature.
- Technical reports or monographs that provide complete and comprehensive treatment of significant contributions to scientific and technical knowledge, or a critical evaluation of selected, previously published research.

2.3.2 Technical Memorandum (TM)

This series records scientific and technical findings that are preliminary or of specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. TM's do not contain extensive analysis. The types of documents assigned to this series include:

- Preliminary data ("quick release" reports).

- Working papers for professional peers beyond the basic work unit.

- Individual papers prepared for presentation at or preprints for professional meetings or symposia, which may or may not be published later in proceedings or journals.

- Preliminary proceedings of professional meetings or symposia, sponsored or cosponsored by NASA. When the proceedings are not complete, the extent of the content, e.g., “abstracts only” or “primarily viewgraphs,” is indicated in the Supplementary Notes block of SF298, RDP. (See paragraph 2.5.5 and appendix 6.)

- Theses or dissertations that relate to Agency work, written by NASA employees only.

- Bibliographies that present listings of STI literature, without evaluation, written by NASA employees, contractors, and grantees.

Examples of reports published as TM’s include bibliographies with minimal annotations, preprints of professional meeting papers, preprints or reprints of professional journal and technical magazine articles, computer program application documentation, limited use data compilations, civil service work–related theses, preliminary results, reports to other agencies, security classified reports, non–NASA sponsored research results, and working papers prepared for external circulation.

2.3.3 Contractor Report (CR)

This series comprises reports of scientific and technical findings by NASA–sponsored contractors and grantees.

2.3.3.1 Dissemination of Contractor Reports

Contractor Reports containing findings of completed or significant scientific and technical work such as that defined in paragraph 2.3.1 warrant standard distribution (e.g., distribution to the NASA CASI and NASA Centers, domestic and international organizations, corporations, and universities that are registered with NASA CASI to receive NASA STI publications in any or all of the 11 broad subject divisions shown in appendix 2). Contractor Reports containing findings of preliminary or specialized interest such as that defined in paragraph 2.3.2 receive local and nonstandard distribution, (e.g., distribution to the NASA CASI and NASA Center libraries, and to other Government agencies such as NTIS, the Superintendent of Documents at GPO, and Federal depository libraries). (See paragraph 5.6 for a discussion of NASA STI Report Series dissemination.) All Contractor Reports are subject to the minimum review requirements listed in paragraph 4.2.3.

2.3.3.2 Release of Contractor Reports in Other Series

A final report or nonrequired report authored by a contractor or grantee may be selected by the NASA monitoring office for publication as a NASA CP,

SP, or TP in lieu of being published as a CR. (A given report may be published in one series only.) Such reports must meet all criteria for the selected series and must be reviewed and approved at the level(s) required for that series.

2.3.4 Conference Publication (CP)

This series contains collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or cosponsored by NASA.

2.3.4.1 Preprints

Conference proceedings may be preprinted as a TM and distributed to attendees at conferences even though subsequent printing and standard distribution as a CP is planned.

2.3.4.2 Release of Conference Proceedings in Both Series

It is sometimes practical to record a conference in both series, for example, if a significant amount of time will elapse between presenting the abstracts and illustrations as a TM and the full proceedings as a CP, or if handouts of the abstracts are needed for the conference and the papers have not yet been collected. When abstracts have been published as a TM and the proceedings are subsequently published as a CP, an entry in the Supplementary Notes block of SF298, RDP for the CP indicates that the CP supersedes the TM. (See paragraph 2.5.5.)

2.3.5 Special Publication (SP)

This series records scientific, technical, or historical information from NASA programs, projects, and missions, often concerned with subjects having substantial public interest. The types of documents assigned to this series include the following:

- Scientific summaries of mission results (general series numbered below 3000).
- Atlases of scientific imagery (general series below 3000).
- Selected outlook studies, comprehensive program descriptions, and retrospective assessments (general series below 3000).
- Contractor or grantee results and findings of general interest to a wide public audience (general series below 3000).
- Histories and chronologies (4000 series).
- Management publications (6000 series). This series documents requirements, plans, theories, or techniques for management or administration of NASA–sponsored scientific and technical work. It includes NASA projects or programs that have application to more than one Center, to other Government agencies, or to partnerships with industrial or international organizations.

Although reports discussing methods of scheduling, funding, or staffing may be included, reports containing specific costs or labor figures are not appropriate to this series. When the primary content of a report is scientific findings or technical development, another series such as TM or TP should be used.

- Regularly published abstracts, continuing bibliographies, indexes, publication guides, and announcement journals (7000 series).

2.3.6 Technical Translation (TT)

This series consists of English–language translations of non–English scientific and technical material pertinent to NASA's mission. A translation of material protected by copyright is a derivative work, the distribution of which is constrained by international copyright law. However, TT's are retained at the NASA CASI for U.S. Government use subsequent to the initial request for the translation.

2.4 Control of the NASA STI Report Series

2.4.1 Policy

Responsibility for production and dissemination of all NASA STI publications is set forth in NPD 2200.1, "Management of NASA Scientific and Technical Information (STI)," and NMI 1383.1, "Approval, Production, Distribution and Management of Audiovisual Products and Services."

2.4.2 Responsibilities

The STI Lead Center holds overall responsibility for the management and control of the production and distribution of the six STI Report Series described in paragraph 2.3. This responsibility is carried out through the NASA Lead Center Technical Publications Manager and the NASA Center STI Managers and Publications Managers.

2.4.3 Preliminary Procedures

2.4.3.1 Funding

The author or NASA Lead Center or Center Technical Publications Manager ensures that the necessary funds are available from the originating NASA Headquarters or Center office to cover the cost of production and printing of the report in quantities sufficient for the anticipated initial distribution (standard, nonstandard, and/or distribution to the NASA CASI). (See paragraph 5.6.1.)

2.4.3.2 Reviews and Approvals

The author ensures that the required reviews are completed and approvals obtained. (See chapter 4.)

2.4.4 Special Procedures

2.4.4.1 NASA Contractor Reports

2.4.4.1.1 Reports Prepared by Contractors or Grantees

Reports prepared by contractors or grantees will be processed into the formal CR series only after the contract Technical Monitor has approved the report as an acceptable deliverable under the terms of the contract or grant. (See also paragraph 2.3.3.2.)

2.4.4.1.2 Submittal of Reports

Contractors and grantees must submit reports as required by the contract or grant. For each report submitted under a contract or grant, current NASA STI Program procedures require that two reproducible copies, one bound and one unbound, be submitted directly to the NASA CASI and one camera–ready copy be submitted to the NASA Lead Center or Center Publications Manager at the same time that the report is submitted to the Technical Monitor. A completed RDP is positioned as the last page of the report. In printed reports, the RDP is printed so that it faces the back cover. The cover and title pages of submitted reports include the standard cataloging elements specified in paragraph 2.5.3. (See “NASA FAR Supplement” 1827.406(b), 1852.235–70 as prescribed in 1827.409(I), 1835.070(a), and 1852.235–70(c).) Note that some older contracts may pre–date these guidelines; if so, the guidelines in this NPG take precedence.

2.4.4.2 NASA Technical Translations

2.4.4.2.1 Collection of Technical Translations

Translations of scientific and technical information performed by and for NASA represent a resource investment; therefore, technical translations are collected by the NASA CASI for the NASA STI Database.

2.4.4.2.2 Submittal of NASA Technical Translations to CASI

NASA activities arranging for translation services (e.g., through the award of a contract for translation services) should incorporate the requirement to submit one copy of each technical translation to the NASA CASI in those arrangements, (e.g., a contract clause), thereby relieving the requester of the responsibility to ensure that copies of translations are forwarded

for accessioning into the NASA STI Database. If the producer of a translation is not required to submit one copy of each technical translation to the NASA CASI, it is the responsibility of the requester to ensure that a copy of the translation is forwarded to the NASA CASI for inclusion in the Technical Translations series.

2.4.4.2.3 Provision of Copyright Information

To assist the NASA CASI in determining distribution limitations and to expedite future dissemination of a technical translation, the requester should ensure that information concerning copyright of the original source document accompanies the translation submitted to the NASA CASI. Such information includes, but is not limited to, the title of the book or article, the name of the book or journal in which the copyrighted information was originally published, the publisher's name and address, and the publication date.

2.4.5 Sources for Standards

Style and format standards for NASA scientific and technical publications are provided in several sources. If conflicting guidance is encountered, the sequence of the following list governs selection of the appropriate standard.

- NPG 2200.2, "Guidelines for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information."
- NP–212, "NASA Graphics Standard, NASA Insignia." (See also Appendix 4 of this document, "Standard Front and Back Covers and Title Pages.")
- Instructions issued by NASA Centers that implement the requirements of this NPG and NP–212.
- NASA publications containing style specifications (e.g., NASA SP–7047 and NASA SP–7013).
- Government Printing Office Style Manual.
- Industry–standard style manuals or specifications.

2.4.6 Report Numbers

Report numbers for all NASA STI reports are maintained at the NASA CASI and assigned sequentially upon request from a NASA Lead Center or Center Publications Office. (See also paragraph A8.2.1 of this document.)

2.5 Standards for Hard Copy (Paper) Publications

2.5.1 Page Mechanics

Page mechanics for the STI Report Series' standard front and back covers and title pages are depicted in Appendix 4 of this document. Appendix 4 also illustrates the use

of the standard elements (report number, title, etc.) described in paragraph 2.5.3. A separate document, “NASA STI Page Layout Samples,” suggests typefaces, font sizes, and interior page formats for publications released in the STI Report Series. Both the covers and title pages in Appendix 4 and the “NASA STI Page Layout Samples” document are available on the NASA STI Program Home Page (http://www.sti.nasa.gov/layout.htm). While use of the standard covers and title pages depicted in Appendix 4 is required for printed STI, their layouts may be adapted as needed for STI produced in nonprint media. The standard elements must be included regardless of media. Note that the grids shown in the layouts are provided for design purposes only and are not to be a part of the finished electronic or print document.

2.5.2 Use of Color

2.5.2.1 Use of Color in Printed Versions of the NASA STI Report Series

The use of color in printed publications increases printing costs. Therefore, color printing is used in printed versions of the NASA STI Report Series only when necessary to convey scientific and technical material in a clear and unambiguous fashion. The added design and production costs for the portrayal of information in color is justified and authorized on a case–by–case basis using NASA Headquarters or Center–specific procedures. The duplicating or printing requirements must be in accordance with NPD 1490.1, “NASA Printing, Duplicating, Copier, Forms, Reports, and Mail Management” and must be approved by the NASA Headquarters or Center Printing Management Officer for legality and necessity.

2.5.2.2 Use of Color in Electronic Versions of the NASA STI Report Series

If color enhances the educational, promotional, and/or science purpose of a publication in the NASA STI Report Series, its use is appropriate and encouraged. The cost of the use of color is far less a concern in electronic publications than in print and can be used to good effect without undue expense for the reader or technical complexity. The decision to use color should involve the considerations presented in the following subsections.

2.5.2.2.1 Audience Multimedia Capabilities

Although use of multimedia is widely accepted as a vital means for conveying information, its use and its development are still growing. Publications using multimedia components may pose difficulties for some STI readers; however, STI publishers and content providers are encouraged to explore use of multimedia for those internal and Internet applications where the audience has been clearly identified as being capable of viewing, downloading, and storing complex files and presentations.

2.5.2.2.2 Usability Factors for Readers with Black–and–White Display and/or Print Capabilities

Because readers still have black and white monitors and printers, the benefits of color are lost in these cases. Additionally readers

with black and white monitors will be unable to read some combinations of background designs, colors, and typefaces. Such combinations will result in indistinguishable data when the document is printed on a black and white printer. Use of color should therefore always be tested on several platforms and on several monitor types to ensure the widest possible successful and effective presentation.

2.5.2.2.3 File Size

The increased file size of documents containing color elements and graphics may offset the cost savings and affect usability of the document. Large files transferred across the Internet or local area networks can impact other communications and productivity in an electronic production environment.

2.5.2.2.4 Storage and Retrieval Concerns

Cost of storage is dropping all the time. It is nonetheless important to remember that color file sizes can be extremely large, especially for high–resolution 24–bit or 30–bit color images. This places an extraordinary demand for storage capacity on the average STI reader, and is therefore not recommended. Color for use in STI documents appearing on the Internet can be held to a minimum by applying the appropriate graphic color palettes and by using photographic image compression.

2.5.2.2.5 “Use of Color” Support and Expertise

The NASA Lead Center or Center Publications Office may be consulted to assess the intended audiences’ print capability and address the file size and storage and retrieval concerns. They are also a resource for identifying particular colors that will display properly or determining black and white mechanisms, such as line weight and shading in illustrations, that can replace color where necessary to increase usability of the documents for the largest audiences’ hardware and software capabilities.

2.5.2.3 Use of Color in NASA STI Report Series Released in Electronic and Print Media

Publications in the NASA STI Report Series may be printed in black and white and then released electronically in color. NASA STI Report Series to be printed and electronically released in color are subject to the procedures and guidelines in paragraph 2.5.2.1 above.

2.5.3 Standard Front and Back Covers and Title Pages

The design and content of the front and back covers and title pages of NASA STI reports, except for Special Publications, are standardized in accordance with industry

standards such as ANSI/NISO Z39.18, “Scientific and Technical Reports — Elements, Organization, and Design,” and Agency standards such as those detailed in NP–212, “NASA Graphics Standard, NASA Insignia” and NHB 1490.5, “NASA Printing, Duplicating, and Copying Management Handbook.” This standardization provides a recognizable NASA STI Program image, speed and economy of production and reproduction, consistency of cataloging information, and lowest recycling cost. Therefore, the front and back covers and title pages of NASA STI reports, except for Special Publications, must contain the standard elements listed below.

2.5.3.1 Paper Specifications

Except for SP’s, the NASA STI Report Series front and back covers are duplicated or printed on white vellum–finish cover stock.

2.5.3.2 Ink Specifications

Except for SP’s, the NASA STI Report Series front and back covers are duplicated or printed using black ink or one of the following Pantone® Matching System (PMS) ink colors, as shown in the following chart.

Series	If Duplicated	If Printed
CP	Black	PMS 185 (Bright Red)
CR	Black	PMS 560 (Green)
TM	Black	
TP	Black	PMS 280 (Blue)
TT	Black	PMS 266 (Purple)

2.5.3.3 Standard Elements for Front Covers

- Report number. (See also paragraph A8.2.1.)
- NASA insignia (the “meatball”).
- Title.
- Author name(s), affiliation, and location.
- Optional one–color line art or black–and–white photo. (See paragraph 2.5.3.9.)
- Notices and disclaimers, if applicable. (See Chapter 4.)
- Rule.
- Month/year.

2.5.3.4 Standard Elements for the Back of Front Covers

NASA STI Program profile.

2.5.3.5 Standard Elements for Title Pages

Title page elements (except art) plus those below:

- Author name and affiliation.
- Editor name and affiliation, if applicable (for edited CP's, TP's, or TM's when the editor has contributed scientific and technical expertise and judgment).
- Agency name and address (corporate source).
- Contract statement and number, if applicable.
- Conference information (name of conference, location, dates, sponsors, etc.), if applicable.
- Notices and disclaimers, if applicable. (See Chapter 4.)

2.5.3.6 Standard Elements for the Back of Title Pages

- Acknowledgment, if applicable.
- Notices and disclaimers, if applicable.
- Statement announcing that the document is available from the NASA CASI and the National Technical Information Service (NTIS). See the sample back of title page in Appendix 4 of this document.
- International Standard Serial Number (ISSN), International Standard Book Number (ISBN), and/or Library of Congress Card Number, if applicable. (See Appendix 5.)

2.5.3.7 Standard Elements for Back Cover

The back cover is blank except for a rule at the bottom of the cover. When documents are self–mailed, a mailing label that includes the addressee, the return address, and appropriate postage may be affixed to the center of the back cover. No text or images other than the rule may be placed below the last line of the address on the mailing label.

2.5.3.8 Standard Elements for Spines

- Report Number
- Title

2.5.3.9 Artwork and Photography

Use of one–color line art and black–and–white photographs is permitted on the front cover of NASA STI reports only in the image area illustrated in Appendix 4, “Sample Front and Back Covers and Title Pages.” The one–color line art or black–and–white photograph must be duplicated or printed using the standard black or PMS color for the particular NASA STI Report Series. Such one–color line art and black–and–white photographs must meet the graphics standards of the originating Center and must be approved by the NASA Headquarters or Center Graphics Coordinator.

2.5.3.10 Cosponsor Logos

When NASA shares sponsorship with a noncommercial organization, the logo or seal of the cosponsor may appear on the cover with the NASA insignia. When NASA shares sponsorship of STI published in the NASA STI Report Series with another agency or organization, use of the logo or seal of the cosponsor must be in accordance with NP–212, “NASA Graphics Standard, NASA Insignia.”

2.5.4 Nonstandard Front Cover and Title Page

Sometimes a nonstandard design is needed for printed versions of the front cover and title page of a NASA STI report of particular note. Such designs must contain the standard elements and must be duplicated or printed using black ink or the PMS color for the particular NASA STI Report Series. (See paragraph 2.5.3.) The use of a nonstandard design and the associated additional design labor cost are justified and authorized on a case–by–case basis using NASA Headquarters or Center–specific procedures. The nonstandard design must be in accordance with NP–212, “NASA Graphics Standard, NASA Insignia” and must be approved by the NASA Headquarters or Center Graphics Coordinator. The duplicating or printing requirements must be in accordance with NMI 1490.1, “NASA Printing, Duplicating, Copier, Forms, Reports, and Mail Management” and must be approved by the NASA Headquarters or Center Printing Management Officer for legality and necessity.

2.5.5 Report Documentation Page

2.5.5.1 RDP Requirements

A Report Documentation Page (RDP) Standard Form (SF) 298 is required for all documents published in the NASA STI Report Series. It provides the information necessary to accession the report. Directions for preparation of the RDP are given on the back of the form. (A sample SF298 is included in Appendix 6.) Except for NASA Special Publications, the completed RDP is positioned as the last page of the report. In printed documents, the RDP is printed so that it faces the back cover. For SP’s, the RDP is forwarded to the NASA CASI with, but not printed and bound in, the SP.

2.5.5.2 Funding Numbers/Supplementary Notes

For information retrieval purposes, include the Research and Technology Objectives and Plans (RTOP) number, if any, on the form in the block

designated for Funding Numbers. For a symposium presentation preprinted as a Technical Memorandum or published as a Conference Publication, identify the meeting or symposium in the block designated for Supplementary Notes.

2.5.5.3 Abstract

Whenever possible, the abstract included on the RDP should be informative rather than descriptive and should state the objectives of the investigation, the methods employed (e.g., simulation, experiment, or remote sensing), the results obtained, and the conclusions reached.

2.5.5.4 Classified Reports

For a classified report, the title and the abstract are followed by the classification of each in parentheses. Whenever possible, the title and abstract of a classified report are unclassified. Unclassified titles and abstracts are followed by a "(U)."

2.5.6 Factors Affecting the Production and Quality of Microfiche

Many of the hard copy documents entering the NASA STI system are reproduced on microfiche. NASA makes extensive use of microphotography as a fast, economical, and efficient way to provide information to researchers worldwide. About 80 percent of NASA scientific and technical documents are supplied through secondary distribution on microfiche or on hard copy reproduced from microfiche (blowbacks). Therefore, it is important to produce original camera copy with the following microfiche considerations in mind.

2.5.6.1 Oversized Image Area

Oversized image areas cannot be reproduced on microfiche, and therefore oversized reports cannot be included in complete standard distribution.

2.5.6.2 Quality of Original

Typefaces smaller than 10 points and with light or less than sharp inking on the original copy do not film well (or at all) and therefore affect the quality and usefulness of microfiche and blowbacks from microfiche.

2.5.6.3 Color

Color illustrations and photographs are sometimes necessary to convey information. However, NASA CASI currently produces microfiche only in black and white.

2.5.6.4 Foldouts

Foldouts to present oversized charts are sometimes necessary. Due to camera constraints, however, foldouts must be filmed in sections to fit microfiche.

2.5.7 Handwritten NASA STI Reports

Publications included in the NASA STI Report Series shall be professional in appearance (i.e., typeset) and capable of electronic transmission. Handwritten elements of any kind should be avoided.

2.6 Standards for Electronic and Nonprint Publications

2.6.1 General Standards

2.6.1.1 Introduction

The NASA STI Program established procedures and guidelines to facilitate the appropriate but speedy release of STI in electronic formats, which are presented in the following sections. These procedures and guidelines reflect NASA's recognition of the opportunities of the evolving world of electronic publications not only to expand the availability of NASA STI while reducing the associated costs, but also to expand the types of available STI. Thus, while the NASA STI Program will continue its tradition of maintaining formal STI in a central repository, new procedures and guidelines are in place to support the electronic release, storage, and archival of formal and informal STI. In considering electronic release of their informal STI, authors are encouraged to consider several factors: that release to TRS's or to the World Wide Web is release to the world and requires export control approval prior to release; how they will manage their responsibility to maintain their document; and whether their informal STI merits the additional reviews and other steps necessary for transition to formal STI, so that it is historically preserved by the NASA STI Program.

2.6.1.2 Release of Formal Versus Informal NASA STI

Center TRS's are patterned after the current paper system to preclude foreign access to restricted information. Currently, with the open Internet environment, restricted (classified, limited, commercially sensitive) information is not included for electronic dissemination. If the Center STI Program, in cooperation with the Center's technical management, has determined that release of informal STI shall be permitted, the author must seek Center approval for electronic release of the document. When the informal STI consists of preliminary information, it must be clearly marked that it is preliminary.

2.6.1.3 Currency of Information

Formal STI is maintained by the NASA STI Program through the NASA CASI and therefore may be removed from any other electronic source to which it has been posted without further consideration. Informal STI, conversely, is not maintained by the NASA STI Program through the NASA CASI. Therefore, informal STI may not be removed from any electronic source to which it has been posted without the provision of an alternative archival method.

2.6.1.4 Appearance/Quality

- The existing standards and requirements set forth in this NPG should be followed for electronic documents as well. While the format requirements detailed in paragraphs 2.5.1, “Page Mechanics,” through 2.5.4, “Nonstandard Front Cover and Title Page,” may be followed as is appropriate for documents produced for online distribution (e.g., the World Wide Web), the cataloging elements specified for STI produced in hardcopy formats are required for STI produced in online formats.

- When releasing electronic versions of NASA STI, consideration must be given to existing NASA file and compatibility standards.

- Electronic release of STI with missing data, photographs, figures, or tables must be annotated with a specification of the missing content and a specification of how to obtain the full document.

- Responsibility for assessing the desirability and cost effectiveness of completing electronic versions of existing documents (e.g., by scanning photographs, figures, etc.) shall lie with each Center’s STI function.

2.6.1.5 Copyright

NASA STI released in any media, such as a NASA Technical Report Server (TRS) or the World Wide Web, will adhere to policies and guidelines stated in this NPG and United States copyright law.

2.6.1.6 Conformance with Information Technology Standards

Release of NASA STI in electronic form conforms with the information technology standards and guidelines promulgated by NASA through its Chief Information Office.

2.6.1.7 Authorization for Release

- Completed Document Availability Authorization (DAA) and Report Document Page (RDP) forms, or the data from these forms, are required prior to the release of formal STI. (See Chapter 4.)

- For formal STI, the RDP is submitted for release with the publication in two formats to the NASA CASI: as a separate file in ASCII format and as the last page of the publication in the electronic file, in the word processing format used by the Center Publications Office.

- For informal STI that is to be released outside of NASA (e.g., STI that does not bear the NASA Only restriction), a completed, signed DAA containing the URL of the informal STI must be on file. Since informal STI is not disseminated to the NASA CASI for processing and archiving, the URL of informal STI released outside of NASA is used by the STI Program to create a “pointer” to the informal STI.

- All completed DAA's and RDP's are forwarded to the Center Publications Office.

2.6.2 Submittal of Electronic and Nonprint Publications to NASA CASI

Electronic and nonprint reports and supplements to reports submitted to the NASA CASI must conform to the following standards, depending on the media.

2.6.2.1 Electronic File Formats

NASA CASI can accept the following electronic file formats, which are listed in order of preference.

- Class B–compliant Tagged Image Format File (TIFF) Group IV (single or multipage)
- Postscript (PS) Levels 1 and 2
- Adobe Portable Document Format (PDF)
- ASCII
- Standard Generalized Markup Language (SGML)
- Submission requirements: ASCII version of the RDP as the first file, which indicates the beginning of a new document file; inclusion of the RDP page as the last page of the file; and the accompanying information listed in paragraph 2.6.2.4 of this NPG.

2.6.2.2 Nonprint Media

NASA CASI can accept the following types of nonprint media. For each type, the media are listed in order of preference.

2.6.2.2.1 Electronic Media

- 8mm tape; 4mm Digital Audio Tape (DAT; WGC or DDS format; 60 or 90 meter)
- Digital Linear Tape (DLT)
- IBM 3480 type tape (18 track, 38,000 bpi)
- IBM 3420 type tape (9 track, 1600 or 6250 bpi)
- 3.5″ MS–DOS diskettes
- CD–ROM's formatted to ISO 9660 standards
- Submission requirements: ASCII version of the RDP as the first file, which indicates the beginning of a new document

file; inclusion of the RDP page as the last page of the file; and the accompanying information listed in paragraph 2.6.2.4 of this NPG.

2.6.2.2.2 Microfiche

- 98 frames per 105mm x 148mm fiche.
- 24 to 1 reduction ratio.
- Submission requirements: Silver master(s), accompanied by a printed RDP.

2.6.2.2.3 Videotape

- ″ Betacam SP.
- Submission requirements: Two copies of the videotape, accompanied by a printed RDP.

2.6.2.3 Compression Formats

NASA CASI can accept the following compression formats, which are listed in order of preference.

- Tar (tape archive)
- Tar.z (tape archive.zipped)
- Zip

2.6.2.4 Accompanying Information

The following information must accompany all electronic and nonprint media submitted to NASA CASI.

- Center name
- Date prepared
- A tracking number
- A sequence number (1 of 2, etc.)
- Electronic format used
- File names
- Compression format
- Whether the file contains a citation and the document

- Whether the media contains images of the documents
- Size of the file and the number of graphics contained in the file
- Any notes pertinent to the files contained on the media

2.6.2.5 File Naming Conventions

All electronic files submitted to the NASA CASI should be named using the following standards.

- DOS standard file name. Eight.three characters, where the eight characters represent the report number, type, and volume or part number, and the three characters represent the application. For example, **NASA/TP—1998–123456** submitted as a WordPerfect file would be named **tp123456.wpd**. **NASA/TM—1998–123456/VOL2** submitted in PDF format would be named **tm1234v2.pdf**. A Word file submitted as **NASA/RP—1998–123456/PART2** would be named **rp1234p2.doc**.
- Single Tagged Image Format File (TIFF) names should include the logical file sequence, for example 001, 002.

2.6.3 Availability of Electronic and Nonprint Publications from NASA CASI

Electronic and nonprint versions of NASA STI publications are available in the following formats from NASA CASI.

2.6.3.1 Microfiche

Microfiche output is available only in the format specified in ANSI/AIIM standards pertaining to 24X microfiche.

2.6.3.2 Computer Diskette

Computer diskette output is available in like–to–like MS–DOS, Windows, and Macintosh formats.

2.6.3.3 Videotape

Videotape output is available in Betacam SP, High–8, VHS, and Super VHS formats.

2.6.3.4 CD–ROM Output [Reserved]

2.7 Standards for Protection of Intellectual Property

2.7.1 Authorship

2.7.1.1 Author

With the exception of NASA histories, the authorship of NASA publications is generally reserved for persons who participate in the performance of the work from which the STI results and who can effectively defend the main technical content of the publication to a peer group. Because of the complexity of scientific and technical work, many publications have multiple authors. The authors' names should appear in a sequence that indicates their respective responsibility for the reported results; that is, the first author is the chief contributor and writer, and other authors follow in the order of their responsibility for the work.

2.7.1.2 NASA Coauthors

NASA employees may not be listed as coauthors of Contractor Reports. When NASA employees contribute to rather than monitor contract or grant work, such work should be published in another series.

2.7.1.3 Editor

Recognition of editorship is justified when the editor has contributed scientific and technical expertise and judgment.

2.7.2 Acknowledgment of Significant Input and Routine Support

It is appropriate to acknowledge significant contributions directly related to the substantive content or preparation of a NASA STI report by individuals other than the authors. When an acknowledgment of contribution is warranted, it is included in a paragraph on the back of the title page.

2.7.3 Reference List

2.7.3.1 Reference to Work by Others

Reference to work by others must be acknowledged in all NASA STI reports. Proper citation of references is the author's responsibility. The style and format of the reference list may follow accepted practice in the discipline of the report. When there is no preferred style, the name/date style of citation in text (e.g., Anders, 1971, 1972; Smith, 1974), with a corresponding reference list, alphabetized by name, is preferred.

2.7.3.2 Reference to Unpublished Work

Reference to unpublished work or information acquired through personal communication must be clearly identified as such and must not be

represented as published information, even if publication is pending. This identification should be included in a parenthetical note in the text and in the reference list with an appropriate notation such as “unpublished,” “to be published,” “personal communication,” etc. Under no circumstances should an author represent another’s work as his or her own.

2.7.4 Copyrighted Material

Credit should be given for material taken from non–NASA publications and included in a NASA report. In the case of copyrighted source material, authors are responsible for securing permission to reprint from the copyright holder and for including appropriate copyright acknowledgment in the NASA publication. Any questions regarding the obtaining of such permissions or for acknowledging a copyright should be referred to the NASA Headquarters or Chief Intellectual Property or Patent Counsel. (See also paragraph 4.5.7.3.)

2.7.5 Trade Names and Trademarks

- The use of trademarks and trade names is discouraged because NASA considers it improper to advertise, endorse, or criticize commercial products or services in its publications. Use generic names whenever possible. Trademarks may be used if their use is the only way to specify material or equipment that is necessary to reproduce the results. A trademark should be used as a proper adjective (i.e., capitalized and modifying the generic term), and on its first appearance in the text must be accompanied by the name of its registered owner. When trade names and trademarks are used in a publication, a disclaimer should be added in the publication on the back of the title page. (See paragraph 2.8.)

- Trade names and trademarks are used in this report for identification only.

- This usage does not constitute an official endorsement, either express or implied, by the National Aeronautics and Space Administration.

2.7.6 Copyright Statutes for NASA–Authored Reports

2.7.6.1 Works Produced by Government Employees

No U.S. copyright protection is available for a work produced by the U.S. Government, i.e., produced by an employee of the U.S. Government as part of his or her official duties. (See U.S.C. Section 105.) For works produced by a NASA employee that are published outside the U.S., NASA, as the employer, is the owner of any foreign copyright that can be asserted on the work.

2.7.6.2 Works Produced by NASA Contractors

Copyright protection is available for a work produced under contract to the U.S. Government only if authority to assert copyright on data first produced under the contract is granted to the contractor in the contract. Ownership of

the copyright may remain with the contractor or may be assigned to the U.S. Government in accordance with the terms of the contract under which copyright is asserted.

2.7.6.3 Publishers Agreements

2.7.6.3.1 General

If a NASA–authored work is to be published by a commercial publisher, authors must consult the NASA Headquarters or Center Intellectual Property or Patent Counsel concerning any agreements with publishers. (See paragraph 5.8.) Questions regarding whether a work was prepared as part of an employee's official duties should also be referred to the NASA Headquarters or Center Intellectual Property or Patent Counsel.

2.7.6.3.2 Standard Agreement

Some copyright transfer forms include a signature block for the U.S. Government author. The Government author must certify in that block that the manuscript was prepared as part of that author's official duties. If this signature block is missing, the following statement should be included either on the form or in a cover letter:

"The work entitled _____ was prepared as part of my official duties as an employee of the U.S. Government and, in accordance with 17 U.S.C. 105, is not available for copyright protection in the United States."

2.7.6.3.3 Coauthors Not Employed by the Government

If the work is a joint effort with a person whose contribution was not made as part of official duties as a U.S. Government employee, the statement should inform the publisher that the employee prepared the work as part of official duties as a U.S. Government employee in coauthorship with another person; identify the coauthor(s); and request the publisher to note the U.S. Government contribution on the published work.

2.7.6.4 Translations

Permission of the copyright holder is required before a work may be translated from one language to another. Such a translation is considered to be a derivative work under copyright law. Permission to translate a work and to make and distribute copies of the translation should be obtained from the copyright holder. Any questions regarding the obtaining of such permission should be referred to the NASA Headquarters or Chief Intellectual Property or Patent Counsel.

2.8 Notices and Disclaimers

The use of disclaimers and similar notices is to be avoided, especially those calling attention to unedited material or denying the technical responsibility of the issuing installation.

2.8.1 Acceptable Notice

A notice may be employed to alert the reader that a particular publication:

- Is a presentation of preliminary findings, subject to revision as analysis proceeds.
- Is a formal draft or working paper, intended to solicit comments and ideas from a technical peer group.
- Is a preprint of a paper to be presented at a professional meeting.
- Uses a trademark for accurate reporting and does not intend endorsement.
- Has limited distribution restrictions.

2.8.2 Sample Notice

Include the following notice, or a similar notice, if applicable on the cover and back of the title page:

"This is a preprint of a paper intended for presentation at a conference. Because changes may be made before formal publication, this preprint is made available with the understanding that it will not be cited or reproduced without the permission of the author."

2.9 Use of Metric Measurements

NMI 8010.2, "Use of the Metric System of Measurement in NASA Programs," states, in part, that it is NASA policy to adopt the metric system of measurement, defined by ANSI/IEEE Standard 268, as the preferred system of weights and measures for NASA. Therefore, the use of metric measures is required in all NASA scientific and technical publications when the activities being documented or reported are performed using metric measurements. Scientific and technical activities performed using inch–pound measurements should be documented or reported using inch–pound measures. Appendix 7 contains references that provide guidelines for the use of metric measurements and for the conversion of metric measures to inch–pound measures or inch–pound measures to metric measures.

Chapter 3. Symposium Presentations and External Publications

3.1 Purpose

This chapter presents the standards and responsibilities that apply when NASA employees prepare papers for or participate in scientific and technical symposia and when they prepare and submit information, e.g., monographs or journal articles, for external (non–NASA) publication. Also presented here are the criteria for the payment of page charges for Government–sponsored research results published in professional journals. Policies and standards presented in this chapter apply to contractors and grantees only if those policies and standards are provided for under the terms of their contracts or grants.

3.2 General Standards

3.2.1 Format

Papers and articles will be prepared according to formats and standards set by individual societies and journals.

3.2.2 Approval for Release of Information

Release of information in symposium presentations or in external publications is approved in accordance with procedures included in chapter 4.

3.2.3 Indication of NASA Support

Authors must make sure that all symposium presentations and external publications that are derived from NASA research and development and related efforts clearly display an indication of NASA's support, preferably as a first–page footnote. Works authored by NASA employees as part of their official duties must include a statement that the work is not available for U.S. copyright. (See paragraph 2.7.6.)

3.2.4 Copies for the NASA STI Database

NASA authors presenting papers not prepared as preprints in the TM series and authors of articles submitted to journals must provide two copies of each paper or article to the NASA CASI for inclusion in the NASA STI Database.

3.2.4.1 Citations

Citations of these papers will be added to the NASA STI Database with information concerning the expected publication.

3.2.4.2 Modification of Citations

If the NASA Lead Center or a Center Publications Office notifies the NASA CASI that the paper or article has not been published in the society

proceedings or in the journal to which it was submitted within approximately 1 year, the citation will be modified to indicate that the paper or article is unpublished.

3.3 Standards for Symposium Presentations

3.3.1 Standards and Review

Papers presented by NASA employees at symposia should contain substantive content in the discipline concerned, make a positive contribution to the state of knowledge, and reflect the high professional standards under which NASA operates.

3.3.1.1 Symposium Papers Review Requirements

Papers proposed for presentation at symposia are reviewed in accordance with the cognizant NASA Headquarters or Center review requirements and the procedures included in chapter 4 of this NPG. Technical accuracy, appropriateness to the subject matter of the meeting, compatibility with NASA's interest and responsibilities, and avoidance of classified or sensitive information should be considered in the review. Since many presentations of papers are followed by their incorporation in proceedings or other professional publications, the technical quality and value of such presentations must be of paramount consideration in the review.

3.3.1.2 Proper Presentation of Symposium Papers

NASA Headquarters or Center reviewers should ensure in their reviews that papers describing NASA program activities are properly presented at symposia by personnel well acquainted with the activities.

3.3.2 Presentation of Unclassified Information Preferred

To promote NASA's ability to meet its statutory requirement to ensure the widest practicable and appropriate dissemination of scientific and technical information, all NASA unclassified presentations or papers should be delivered in unclassified sessions (those that are not labeled classified and/or have attendance restricted to persons having prescribed security clearances). Similarly, NASA unclassified presentations or papers should be included in unclassified documents whenever feasible.

3.3.3 Presentation of Sensitive Information

3.3.3.1 Appropriate Presentation of Sensitive Information

Information of a sensitive nature may not be presented at unrestricted meetings. (See chapter 4.) Authors are encouraged to omit critical or sensitive information from symposium presentations so that meetings can be open when possible and so that publications resulting from these meetings can be made available to the public.

3.3.3.2 Sensitive Technology Presented at Meetings or Workshops

When NASA sponsors an unclassified meeting or workshop covering sensitive technology, the NASA organizers should produce the following:

- A limited distribution document containing the entire meeting results, or preferably,
- An unclassified, unlimited distribution document containing as much information as possible, and an appropriately marked companion document containing only the sensitive material. The distribution of the companion document would be appropriately limited.

3.3.4 Presentation of Classified Information

Classified information must be identified, marked, and handled in accordance with NHB 1620.3, "NASA Security Handbook." Classified information is included in symposium presentations, presented at classified sessions, and/or included in classified proceedings or other publications only when it is essential to the presentation.

3.3.5 Presentation Preprints

A paper presented by a NASA employee may be prepared and published in the NASA TM series as a preprint for distribution if needed for a conference. The Supplementary Notes block of the RDP (SF298) for the preprint must state the name and date of the meeting. These preprints are added to the NASA STI Database.

3.3.6 NASA as a Principal Resource

No commitments, such as producing and distributing a NASA Conference Publication, can be made that will result in NASA becoming the principal resource for a symposium unless it is sponsored by NASA as an official function.

3.4 Standards for External Publications

3.4.1 Payment of Page and/or Other Publisher Charges

Payment of charges imposed by publishers for including articles or papers in their publications is the responsibility of the originating NASA Headquarters office or Center.

3.4.2 Duplicate Publication

Papers submitted as articles for journal publication may be published as NASA TM's. Because data and information created by Government personnel in the course of their duties cannot be copyrighted (note, however, that the format or image in which the journal publishes the information is proprietary to the journal publisher), publishing the information contained in a journal article as a TM does not infringe on any

copyright the journal publisher may assert. Additionally, the release of STI through non–NASA publications does not preclude presentation of similar, more detailed information in any of the NASA STI Report Series, since such publication may be warranted to achieve complete treatment of the topic.

Chapter 4. Reviews and Approvals

4.1 Purpose

This chapter restates and outlines the review and approval policies through which NASA (a) ensures the integrity of its scientific and technical information to the greatest degree practicable, and (b) protects information that cannot, by statute, be generally disseminated.

4.2 Policy

4.2.1 Distribution of NASA STI

The NASA STI Program is responsible for providing the distribution of information produced by and for NASA to the public. This function fulfills the mandate of section 203(a) of the National Aeronautics and Space Act of 1958, which requires NASA to "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof." Reinforcing this Space Act requirement, the Office of Management and Budget (OMB), in Circular A–130, establishes the clear policy that the Agency is responsible and expected to disclose information to the public consistent with the Agency's mission.

4.2.2 Protection of Certain STI Information

Pursuant to law, certain types of information are required to be protected from public disclosure. The Freedom of Information Act provides guidance as to categories of protected information that are exempt from mandatory release. Types of information to which public access may be prohibited or limited include national security classified information, export–controlled information, trade secret information, documents disclosing inventions, and personal information subject to the Privacy Act. Unless a determination is made that the information must be prohibited or restricted, NASA STI is made available to the public. Any questions regarding whether or not certain types of information are required to be protected from public disclosure should be referred to the NASA Headquarters or Chief Intellectual Property or Patent Counsel.

4.2.3 Review of NASA STI

All NASA STI must be reviewed before it is released to (a) verify its adherence to NASA STI publications policy, (b) ensure its conformance to standards for professional reports and technical accuracy, and (c) determine whether public access to the information must be prohibited or restricted. Such review is applicable whether publication is accomplished through printing, submission to external channels for publication through any media, or electronic release on systems accessible by persons or institutions outside NASA. This review is also applicable to presentations to be made before professional audiences, whether or not the presentation is accompanied by written material. Grant reports are exempt from this requirement unless specifically stated in the grant, since reviews of grant reports published in the NASA STI Report Series are controlled and implemented by the cognizant NASA Headquarters Program Office in accordance with internal review requirements; however, it remains the

responsibility of either the grantee or the NASA office issuing the internal review requirements to ensure that such reports are properly reviewed for possible publication restrictions.

4.3 Review for Adherence to Publications Policy

The review for adherence to publications policy is required to ensure that NASA technical reports meet the requirements of NPD 2200.1, “Management of NASA Scientific and Technical Information (STI),” and this NPG. NASA Lead Center or Center Technical Publications Managers are responsible for this review.

4.4 Professional and Technical Reviews

4.4.1 Definitions

- **Professional reviews** are performed by individuals or groups with technical knowledge or background tempered by interdisciplinary expertise in history, education and program management. Such reviews assess the quality of the document content in terms of its readability, its communication of information, and its suitability for a particular audience without particular focus on content.

- **Technical reviews** are performed by peer(s) having expertise within the technical discipline of the activity or research being documented. Such reviews assess the technical integrity and merit of the activity or research being performed and the results being documented without regard to the effectiveness of the document at communicating the information.

4.4.2 Responsibilities

Professional and technical reviews are required to ensure that NASA STI reports conform to NASA Headquarters office and Center standards for professional reports and technical accuracy. The Officials–in–Charge of Headquarters Offices and Directors of Centers have the responsibility to ensure the appropriate review and approval of the content of NASA–sponsored STI resulting from work conducted under their authority for presentation or publication through any channels and in any media, including electronic dissemination. Implicit in this approval is the approval for the preparation, printing, and appropriate dissemination of the STI as a work of NASA.

4.4.3 Review Requirements

The officials mentioned in paragraph 4.4.2 will ensure that the appropriate minimum review of the STI Report Series is completed, as indicated by the following levels of NASA STI Report Series professional and technical review requirements:

STI Report Series	Professional and Technical Review Requirement
TP	Technical review by committee of peers or expert single reviewer
TM	Review by technical management
CR	Review by NASA technical management or expert reviewer(s)
CP	No technical review required
SP	Professional review controlled by originating HQ Office or NASA Center
TT	No technical review; some printing authorization

4.5 Document Availability Authorization (DAA) Reviews

The author or the technical monitor, in collaboration with his or her technical supervisor, will initially recommend the availability category for a NASA document or contractor report in accordance with the following criteria.

4.5.1 For Official Use Only (FOUO)

See the guidelines specified in NHB 1620.3, “NASA Security Handbook.”

4.5.2 National Security Review

Originating NASA Headquarters and Center offices are responsible for the review of STI to determine whether the information is subject to security classification. Final security classification rests with NASA Headquarters Security, and documents containing information subject to security classification are addressed in NHB 1620.3, “NASA Security Handbook” and NHB 2410.9, “NASA Automated Information Security Handbook.” Originating NASA Headquarters and Center offices, in conjunction with Headquarters and Center Export Administrators, are also specifically responsible for the review and approval of policy and plans for the intended release of NASA technical and programmatic information to a foreign government. The originating NASA Headquarters and Center offices are also specifically responsible for the review and approval of all material intended for release or publication when such material contains information pertaining to the Department of Defense, e.g., aeronautics programs, space launches, or space operations, regardless of the source of the materials.

4.5.3 Export Control Review

4.5.3.1 Application

Export control limitations are applied to information subject to (a) the Arms Export Control Act, 22 U.S.C. 2778 et seq.; (b) the Export Administration Act of 1979, Pub. L. 96–72 Stat. 503, 50 U.S.C. app. 2401 et seq.; (c) the International Traffic in Arms Regulations (ITAR), 22 CFR Part 120–130; and (d) Export Administration Regulations (EAR), 15 CFR Parts 730–774. These regulations establish lists or categories of technical data subject to export control and may not be exported or disclosed to foreign nationals without proper authority. The term exported includes the provision of information to a foreign national (including U.S. citizens representing foreign nationals if that individual intends to provide the information to a foreign national) either within the United States or abroad. Placing information on the World Wide Web in an unrestricted manner is deemed an export.

4.5.3.2 Review Requirements

The export control limitations review is required to ensure that NASA STI reports; conference, meeting, and symposia presentations; and external publications containing information subject to control under pertinent U.S. export laws or regulations are suitably protected. Each such publication or presentation must be reviewed on a case–by–case basis by or in conjunction with the Headquarters or Center Export Administrator prior to release through publication or presentation at a meeting open to the public in which foreign participation is likely or invited. Under certain conditions, officials overseeing specific contracts or projects may be granted limited delegations of authority to approve publications when the contracts or projects are restricted to topics exempt from export controls. These limited delegations are coordinated on a case–by–case basis through the NASA Office of External Relations and the cognizant NASA Headquarters Program Office.

4.5.4 International Traffic in Arms Regulations (ITAR – 22 CFR 120–130)

4.5.4.1 Definitions

ITAR regulations implement the Arms Export Control Act, and contain the United States Munitions List (USML). The USML lists articles, services, and related technical data that are designated as “Defense Articles” and “Defense Services,” pursuant to Sections 38 and 47(7) of the Arms Export Control Act. The ITAR is administered by the U.S. Department of State. “Technical Data” as defined in the ITAR does not include information concerning general scientific, mathematical, or engineering principles commonly taught in schools, colleges, and universities or information in the public domain (as that term is defined in 22 CFR 120.11). It also does not include basic marketing information on function and purpose or general system descriptions. For purposes of the ITAR, the following definitions apply.

- “Defense Article” (22 CFR 120.6). A “Defense Article” is any item or “Technical Data” on the United States Munitions List (22 CFR 121.1). The term includes “Technical Data” recorded or stored in any physical form, models, mockups, or other items that reveal “Technical Data” directly relating to items designated in the USML. Examples of “Defense Articles” included on the USML are (1) launch vehicles, including their specifically designed or modified components, parts, accessories, attachments, and associated equipment, (2) remote sensing satellite systems, including ground control stations for telemetry, tracking, and control of such satellites, as well as passive ground stations if such stations employ any cryptographic items controlled on the USML, or they employ any uplink command capability, all components, parts, accessories, attachments, and associated equipment (including ground support equipment) that is specifically designed, modified, or configured for such systems. (See 22 CFR 121.1 for the complete listing.)
- “Technical Data” (22 CFR 120.10). Information which is required for the design, development, production, manufacture, assembly, operation, repair, testing, maintenance, or modification of “Defense Articles.” This includes information in the form of blueprints, drawings, photographs, plans, instructions, and documentation.
- Classified information relating to “Defense Articles” and “Defense Services.”
- Information covered by an invention secrecy order (35 U.S.C. 181 et seq.; 35 CFR Part 5).
- Software directly related to “Defense Articles,” including, but not limited to, system functional design, logic flow, algorithms, application programs, operating systems, and support software for design, implementation, test, operations, diagnosis, and repair.

“Technical Data” as defined in the ITAR does not include information concerning general, scientific, mathematical, or engineering principles commonly taught in schools, colleges, and universities or information in the public domain (as that term is defined in 22 CFR 120.11). It also does not include basic marketing information on function and purpose or general system descriptions.

4.5.4.2 Notice of Availability Limitation

If NASA STI contains “Technical Data” or “Defense Articles” as defined above, it is restricted by ITAR and all copies must bear the “ITAR Notice” shown in Exhibit 4–1 at the end of this chapter. Release or distribution of the same information by NASA contractors is subject to the same notice.

4.5.5 Export Administration Regulations (EAR – 15 CFR 730–744)

4.5.5.1 Definitions

EAR regulations implement the Export Administration Act and contain the Commerce Control List (CCL). The CCL lists commodities, technology,

and software subject to the export control authority of the U.S. Department of Commerce. The items on this list are export controlled for reasons of national security, foreign policy, proliferation, and/or short supply. These regulations are administered by the U.S. Department of Commerce. Information subject to EAR export restrictions includes that specific "Technology" identified in the CCL (15 CFR 774).

- "Technology" (Supplement 2 to 15 CFR 774). Specific information necessary for the development, production, or use of a product on the CCL. The information may be in the form of technical data or technical assistance.
- "Technical Data." Information that may take forms such as blueprints, plans, diagrams, models, formulae, tables, engineering designs and specifications, manuals, and instructions written or recorded on other media or devices such as disk, tape, or read–only memories.
- "Software." A collection of one or more computer or microcomputer programs fixed in any tangible medium of expression.
- "Development Information." Specific information necessary for any stages prior to serial production, such as design, design research, design analyses, design concepts, assembly and testing of prototypes, pilot production schemes, design data, process of transforming design data into a product, configuration design, integration design, and integration design layouts.
- "Production Information." Specific information necessary on any production stages, such as product engineering, manufacture, integration, assembly (mounting), inspection, testing, and quality assurance.
- "Use Information." Specific information necessary for operation, installation (including onsite installation), maintenance (checking), repair, overhaul, and refurbishment.
- Examples of information not subject to export control under the EAR. Such examples include (a) information that is publicly available via literature, library, patent, or seminar; (b) fundamental, basic and applied research in which the resulting information is ordinarily published and shared broadly within the scientific community, as well as university–based, corporate, or FFRDC (Federally Funded Research and Development Center–based) research that has no restrictions on publication of the resulting information; (c) educational information taught in a college catalog course; (d) information contained in patent applications that are not subject to 37 CFR Part 5 secrecy orders; or (e) basic marketing information on function or purpose or general system descriptions that the producer would make available to its closest competitors at no more than the cost of reproduction.

4.5.5.2 Notice of Availability Limitation

If NASA STI contains "Technology" controlled by EAR, all copies must bear the "EAR Notice" shown in Exhibit 4–2 at the end of this section.

Release or distribution of the same information by NASA contractors is subject to the same notice.

4.5.6 Presentations and Publications

Approval by the NASA Headquarters or Center Export Administrator is required prior to the release of NASA STI to audiences that may include foreign nationals through any media. Examples are (a) presentations at “open” meetings in the U.S., which may include foreign nationals, or presentations at meetings held in foreign countries; (b) publications intended for public dissemination and/or distribution in foreign countries; and (c) electronic releases through global networks such as the Internet.

4.5.7 Confidential Commercial Material

Confidential commercial documents are those containing trade secrets and SBIR documents.

4.5.7.1 Trade Secret

4.5.7.1.1 Definition

A “trade secret” is information (1) that is used in a business, (2) that is secret, and (3) that gives a competitive advantage to the person with knowledge of it. Trade secrets include confidential commercial information.

4.5.7.1.2 General

- A party to a NASA contract, grant, or cooperative arrangement may deliver information which constitutes a trade secret, is otherwise confidential commercial information, or is subject to disclosure restrictions. Under certain limited circumstances, NASA employees may produce technical information which may be treated as a trade secret or confidential commercial information. The cognizant program or project office is responsible for ensuring that such data is properly identified and marked to indicate restricted dissemination. Such information may also be subject to export control under the provisions cited above, in which case markings applicable to both restrictions are required. Any questions regarding such information should be referred to the NASA Headquarters or Chief Intellectual Property or Patent Counsel.

- In the performance of a contract, grant, or cooperative arrangement, usually which is cost–shared, the contractor, grantee, or partner may produce technical data which qualifies as trade secret information. The objective of most cost–shared arrangements is the development of products or

processes which have potential commercial applications. If such data are properly marked by its originator, NASA agrees to protect it from disclosure as long as the data remains trade secret information.

- Section 303 of the National Aeronautics and Space Act provides that information produced by NASA employees, in carrying out NASA's participation in a cooperative arrangement, may be protected for a period of up to 5 years, if such information would constitute a trade secret or confidential commercial information if it had been produced by the non–Government party. This provision is generally applicable to cooperative arrangements which have the objective of developing commercial products or processes. Such data should be properly marked by the cognizant NASA project office. NASA agrees to protect the data for the period of time (up to 5 years) established in the cooperative arrangement between NASA and the other party.

4.5.7.1.3 Notice of Availability Limitation

If NASA STI is restricted due to trade secrets or confidential commercial information, all distributed copies must contain the marking or legend supplied by the originator of the trade secret or confidential commercial information and, if applicable, one of the document limitations listed below along with the appropriate expiration. Copying and dissemination of such marked information must be consistent with such markings or legends and any applicable document limitations. Any questions regarding the appropriate marking or legend and any applicable document limitations to apply to such information and to whom such information may be distributed should be referred to the NASA Headquarters or Chief Intellectual Property or Patent Counsel.

- U.S. Government Agencies and U.S. Government Agency Contractors Only
- NASA Contractors and U.S. Government Agencies Only
- U.S. Government Agencies Only
- NASA Personnel and NASA Contractors Only
- NASA Personnel Only
- Available Only with Approval of Issuing Office (Program Office or NASA Center)
- Limited until _____/____/____ (if applicable)

4.5.7.2 SBIR Data

4.5.7.2.1 General

Small Business Innovation Research (SBIR) program reports may be publicly available immediately if a letter of permission

from the contractor is on file, or must be restricted per the SBIR agreement, usually for 4 years.

4.5.7.2.2 Notice of Availability Limitation

SBIR program documents must bear the “SBIR Rights Notice” shown in Exhibit 4–3 and one of the document limitations listed in paragraph 4.5.7.1.3, along with the appropriate expiration. Copying and disseminating of such documents must be done in conformance with this notice.

4.5.7.3 Copyright

4.5.7.3.1 Definition

Contracts, grants, and cooperative arrangements often permit the contractor, grantee, or recipient to assert copyright in reports and other publications first produced in the performance of the specified activity. Ordinarily, the Government receives a license to publicly distribute these documents for governmental purposes. Public distribution of the results of work funded by the Government is a governmental purpose. The cognizant program or project office provides written notification to the responsible NASA Lead Center or Center Publications Office of instances in which documents containing a copyright notice are provided without a license authorizing public distribution. Documents produced by Government employees in the performance of official duties are not subject to copyright protection in the United States.

4.5.7.3.2 Notice of Availability Limitation

If NASA STI is restricted due to copyrighted content, all distributed copies must bear the “Notice for Copyrighted Information” shown in Exhibit 4–4 at the end of this chapter. Release or distribution of the same information by NASA contractors is subject to the same notice.

4.5.8 Publicly Available Documents

All NASA STI not meeting any of the criteria for distribution limitation described herein will be considered approved for public release. Information approved for public release will be made available through the NASA CASI, the National Technical Information Service, the Federal Depository Library Program, and any and all other pertinent distribution channels, in keeping with the policy set forth in OMB Circular A–130.

4.5.9 Documents Disclosing Inventions

4.5.9.1 Definition

Under 35 U.S.C. 205 and implementing regulations, agencies are to withhold from release to the public documents that contain information

about an invention in which the Government owns or may own a right, title, or interest (including a nonexclusive license). This applies to inventions made and reported by NASA employees and inventions made and reported by NASA contractors and grantees. Release is delayed in order for a patent application to be filed.

4.5.9.2 Notification

The party making and disclosing or reporting the invention is responsible for notifying the Agency as to the nature of the information and the invention to which it relates. In the case of reports submitted under contract or grant, notification should be made to the Contracting Officer or Grant Officer, the designated Patent Representative, and the STI Manager. In the case of NASA–prepared documents, notification should be made to the Project Officer, the Center Patent or Intellectual Property Counsel, and the STI Manager.

4.5.9.3 Notification Response

All documents disclosing an invention (except security classified documents disclosing an invention) for which notification has been made must be withheld by the originating office, with notice to the NASA Lead Center or Center Technical Publications Manager until the patent applications process is complete, regardless of availability category and any Blanket Availability Authorization that may have been granted. Such withholding does not require NASA Program Office approval.

4.5.10 Nonstandard Restrictions

Use of restrictions other than those specified in this chapter must receive prior approval from the Director, Information Resources Management Division. Requests for use of nonstandard restrictions must include the following information:

- A clear statement of who can and cannot receive the document.
- The time limit for the restriction.
- The reason for the restriction.
- A copy of the legal citation on which the proposed restriction is based.

4.5.11 Delegations

The Document Availability Authorization process is controlled by the Headquarters Program Offices and the Office of External Relations. The responsibility held by the Officials–in–Charge of Headquarters Offices may be delegated to NASA Centers with notice to the Director, Information Resources Management Division, where applicable, with the provision that such delegations are in writing and approved by the Associate

Administrator for External Relations and by the Associate Administrator for Management Systems and Facilities. This delegation must not include policy and standards information requiring review by the Office of External Relations. The delegation is sent to the Center Director, and copies are sent to all concurring NASA Headquarters offices and to the Center Document Availability Authorization (DAA) representative and the Center Export Administrator.

4.5.12 Documentation of DAA Review and Approval

- Approvals should be documented on NASA Form (NF) 1676, Scientific and Technical Document Availability Authorization (DAA). (See appendix 6.) The DAA also documents which restrictions, if any, must be applied to the distribution of the publication or presentation. Individuals originating STI in any form may consult with the NASA Headquarters or Center DAA representative and, as appropriate, the Headquarters or Center Export Administrator, who can explain the availability categories and authorization requirements, and with their NASA Program or Project Manager or Contract Technical Monitor.

- Copies of NF 1676, NASA Scientific and Technical DAA form, are available in print formats (Portable Document Format (PDF) and Postscript (PS)), which can be printed and completed by hand or using a typewriter. They are available on the NASA STI Program home page (***http://www.sti.nasa.gov***). Electronic versions (in PerFORM PRO, PerFORM PRO Plus, and FormFlow) can be completed online and printed. They are available on the NASA Headquarters Electronic Forms home page (***http://www.hq.nasa.gov/help/forms.html***). Use of the form in other media and in other formats is permitted as long as the data elements contained on the printed version of the NF 1676 are retained.

4.6 Special Concerns

4.6.1 Grant and Cooperative Agreement Releases

In accordance with NPG 5800.1, “Grant and Cooperative Agreement Handbook,” the widest practicable dissemination should be made of results of a NASA grant or cooperative agreement, subject to the possible restrictions noted above. Release approval by the NASA grant officer is required only when the grantee requests the information be published as a NASA STI Report (e.g., NASA CR).

4.6.2 Reports Funded by Other Agencies

NASA STI Reports that result from efforts fully funded by other Government agencies, e.g., the Department of Defense or the Department of Energy, do not require a specific NASA release authorization if the report has been subject to the review process of that agency. Such reports will carry the limitations assigned by the other Government agency. If a review has not been made, a DAA form from the appropriate program is required. Reports resulting from efforts funded in part by NASA require a DAA form.

Exhibit 4–1. International Traffic in Arms Regulations (ITAR) Notice

International Traffic in Arms Regulations (ITAR) Notice

This document contains information which falls under the purview of the U.S. Munitions List (USML), as defined in the International Traffic in Arms Regulations (ITAR), 22 CFR 120–130, and is export controlled. It shall not be transferred to foreign nationals in the U.S. or abroad, without specific approval of a knowledgeable NASA export control official, and/or unless an export license/license exemption is obtained/available from the United States Department of State. Violations of these regulations are punishable by fine, imprisonment, or both.

Exhibit 4–2. Export Administration Regulations (EAR) Notice

Export Administration Regulations (EAR) Notice

This document contains information within the purview of the Export Administration Regulations (EAR), 15 CFR 730–744, and is export controlled. It may not be transferred to foreign nationals in the U.S. or abroad without specific approval of a knowledgeable NASA export control official, and/or unless an export license/license exception is obtained/available from the Bureau of Export Administration (BXA), United States Department of Commerce. Violations of these regulations are punishable by fine, imprisonment, or both.

Exhibit 4–3. SBIR Rights Notice

SBIR Rights Notice

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Exhibit 4–4. Notice for Copyrighted Information

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Chapter 5. Printing and Dissemination

5.1 Purpose

To ensure the widest practical and appropriate dissemination of the results of NASA STI activities, NASA adheres to printing regulations that direct printing and reproduction procedures, sustains an electronic and nonprint media duplication capability, and maintains a variety of distribution mechanisms that ensure easy access to the NASA STI Report Series as well as other STI–related products and services.

5.2 Responsibilities

- All duplicating or printing of NASA STI is performed in accordance with NPD 1490.1, "NASA Printing, Duplicating, Copier, Forms, Reports, and Mail Management," and NHB 1490.5, "NASA Printing, Duplicating, and Copying Management Handbook."
- General distribution requirements for the NASA STI Program are determined by the NASA Lead Center Technical Publications Manager.
- Distribution and dissemination requirements for individual publications are determined by the author and his or her Program Office in coordination with the NASA Lead Center or Center Publications Manager.
- Grantee reports are exempt from dissemination controls, unless otherwise stated in the grant.
- Responsibility for disseminating publications in the NASA STI Report Series rests with both the issuing office and the NASA CASI; initial distribution is the responsibility of the issuing office, and secondary distribution is the responsibility of the NASA CASI. A discussion of initial and secondary distribution procedures is in paragraph 5.6.

5.3 Duplication/Printing for Initial Distribution

5.3.1 Print Media

The duplication or printing of publications in the NASA STI Report Series for initial distribution is accomplished through NASA Lead Center or Center Publications Offices using NASA Headquarters or Center duplicating/copying facilities and/or GPO regional printing procurement offices, in accordance with NPD 1490.1, "NASA Printing, Duplicating, Copier, Forms, Reports, and Mail Management," and NHB 1490.5, "NASA Printing, Duplicating, and Copying Management Handbook."

5.3.2 Electronic and Nonprint Media

The release of STI in electronic or nonprint media, which may or may not be issued jointly with a print version, in the NASA STI Report Series must be made in accordance with the standards in paragraph 2.6 of this NPG.

5.4 Microreproduction for Archival Purposes

NASA print media STI Report Series processed by the NASA CASI are microfilmed to provide a fast, economical, and efficient mechanism for archiving these publications. Microfiche are also

made available to other agencies such as NTIS and GPO in order to fulfill NASA's obligation to provide for the widest practicable and appropriate dissemination of information concerning NASA activities.

5.5 Duplication for Secondary Distribution

5.5.1 Print Media

NASA STI is disseminated to researchers worldwide on microfiche (duplicates of the NASA CASI archival master) or in a paper copy format drawn from stock or reproduced from microfiche (blowbacks). The NASA CASI provides paper and/or microfiche documents to requesters on demand (i.e., secondary distribution).

5.5.2 Electronic and Nonprint Media

The NASA CASI is capable of replicating for secondary distribution information packages that may be composed of print and/or some types of electronic and nonprint media. Capabilities of the NASA CASI are included in Appendix 9.

5.6 Dissemination of NASA STI Report Series

5.6.1 Initial Distribution

Initial distribution, in print and/or electronic and nonprint media, is made at the time the report is first produced. Initial distribution is composed of standard or nonstandard distributions, both of which include distribution to the NASA CASI. (See Table A3–1.)

5.6.1.1 Standard Distribution

NASA's standard distribution provides the widest practicable dissemination of publications in the NASA STI Report Series. Through standard distribution, copies of reports are distributed to the NASA CASI and to NASA Centers, domestic and international organizations, corporations, and universities that are registered with the NASA CASI to receive NASA STI publications in any or all of the 11 broad subject divisions. (See Appendix 2.)

5.6.1.2 Nonstandard Distribution

Nonstandard distribution provides a narrow dissemination for reports that are preliminary or specialized interest. Nonstandard distribution provides copies of these reports in print and/or electronic and nonprint media to NASA Center libraries and the NASA CASI, and to other government agencies such as NTIS, the Superintendent of Documents at GPO, and Federal Depository libraries.

5.6.1.3 Distribution to the NASA CASI

All NASA STI Managers and procurement personnel ensure that copies of all unclassified publications (appropriately marked with any restrictive

legends from chapter 4), including print and electronic and nonprint supplements, in the NASA STI Report Series produced by NASA Headquarters offices or Centers are forwarded to the NASA CASI. For NASA STI reports printed in standard black and white, 8– by– 11– inch page format, two copies are required. For NASA STI reports printed with color or on a page size other than 8 by 11 inches, 15 copies are required. This is accomplished by including the NASA CASI in the appropriate initial distribution of each publication. Copies provided to the NASA CASI receive value–added services, including bibliographic processing and accessioning into the NASA STI Database, announcement in a variety of published bibliographies of data base contents, and archiving.

5.6.2 Secondary Distribution

Secondary distribution, in print and/or electronic and nonprint media, is made to authorized requesters on demand.

5.6.3 Local Distribution

Local distribution of NASA STI publications may be made in addition to standard or nonstandard distribution. Originators hold responsibility for local distribution list(s) for their publications and provide the lists to the NASA Lead Center or Center Publications Office. Such lists may include known authors in the field, conference registrants, members of organizations or groups known to have an interest in the field, and/or persons who have requested similar prior papers. Local distribution lists may also contain the names of persons included in lists obtained from contractors and other agencies.

5.6.4 Dissemination Responsibilities

5.6.4.1 Initial Distribution

5.6.4.1.1 Standard Distribution

Standard distribution copies are disseminated by the sponsoring NASA Headquarters office or Center. The NASA Lead Center or Center Publications Office obtains the print volume and mailing labels for standard distribution by faxing or mailing a completed RDP (SF298) and a request for labels to the NASA CASI Editorial Services. The Labels Acquisition Procedure is described in Appendix 8.

5.6.4.1.2 Nonstandard Distribution

Nonstandard distribution copies are disseminated by the sponsoring NASA Lead Center or Center Publications Office and the NASA CASI. The NASA Lead Center or Center Publications Office obtains the print volume (currently, nine copies) and mail-

ing labels needed for nonstandard distribution to the NASA Center libraries and the NASA CASI by faxing or mailing a completed RDP (SF298) and a request for labels to the NASA CASI Editorial Services. The Labels Acquisition Procedure is described in Appendix 8. The NASA CASI provides nonstandard distribution to other government agencies such as NTIS, the Superintendent of Documents at GPO, and Federal Depository libraries.

5.6.4.1.3 Standard and Nonstandard Distribution Print Volume and Mailing Labels

The standard and nonstandard distribution print volume and mailing labels that are provided upon request by the NASA Lead Center or Center Publications Office include two copies for the NASA CASI. For NASA STI reports printed with color or on a page size other than 8 by 11 inches, an additional 13 copies must be sent to the NASA CASI Document Supply.

5.6.4.2 Secondary Distribution

All secondary distribution is made by the NASA CASI.

5.6.4.3 Local Distribution

Local distribution copies are disseminated by the sponsoring NASA Headquarters Office or Center, in conjunction with the standard or nonstandard distribution when the local distribution is performed as an initial distribution. The NASA Lead Center or Center Technical Publications Manager is responsible for providing mailing labels for local distribution. Mailing labels for local distribution must include as a return address either the author's duty station (Center and Mail Code) or the address of the NASA Lead Center or Center Technical Publications Manager supporting the author's duty station.

5.6.5 Announcement and Distribution of Limited or Classified Reports

Two copies of all limited NASA STI Report Series publications receiving local and nonstandard distribution in lieu of standard distribution are to be provided to the NASA CASI by the sponsoring NASA Headquarters Office or Center, as are two copies of the unclassified RDP for all classified reports. Announcement, distribution, and archiving of limited NASA STI reports is performed in accordance with the assigned limitation. (See chapter 4.) The unclassified RDP's for classified NASA STI reports are used only for bibliographic processing.

5.6.6 Document Distribution Services

The NASA CASI provides various mechanisms through which STI can be received automatically or on demand. (See Appendix 9.)

5.6.7 NASA STI Help Desk

For additional information concerning announcement and distribution, contact the NASA Lead Center or Center Technical Publications Manager or — —

- Telephone the NASA STI Help Desk at 301–621–0390.
- Send a fax to the NASA STI Help Desk at 301–621–0134.
- Send an e–mail via Internet to help@sti.nasa.gov
- Write to the NASA STI Help Desk at the NASA Center for AeroSpace Information, 7121 Standard Drive, Hanover, MD 21076–1320.

5.7 Funding the Printing/Duplicating and Dissemination of the NASA STI Report Series

5.7.1 Initial Distribution

Funding the printing and dissemination of sufficient copies of NASA STI Report Series for initial distribution (standard, nonstandard, and/or local), in both print and electronic and nonprint media, is the responsibility of the sponsoring NASA Headquarters Office or Center.

5.7.2 Secondary Distribution

Duplication of NASA STI Report Series, in both print and electronic and nonprint media, for secondary distribution is funded by the NASA STI Program. The NASA Headquarters STI Program will have the option of riding the original production order (i.e., adding the anticipated secondary distribution requirement to the sponsoring office's production order covering the initial distribution requirement) on a cost–reimbursable basis.

5.7.3 Processing by the NASA CASI

The value–added processing, announcement, and archiving services described in paragraph 5.6.1.3 are funded by the NASA STI Program, NASA Headquarters.

5.8 Use of Private Publishers

The decision to use private publishers (e.g., society and nonprofit publishers and printers) for printing NASA STI involves several considerations. When appropriated funds were used to create information to be published, printing services must be provided by the GPO, and the information shall not be made available to a private publisher for initial publication. If appropriated funds will not be used, other factors (e.g., type and content of the publication, audience, statutory requirements, past practice, and distribution to depository libraries) must be taken into consideration, and both the Office of the General Counsel and the office responsible for the preparation of the work must be consulted. The contractual arrangement with the publisher would not be a procurement or assistance transaction but rather a Space Act agreement. (See NMI 1050.9 for signature authority.)

Appendix 1. List of Acronyms

ADDS. Automatic Document Distribution Service, a subscription service for NASA publications

AIIM. Association for Information and Image Management

ANSI. American National Standards Institute

CASI. See NASA CASI

CD–ROM. Compact Disk–Read Only Memory

CFR. Code of Federal Regulations

CP. Conference Publication

CR. Contractor Report

COTR. Contracting Officer's Technical Representative

DAA. Document Availability Authorization

EAR. Export Administration Regulations

FAR. Federal Acquisition Regulations

GPO. Government Printing Office

IEEE. Institute of Electrical and Electronics Engineers

ISBN. International Standard Book Number

ISSN. International Standard Serial Number

ITAR. International Traffic in Arms Regulations

NARA. National Archives and Records Administration

NASA CASI. NASA Center for AeroSpace Information

NISO. National Information Standards Organization

NMI. NASA Management Instruction

NPD. NASA Policy Directive

NPG. NASA Procedures and Guidelines

NTIS. National Technical Information Service

NSS. NASA Safety Standard

PMS. Pantone® Matching System

RDP. Report Documentation Page (SF298)

RTOP. Research and Technology Objectives and Plans

SF. Standard Form

SP. Special Publication

TM. Technical Memorandum

TP. Technical Publication

TRS. Technical Report Server

TT. Technical Translation

U.S.C. United States Code

Appendix 2. NASA STI Database Subject Divisions and Categories

The table on the following page lists the subject divisions and categories used to catalog NASA STI reports before they are processed and entered in the NASA STI Database.

Table A2–1. NASA STI Database Subject Divisions and Categories

AERONAUTICS
01 Aeronautics
02 Aerodynamics
03 Air Transportation and Safety
04 Aircraft Communications and Navigation
05 Aircraft Design, Testing and Performance
06 Aircraft Instrumentation
07 Aircraft Propulsion and Power
08 Aircraft Stability and Control
09 Research and Support Facilities (Air)

ASTRONAUTICS
12 Astronautics (General)
13 Astrodynamics
14 Ground Support Systems and Facilities (Air)
15 Launch Vehicles and Space Vehicles
16 Space Transportation
17 Space Communications, Spacecraft Communications, Command and Tracking
18 Spacecraft Design, Testing and Performance
19 Spacecraft Instrumentation
20 Spacecraft Propulsion and Power

CHEMISTRY AND MATERIALS
23 Chemistry and Materials (General)
24 Composite Materials
25 Inorganic and Physical Chemistry
26 Metallic Materials
27 Nonmetallic Materials
28 Propellants and Fuels
29 Materials Processing

ENGINEERING
31 Engineering (General)
32 Communications and Radar
33 Electronics and Electrical Engineering
34 Fluid Mechanics and Heat Transfer
35 Instrumentation and Photography
36 Lasers and Masers
37 Mechanical Engineering
38 Quality Assurance and Reliability
39 Structural Mechanics

GEOSCIENCES
42 Geosciences (General)
43 Earth Resources and Remote Sensing
44 Energy Production and Conversion
45 Environment Pollution
46 Geophysics
47 Meteorology and Climatology
48 Oceanography

LIFE SCIENCES
51 Life Sciences (General)
52 Aerospace Medicine
53 Behavioral Sciences
54 Man/System Technology and Life Support
55 Space Biology

MATHEMATICAL AND COMPUTER SCIENCES
59 Mathematical and Computer Sciences (General)
60 Computer Operations and Hardware
61 Computer Programming and Software
62 Computer Systems
63 Cybernetics
64 Numerical Analysis
65 Statistics and Probability
66 Systems Analysis
67 Theoretical Mathematics

PHYSICS
70 Physics (General)
71 Acoustics
72 Atomic and Molecular Physics
73 Nuclear and High–Energy Physics
74 Optics
75 Plasma Physics
76 Solid-State Physics
77 Thermodynamics and Statistical Physics

SOCIAL SCIENCES
80 Social Sciences (General)
81 Administration and Management
82 Documentation and Information Science
83 Economics and Cost Analysis
84 Law, Political Science and Space Policy
85 Urban Technology and Transportation

SPACE SCIENCES
88 Space Sciences (General)
89 Astronomy
90 Astrophysics
91 Lunar and Planetary Exploration
92 Solar Physics
93 Space Radiation

GENERAL
99 General

Appendix 3. Types of NASA STI Publications, Related STI Report Series, and Suggested Distribution

The two–page table on the following pages lists the various types of documents that may be published and disseminated in the NASA STI Report Series.

Table A3–1. Types of NASA Publications, Related STI Report Series, and Suggested Distribution (See also next page)

Manuscript Contents	Appropriate Series	Appropriate Initial Distribution (see also paragraph 5.6)
Article for a professional journal	None required; TP for expanded treatment and TM for preprint	2 copies to CASI (15 if the article contains color or is a page size other than 8 by 11 inches)
Article for a technical magazine	None required; TP for expanded treatment and TM for preprint	2 copies to CASI (15 if the article contains color or is a page size other than 8 by 11 inches)
Atlas of scientific imagery	TP or SP	Standard
Bibliography: Continuing Extensive annotation Minimal annotation	 SP TP TM	 Standard Standard Standard or Nonstandard
Contractor or grantee results and findings	CR, TP, or SP	Standard or Nonstandard
Critical review of the literature	TP	Standard
Critical tables	TP	Standard
Data compilation: Extensive use Limited use	 TP TM	 Standard Nonstandard
Design standards	TP	Standard
Dissertation or thesis by employee, relating to work	TM	Standard or Nonstandard
Engineering report	TP	Standard
Handbook	TP	Standard
History	SP	Standard
Letter (e.g., for a professional journal)	None required	2 copies to CASI (15 if the report contains color or is a page size other than 8 by 11 inches)
Limited distribution report	TP or TM	Standard or Nonstandard
Literature survey, review	TP	Standard
Management Report	SP (6000 series)	Nonstandard
Manual	TP or TM	Standard or Nonstandard
Monograph	TP	Standard
Preliminary results report	TM	Nonstandard

Manuscript Contents	Appropriate Series	Appropriate Initial Distribution (see also paragraph 5.6)
Preprint of paper for a professional meeting	TM	Standard or Nonstandard
Proceedings of a workshop, conference, seminar, etc.	CP	Standard
Program description or summary	SP	Standard
Report to another agency	TM	Standard or Nonstandard
Research report	TP	Standard
Review paper	TP	Standard
Security–classified report	TP or TM	Two copies of the unclassified RDP to CASI
Sponsored research report: NASA sponsor Non–NASA sponsor	 CR TM	 Standard or Nonstandard Standard or Nonstandard
State–of–the–art review	TP	Standard
Technical report—complete, comprehensive	TP	Standard
Textbook, scientific or technical	TP	Standard
Translation	TT	2 copies to CASI (15 if the translation contains color or is a page size other than 8 by 11 inches)
Working paper (external circulation)	TM	Nonstandard

Appendix 4. Standard Front and Back Covers and Title Pages

The following layouts illustrate the STI Report Series' standard covers and title pages. They also depict use of the standard elements (report number and title) described in paragraph 2.5.3 of this NPG. A separate document, "NASA STI Page Layout Samples," suggests typefaces, font sizes, and interior page formats for publications released in the STI Report Series. Both the covers and title pages on the following pages and the "NASA STI Page Layout Samples" document are available on the NASA STI Program home page (***http://www.sti.nasa.gov/layout.htm***). Since these layouts were designed for printed documents, it is recognized that they may not be appropriate for use with STI that is distributed in nonprint media. While use of the standard covers and title page layouts depicted in this Appendix is required for printed documents, the layouts may be adapted as needed for STI produced in nonprint media. The standard elements must be included regardless of media.

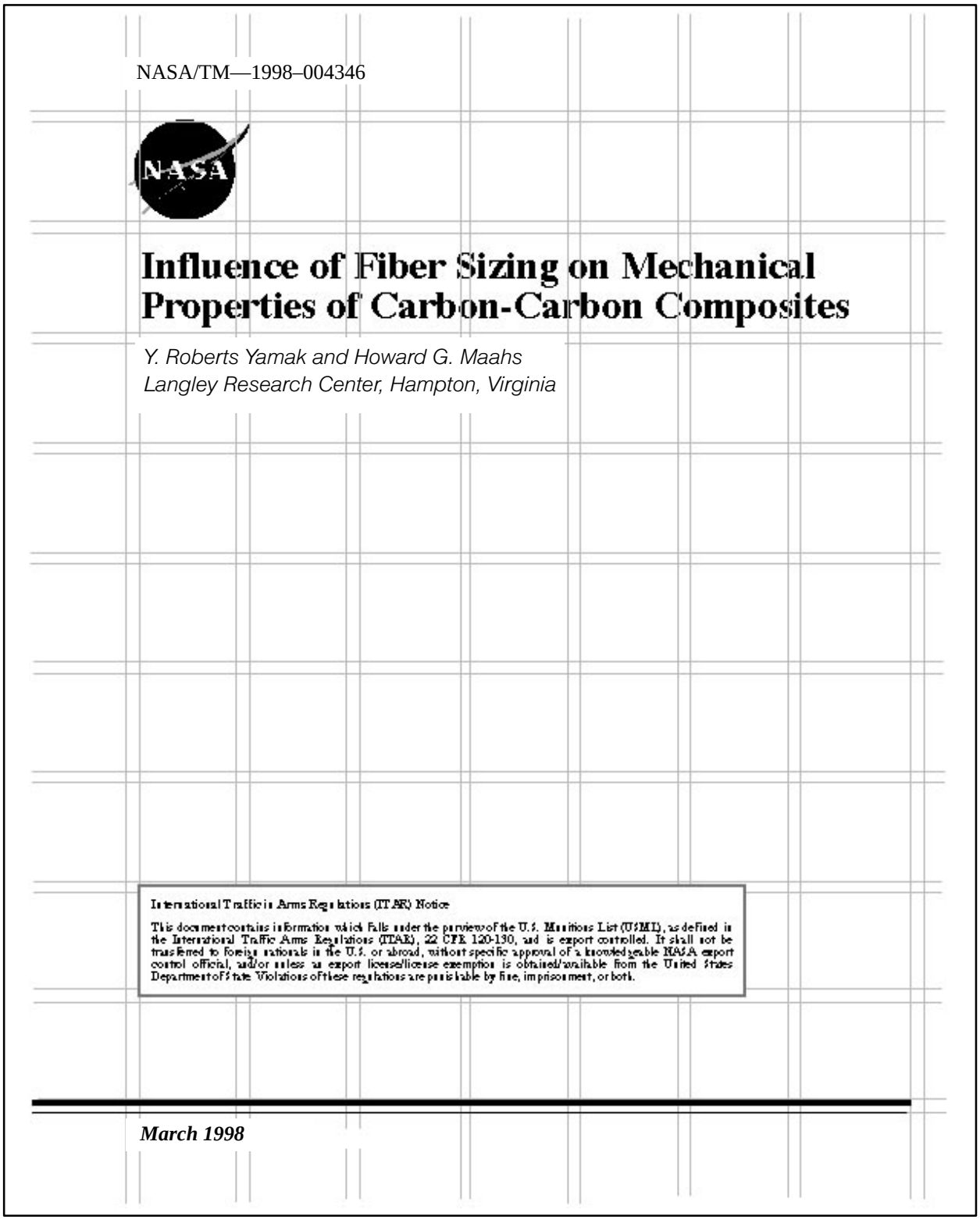
The grids shown in the layouts are provided for design purposes only and should not be a part of the completed document.

The following layouts are presented.

- Front Cover
- Back of Front Cover
- Title Page
- Back of Title Page
- Back Cover
- Front Cover with Black–and–White Halftone Photograph
- Front Cover with Line Art

The grid is for design and alignment purposes only and should not be part of the finished cover.

Figure A4–1. Front Cover



NASA/TM—1998–004346

Influence of Fiber Sizing on Mechanical Properties of Carbon-Carbon Composites

Y. Roberts Yamak and Howard G. Maahs
Langley Research Center, Hampton, Virginia

International Traffic in Arms Regulations (ITAR) Notice

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March 1998

Figure A4–2. Back of Front Cover

The NASA STI Program Office . . . in Profile

Since its founding, NASA has been dedicated to the advancement of aeronautics and space science. The NASA Scientific and Technical Information (STI) Program Office plays a key part in helping NASA maintain this important role.

The NASA STI Program Office is operated by Langley Research Center, the Lead Center for NASA's scientific and technical information. The NASA STI Program Office provides access to the NASA STI Database, the largest collection of aeronautical and space science STI in the world. The Program Office is also NASA's institutional mechanism for disseminating the results of its research and development activities. These results are published by NASA in the NASA STI Report Series, which includes the following report types:

- TECHNICAL PUBLICATION. Reports of completed research or a major significant phase of research that present the results of NASA programs and include extensive data or theoretical analysis. Includes compilations of significant scientific and technical data and information deemed to be of continuing reference value. NASA's counterpart of peer-reviewed formal professional papers but has less stringent limitations on manuscript length and extent of graphic presentations.

- TECHNICAL MEMORANDUM. Scientific and technical findings that are preliminary or of specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. Does not contain extensive analysis.

- CONTRACTOR REPORT. Scientific and technical findings by NASA-sponsored contractors and grantees.

- CONFERENCE PUBLICATION. Collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or cosponsored by NASA.

- SPECIAL PUBLICATION. Scientific, technical, or historical information from NASA programs, projects, and missions, often concerned with subjects having substantial public interest.

- TECHNICAL TRANSLATION. English-language translations of foreign scientific and technical material pertinent to NASA's mission.

Specialized services that complement the STI Program Office's diverse offerings include creating custom thesauri, building customized data bases, organizing and publishing research results . . . even providing videos.

For more information about the NASA STI Program Office, see the following:

- Access the NASA STI Program Home Page at ***http://www.sti.nasa.gov***

- E–mail your question via the Internet to help@sti.nasa.gov

- Fax your question to the NASA STI Help Desk at (301) 621-0134

- Telephone the NASA STI Help Desk at (301) 621-0390

- Write to:
  NASA STI Help Desk
  NASA Center for AeroSpace Information
  7121 Standard Drive
  Hanover, MD 21076-1320

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Figure A4–3. Title Page

NASA/TM—1998–004346

Influence of Fiber Sizing on Mechanical Properties of Carbon-Carbon Composites

Y. Roberts Yamak and Howard G. Maahs
Langley Research Center, Hampton, Virginia

National Aeronautics and Space Administration

Langley Research Center

March 1998

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Figure A4–4. Back of Title Page

Acknowledgments

The authors would like to acknowledge the assistance of those individuals who aided in the preparation of this document. William James was instrumental in obtaining source data, J.D. DeMarcos edited and critiqued the text, Doris Bailey typed the manuscripts, the staffs of the NASA Headquarters Library and the Scientific and Technical Information Program provided assistance in locating bibliographic references, and the NASA Headquarters Printing and Graphics office developed the layout and handled printing.

This is a preprint of a paper intended for presentation at a conference. Because changes may be made before formal publication, this is made available with the understanding that it will not be cited or reproduced without the permission of the author.

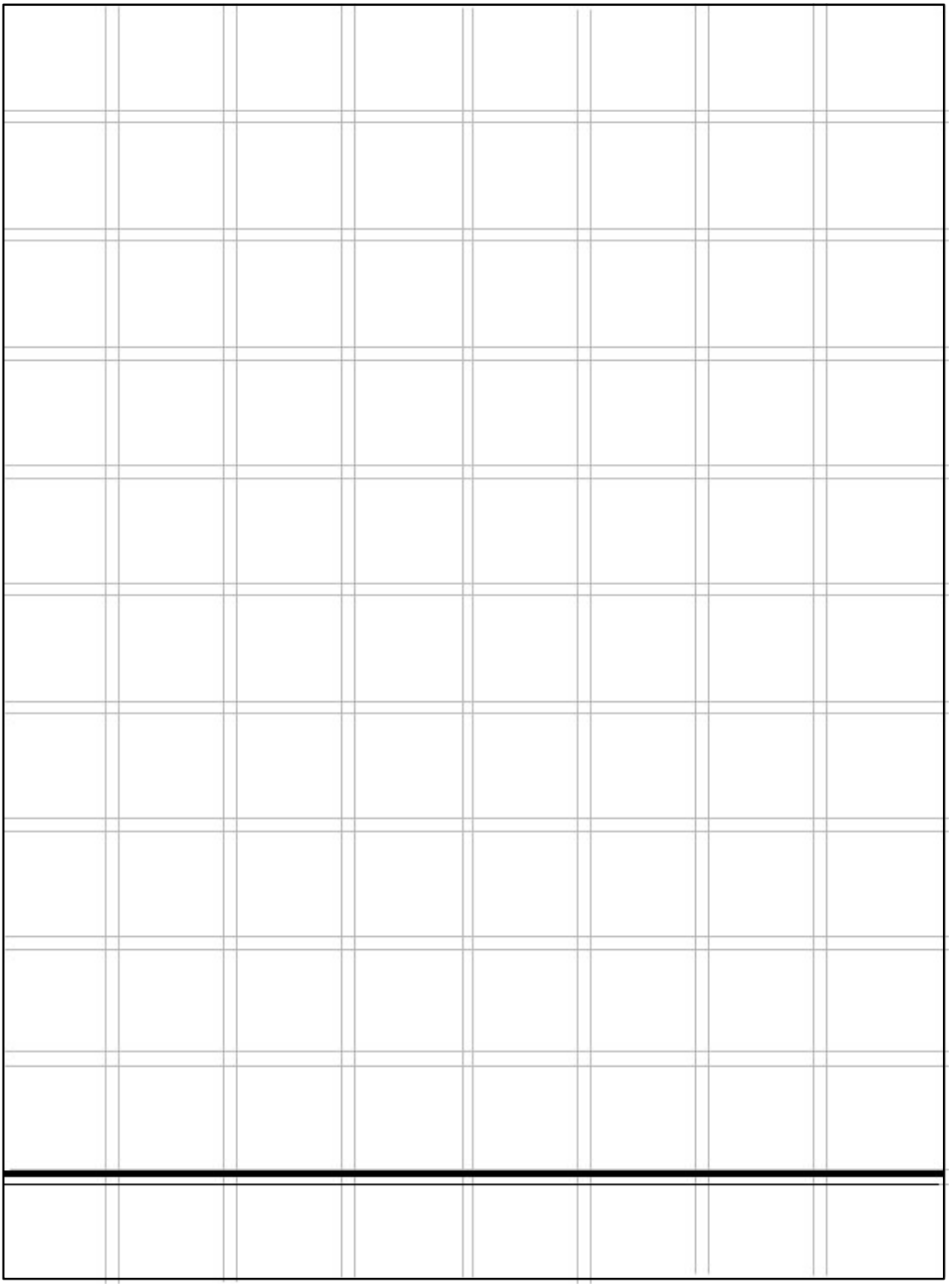
Available from:

NASA Center for AeroSpace Information
7121 Standard Drive
Hanover, MD 21076-1320

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

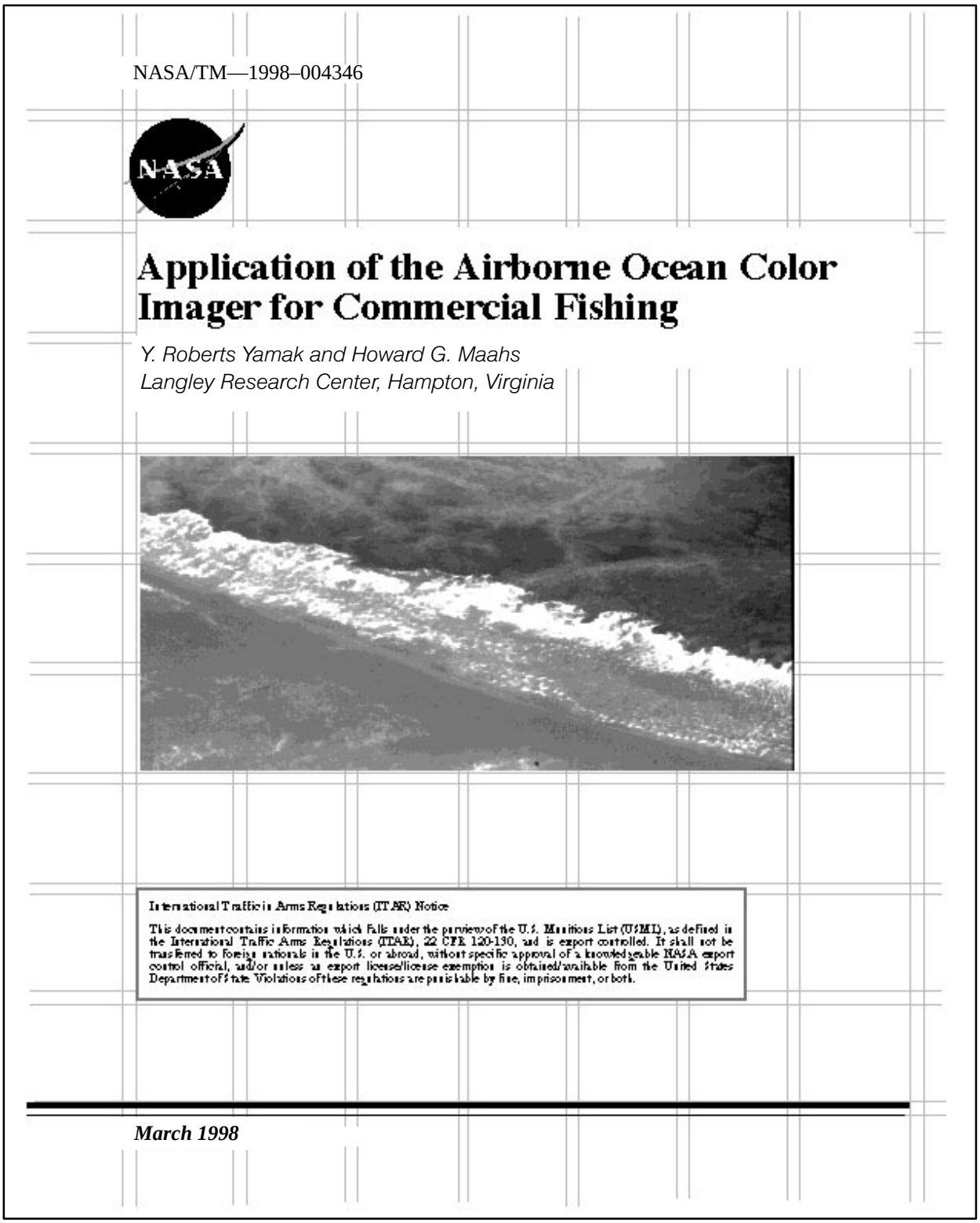
The grid is for design and alignment purposes only and should not be part of the finished cover.

Figure A4–5. Back Cover



The grid is for design and alignment purposes only and should not be part of the finished cover.

Figure A4–6. Front Cover with Black-and-White Halftone Photograph



NASA/TM—1998–004346

Application of the Airborne Ocean Color Imager for Commercial Fishing

Y. Roberts Yamak and Howard G. Maahs
Langley Research Center, Hampton, Virginia

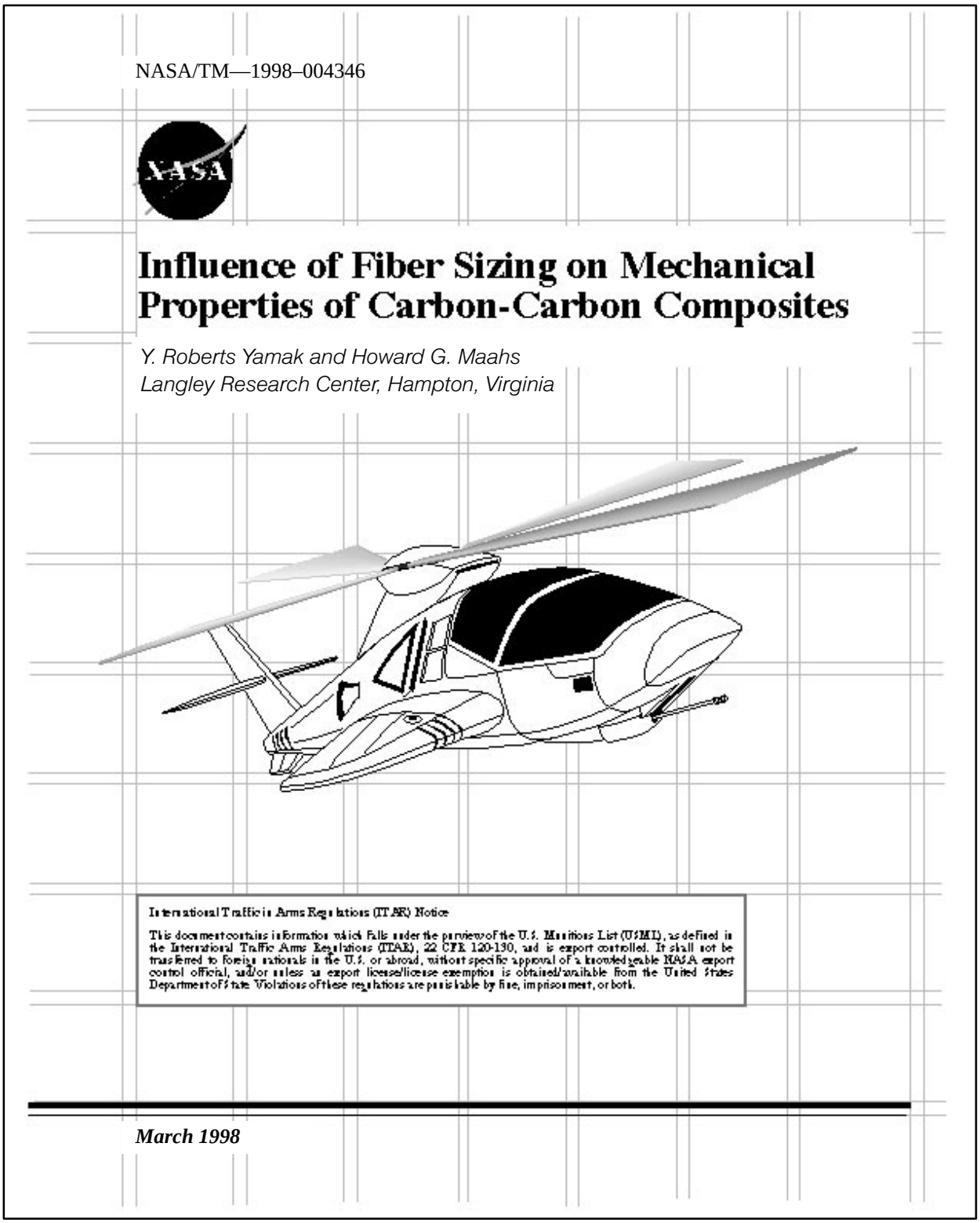
International Traffic in Arms Regulations (ITAR) Notice

This document contains information which falls under the purview of the U.S. Munitions List (USML), as defined in the International Traffic Arms Regulations (ITAR), 22 CFR 120-130, and is export controlled. It shall not be transferred to foreign nationals in the U.S. or abroad, without specific approval of a knowledgeable NASA export control official, and/or unless an export license/license exemption is obtained/available from the United States Department of State. Violations of these regulations are punishable by fine, imprisonment, or both.

March 1998

The grid is for design and alignment purposes only and should not be part of the finished cover.

Figure A4–7. Front Cover with Line Art



Appendix 5. Reference List for Book Numbers

A5.1 NASA STI Report Series Numbering (Required)

Authorized NASA Headquarters or Center personnel may obtain NASA STI Report Series numbers by doing the following:

- Telephoning the NASA STI Help Desk at 301–621–0390 (Attention: Pubs)
- Sending a fax to the NASA STI Help Desk at 301–621–0134 (Attention: Pubs)
- Sending an e–mail via Internet to help@sti.nasa.gov (Attention: Pubs)
- Writing to the NASA STI Help Desk, Attention: Pubs, NASA Center for AeroSpace Information, 7121 Standard Drive, Hanover, MD 21076-1320.

(See also paragraphs 2.4.6 and A8.2.1.)

A5.2 NASA STI Report Series Numbering (Optional)

A5.2.1 International Standard Serial Number (ISSN)

- Used for serial titles (periodicals, annuals, and other publications regularly issued under the same title)
- Available from the Library of Congress, National Serials Data Program, Washington, DC 20540, 202–707–6452

A5.2.2 International Standard Book Number (ISBN)

- Used by libraries and bookstores as an aid in book publishing
- Available from the Standard Book Numbering Agency, R. R. Bowker, 121 Chanlon Road, New Providence, NJ 07974, 908–665–6770 / 800–521–8110, extension 6770

A5.2.3 Library of Congress Card Catalog Number

- Used for monographic publications selected and cataloged by the Library of Congress
- Available from the Library of Congress, Cataloging in Publication Division, Washington, DC 20540, 202–707–9812

Appendix 6. Sample Forms

The sample forms are presented in the following order:

- NASA Form 1676, NASA Scientific and Technical Document Availability Authorization Form
- NASA Form 1676, NASA Scientific and Technical Document Availability Authorization Form (Instructions)
- Standard Form 298, Report Documentation Page
- Standard Form 298, Report Documentation Page (Instructions)

Please note that copies of NF 1676, NASA Scientific and Technical DAA form, are available in print formats (Portable Document Format (PDF) and Postscript (PS)), and can be printed and completed by hand or using a typewriter. They are available on the NASA STI Program home page (***http://www.sti.nasa.gov***). Electronic versions (in PerFORM PRO, PerFORM PRO Plus, and FormFlow) can be completed online and printed. They are available on the NASA Headquarters Electronic Forms home page (***http://www.hq.nasa.gov/help/forms.html***). Use of the form in other media and in other formats is permitted as long as the data elements contained on the printed version of the NF 1676 are retained.

Figure A6–1. NASA Form 1676, Scientific and Technical Document Availability Authorization

National Aeronautics and Space Administration

NASA Scientific and Technical Document Availability Authorization (DAA)

The DAA approval process applies to all forms of published NASA Scientific and Technical Information (STI), whether disseminated in print or electronically. It is to be initiated by the responsible NASA Project Officer, Technical Monitor, author, or other appropriate NASA official for all presentations, reports, papers, and proceedings that contain NASA STI. Explanations are on the back of this form and are presented in greater detail in NPG 2200.2, "Guidelines for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information."

☐ Original
☐ Modified

I. DOCUMENT/PROJECT IDENTIFICATION

TITLE	AUTHOR(S)
ORIGINATING NASA ORGANIZATION	PERFORMING ORGANIZATION *(If different)*

CONTRACT/GRANT/INTERAGENCY/PROJECT NUMBER(S)	DOCUMENT NUMBER(S)	DOCUMENT DATE

For presentations, documents, or other STI to be externally published (including through electronic media), enter appropriate information on the intended publication such as name, place, and date of conference, periodical, or journal name, or book title and publisher in the next box. These documents must be routed to the NASA Headquarters or Center Export Control Administrator for approval (see Sections III and VIII). ▶

II. SECURITY CLASSIFICATION

CHECK ONE *(One of the five boxes denoting Security Classification must be checked.)*

☐ SECRET ☐ SECRET RD ☐ CONFIDENTIAL ☐ CONFIDENTIAL RD ☐ UNCLASSIFIED

III. AVAILABILITY CATEGORY

☐ ITAR ☐ EAR

Export Controlled Document - USML Category /CCL Export Control Classification Number (ECCN) *(Documents marked in this block must have the concurrence/approval of the NASA Headquarters or Center Export Control Administrator (see Section VIII).)*

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☐ SBIR
☐ COPYRIGHTED

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☐ NASA contractors and U.S. Government only
☐ U.S. Government agencies only
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☐ NASA personnel only
☐ Available only with the approval of issuing office:
☐ Limited until *(date)*

☐ PUBLICLY AVAILABLE

Publicly available documents must be unclassified, may not be export controlled, may not contain trade secret or confidential commercial data, and should have cleared any applicable patents application process.

IV. DOCUMENT DISCLOSING AN INVENTION

THIS DOCUMENT MAY BE RELEASED ON *(date)*	NASA HQ OR CENTER PATENT OR INTELLECTUAL PROPERTY COUNSEL SIGNATURE	DATE

V. BLANKET RELEASE (OPTIONAL)

☐ All documents issued under the following contract/grant/project number may be processed as checked in Sections II and III.

☐ The blanket release authorization granted on *(date)*

☐ is RESCINDED - Future documents must have individual availability authorizations.

☐ is MODIFIED - Limitations for all documents processed in the STI system under the blanket release should be changed to conform to blocks as checked in Sections II and III.

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PLEASE CONTINUE ON REVERSE SIDE.

Figure A6–2. NASA Form 1676 Instructions

VI. AUTHOR/ORIGINATOR VERIFICATION

I HAVE DETERMINED THAT THIS PUBLICATION:

☐ DOES contain export controlled, confidential commercial information, and/or discloses an invention for which a patent has been applied, and the appropriate limitation is checked in Sections III and/or IV.

☐ does NOT contain export controlled, confidential commercial information, nor does it disclose an invention for which a patent has been applied, and may be released as indicated above.

NAME OF AUTHOR/ORIGINATOR	MAIL CODE	SIGNATURE	DATE

VII. PROJECT OFFICER/TECHNICAL MONITOR/DIVISION CHIEF REVIEW

☐ APPROVED FOR DISTRIBUTION AS MARKED ON REVERSE ☐ NOT APPROVED

NAME OF PROJECT OFFICER OR TECH. MONITOR	MAIL CODE	SIGNATURE	DATE

VIII. EXPORT CONTROL REVIEW/CONFIRMATION

☐ Public release is approved ☐ Export controlled limitation is not applicable

☐ Export controlled limitation is approved ☐ Export controlled limitation (ITAR/EAR) marked in Section III is assigned to this document:

USML CATEGORY NUMBER	CCL ECCN NUMBER	HQ OR CENTER EXPORT CONTROL ADMINISTRATOR *(as applicable)*	DATE

IX. PROGRAM OFFICE OR DELEGATED AUTHORITY REVIEW

☐ APPROVED FOR DISTRIBUTION AS MARKED ON REVERSE ☐ NOT APPROVED

NAME OF PROGRAM OFFICE REPRESENTATIVE	MAIL CODE	SIGNATURE	DATE

X. DISPOSITION

THIS FORM, WHEN COMPLETED, IS TO BE SENT TO YOUR CENTER PUBLICATIONS OFFICE

INSTRUCTIONS FOR COMPLETING THE NASA SCIENTIFIC AND TECHNICAL DOCUMENT AVAILABILITY AUTHORIZATION (DAA) FORM

Purpose. This DAA form is used to prescribe the availability and distribution of all NASA-generated and NASA-funded documents containing scientific and technical information (including those distributed via electronic media such as the World Wide Web and CD-ROM).

Requirements. The author/originator must provide either a suitable summary description (title, abstract, etc.) or a completed copy of the document with this form. This form is initiated by the document author/originator and that individual is responsible for recommending/determining the availability/distribution of the document. The author/originator completes Sections I through III, and VI. The author/originator is also responsible for obtaining information and signature in Section IV to the extent the document discloses an invention for which patent protection has been applied. Subsequent to completion of these sections, the author/originator forwards the document to the appropriate Project Manager/Technical Monitor/Division Chief for further review and approval in Section VII, including a re-review of the planned availability and distribution. Once this approval is obtained, the DAA is forwarded to the NASA Headquarters or Center Export Administrator for completion of Section VIII. It is then forwarded for completion of Section IX to the cognizant NASA Headquarters Program Office or Delegated Authority, who provides final review and approval for release of the document as marked.

When to Use This Form. Documents containing STI and intended for presentation or publication (including via electronic media) must be approved in accordance with the NASA STI Procedures and Guidelines (NPG 2200.2). Documents that are to be published in the NASA STI Report Series must be coordinated with the appropriate NASA Headquarters or Center Scientific and Technical Information Office in accordance with NPG 2200.2. Note that information on the Report Documentation Page (if attached) is not to be entered on the DAA except for title, document date, and contract number.

How to Use this Form. Specific guidelines for each section of this form are detailed below.

I. Document/Project Identification. Provide the information requested. If the document is classified, provide instead the security classification of the title and abstract. (Classified information must not be entered on this form). Include RTOP numbers on the Contract/Grant/Interagency/Project Number(s) line. Provide information on presentations or externally published documents as applicable.

II. Security Classification. Enter the applicable security classification for the document. Documents, if classified, will be available only to appropriately cleared personnel having a "need to know."

III. Availability Category for Unclassified Documents. Check the appropriate category or categories.

Export Controlled Document. If the document is subject to export restrictions (see NPG 2200.2, paragraph 4.5.3), the appropriate restriction must be checked, either International Traffic in Arms Regulations (ITAR) or Export Administration Regulations (EAR), and the appropriate United States Munitions List (USML) category or Commerce Control List (CCL), Export Control Classification Number (ECCN) must be cited.

Confidential Commercial Documents (Documents containing Trade Secrets, SBIR documents, and/or Copyrighted information). Check the applicable box (see NPG 2200.2 paragraph 4.5.7). When any of these boxes are checked, also indicate the appropriate limitation and expiration in the list to the right of these restrictions. These limitations refer to the user groups authorized to obtain the document. The limitations apply both to the initial distribution of the documents and the handling of requests for the documents. The limitations will appear on and apply to reproduced copies of the document. Documents limited to NASA personnel should not be made available to onsite contractors. If the Available Only With the Approval of Issuing Office limitation is checked, the NASA Center for AeroSpace Information will provide only bibliographic processing and no initial distribution; CASI will refer all document requests to the issuing office.

Publicly Available Document - Unrestricted Distribution. Check this box if the information in the document may be made available to the general public without restrictions (unrestricted domestic and international distribution). If the document is copyrighted (see paragraph 4.5.7.3 in NPG 2200.2), also check the "Copyrighted" box in this section.

IV. Document Disclosing an Invention. This must be completed when the document contains information that discloses an invention (see NPG 2200.2, paragraph 4.5.9). When this box is checked, an additional appropriate availability category must be checked. Use of this category must be approved by NASA Headquarters or Center Patent Counsel or the Intellectual Property Counsel.

V. Blanket Release (Optional). Complete this optional section whenever subsequent documents produced under the contract, grant, or project are to be given the same distribution and/or availability as described in Sections II and III. More than one contract number or RTOP Number can be entered. This section may also be used to rescind or modify an earlier Blanket Release. All blanket releases must be approved by the Program Office or its designee and concurred with by the Office of Management Systems and Facilities.

VI. Author/Originator Verification. Required for all DAA forms.

VII. Project Officer/Technical Monitor/Division Chief Review. The Project Officer/Technical Monitor/Author or Originator Division Chief or above must sign and date the form. The office code and typed name should be entered.

VIII. Export Control Review/Confirmation. This section is to be completed by the authorized NASA Headquarters or Center Export Control Administrator for all documents.

IX. Program Office or Delegated Authority Review. This section is to be completed by the duly authorized official representing the NASA Headquarters Program Office. Any delegation from NASA Headquarters to a NASA Center in accordance with NPG 2200.2 should be entered here.

X. Disposition. For NASA Center use.

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Figure A6–3. OMB Standard Form 298, Report Documentation Page

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.			
1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED	
4. TITLE AND SUBTITLE			5. FUNDING NUMBERS
6. AUTHOR(S)			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)			8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSORING/MONITORING AGENCY REPORT NUMBER
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION/AVAILABILITY STATEMENT			12b. DISTRIBUTION CODE
13. ABSTRACT *(Maximum 200 words)*			
14. SUBJECT TERMS			15. NUMBER OF PAGES
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. Z39-18
298-102

Figure A6–4. OMB Standard Form 298 Instructions

GENERAL INSTRUCTIONS FOR COMPLETING SF 298

The Report Documentation Page (RDP) is used in announcing and cataloging reports. It is important that this information be consistent with the rest of the report, particularly the cover and title page. Instructions for filling in each block of the form follow. It is important to ***stay within the lines*** to meet ***optical scanning requirements***.

Block 1. Agency Use Only *(Leave blank)*.

Block 2. Report Date. Full publication date including day, month, and year, if available (e.g. 1 Jan 88). Must cite at least the year.

Block 3. Type of Report and Dates Covered. State whether report is interim, final, etc. If applicable, enter inclusive report dates (e.g. 10 Jun 87 - 30 Jun 88).

Block 4. Title and Subtitle. A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume, repeat the primary title, add volume number, and include subtitle for the specific volume. On classified documents enter the title classification in parentheses.

Block 5. Funding Numbers. To include contract and grant numbers; may include program element number(s), project number(s), task number(s), and work unit number(s). Use the following labels:

C	- Contract	**PR**	- Project
G	- Grant	**TA**	- Task
PE	- Program Element	**WU**	- Work Unit Accession No.

Block 6. Author(s). Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the name(s).

Block 7. Performing Organization Name(s) and Address(es). Self-explanatory.

Block 8. Performing Organization Report Number. Enter the unique alphanumeric report number(s) assigned by the organization performing the report.

Block 9. Sponsoring/Monitoring Agency Name(s) and Address(es). Self-explanatory.

Block 10. Sponsoring/Monitoring Agency Report Number. *(If known)*

Block 11. Supplementary Notes. Enter information not included elsewhere such as: Prepared in cooperation with...; Trans. of...; To be published in.... When a report is revised, include a statement whether the new report supersedes or supplements the older report.

Block 12a. Distribution/Availability Statement. Denotes public availability or limitations. Cite any availability to the public. Enter additional limitations or special markings in all capitals (e.g. NOFORN, REL, ITAR).

- **DOD** - See DoDD 5230.24, "Distribution Statements on Technical Documents."
- **DOE** - See authorities.
- **NASA** - See Handbook NHB 2200.2.
- **NTIS** - Leave blank.

Block 12b. Distribution Code.

- **DOD** - Leave blank.
- **DOE** - Enter DOE distribution categories from the Standard Distribution for Unclassified Scientific and Technical Reports.
- **NASA** - Leave blank.
- **NTIS** - Leave blank.

Block 13. Abstract. Include a brief *(Maximum 200 words)* factual summary of the most significant information contained in the report.

Block 14. Subject Terms. Keywords or phrases identifying major subjects in the report.

Block 15. Number of Pages. Enter the total number of pages.

Block 16. Price Code. Enter appropriate price code *(NTIS only)*.

Blocks 17. - 19. Security Classifications. Self-explanatory. Enter U.S. Security Classification in accordance with U.S. Security Regulations (i.e., UNCLASSIFIED). If form contains classified information, stamp classification on the top and bottom of the page.

Block 20. Limitation of Abstract. This block must be completed to assign a limitation to the abstract. Enter either UL (unlimited) or SAR (same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited.

Standard Form 298 Back (Rev. 2-89)

Appendix 7. Reference List for Metric Measurements

American National Standard for Metric Practice. **ANSI/IEEE STD 268–1992. Bethesda, MD: American National Metric Council, 1992.**

American Society for Testing and Materials. ***Standard for Metric Practice*****. ASTM E380. Philadelphia: ASTM, 1982.**

Artusa, Elisa A. ***SI (Metric) Handbook*****. National Aeronautics and Space Administration, John F. Kennedy Space Center. NASA TM–109197. Baltimore, MD: NASA Center for AeroSpace Information, 1994.** Provides information for an understanding of SI units, symbols, and prefixes, style and usage in documentation in both the U.S. and in the international business community; conversion techniques; limits, fits, and tolerance data; and drawing and technical writing guidelines. Also provides information on SI usage for specialized applications like data processing and computer programming, science, engineering, and construction. Related information in the appendixes includes legislative documents, historical and biographical data, a list of metric documentation, rules for determining significant digits and rounding, conversion factors, shorthand notation, and a unit index.

Conversion Factors. **Northridge, CA: U.S. Metric Association.** A comprehensive one–page table that provides conversion factors from both inch–pound units to metric system units and from metric system units to inch–pound units. Shows the conversion factors for length, area, volume, torque, mass, energy/work, power, pressure/stress, force, speed, and temperature.

Institute of Electrical and Electronics Engineers. ***American National Standard Illustrations for Publication and Projection*****. ANSI Y15.1M. New York: ANSI, 1979 (1986).**

Metric Editorial Guide, **Fifth Edition. Bethesda, MD: American National Metric Council, 1993.** Explains and illustrates proper use of SI metric units, terms, and symbols. Provides standard spelling, punctuation, and usage for metric terms, abbreviations, and symbols.

Pedde, Lawrence D., et al. ***Metric Manual*****. U.S. Bureau of Reclamation. GPO S/N 024–0003–00129–5. Washington, DC: U.S. Government Printing Office, 1978.** Presents the basics of SI (International System of Units), metric conversion techniques, and examples of engineering problems associated with metric conversion.

Appendix 8. Documentation, Approval, and Dissemination Procedures

A8.1 General Procedures

A8.1.1 Planning a Publication

When planning a publication, authors should contact the NASA Lead Center or Center Technical Publications Manager to discuss the publication's outline and format, production, authorization, review and approval, printing or reproduction, distribution, and deadline requirements.

A8.1.2 Assessing the Publication

The NASA Lead Center or Center Technical Publications Manager assesses, with the author:

- The series in which the STI report will be published, based on the content and intended audience and the applicable subject categories. (See Appendixes 2 and 3.)
- Review and approval requirements.
- Level of edit and production effort.
- Artwork and functional color requirements.
- Estimated length and number of copies.

A8.1.3 Cost Estimates

The NASA Lead Center or Center Technical Publications Manager estimates the required production and printing costs, and provides the resulting cost information to the author.

A8.1.4 Funding Availability

The author ensures that the necessary funds are available from the originating office and notifies the NASA Lead Center or Center Technical Publications Manager that these funds are properly obligated to cover costs.

A8.1.5 Report Numbers

The NASA Lead Center or Center Publications Office obtains a report number in the appropriate series from the NASA CASI. (See paragraphs 2.4.6 and A8.2.1 of this appendix.)

A8.1.6 Required Reviews

The author ensures that the required reviews are completed and approvals obtained. (See chapter 4.)

A8.1.7 Delivery

The author delivers the manuscript to the NASA Lead Center or Center Publications Office in draft or camera–ready form, accompanied by the following:

A8.1.7.1 Report Documentation Page

A completed Report Documentation Page (RDP), SF298, which is included as the last page of the report for all NASA STI reports other than SP's. (See paragraph 2.5.5.) (For SP's, a completed RDP should be forwarded to the Center for AeroSpace Information with the request for standard distribution labels.) (See paragraph A8.2.2 of this appendix.)

A8.1.7.2 Document Availability Authorization

A signed Document Availability Authorization (DAA), NASA Form 1676, for all NASA STI reports except for Technical Translations. (See chapter 4.) (A DAA is not required for TT's.) While production of the report may continue prior to the submittal of this form, the DAA must be completed and signed prior to the submittal of the report for duplication/printing.

A8.1.7.3 Additional Approvals

Any other approvals and/or authorizations required by NASA Headquarters Office or Center authorizations including but not limited to publishing and release authorizations, funding authorization, professional and technical review approvals, security officer approvals, and printing and duplicating authorizations.

A8.1.7.4 Mailing Labels

Mailing labels for local distribution of the published report. (See paragraph 5.6.) Author–supplied mailing labels must include a return address that is either the author's duty station (NASA Headquarters or Center office and mail code) or the address of the Headquarters or Center Publications Office supporting the author's duty station.

A8.1.8 Standards Conformance

The NASA Lead Center or Center Technical Publications Manager reviews the manuscript for conformance to the standards in paragraph 2.5 and local NASA Headquarters Office or Center standards, and recommends and/or incorporates final changes to produce the camera–ready copy.

A8.1.9 Initial Review

The author and the NASA Lead Center or Center Technical Publications Manager review and approve the camera–ready copy.

A8.1.10 Acquiring Report Numbers, Print Volumes, and Mailing Labels

The NASA Lead Center or Center Technical Publications Manager acquires the appropriate report number as well as the NASA STI Program standard or nonstandard distribution print volume and mailing labels, and submits the camera–ready copy for duplication or printing through appropriate mechanisms.

A8.2 Obtaining NASA STI Report Series Numbers

A8.2.1 STI Report Series Numbers

A8.2.1.1 ANSI/NISO–Based Numbering System

The STI Program uses a standard numbering system based on ANSI/NISO Z39.23, “Standard Technical Report Number (STRN) Format and Creation,” to ensure the assignment of unique report numbers to the NASA STI Report Series. The report numbers are composed essentially of the Agency acronym (NASA), a series acronym (e.g., TM), a publication year (e.g., 1998), and the report number. The report number appears on the front cover, title page, and RDP of all STI Report Series in the standard STI report number format, e.g., NASA/TM—1998–123456. Report numbers for revised reports, reports comprising more than one volume, or reports with supplements all must include the appropriate suffix(es), e.g., NASA/TM—1998–123456/REV2, NASA/TM—1998–123456/VOL2, NASA/TM—1998–123456/SUPPL2. If more than one suffix is used, it is connected to the other suffix(es) with a hyphen, e.g., NASA/TM—1998–123456/REV2–VOL2.

A8.2.1.2 Requesting Report Numbers

Report numbers should be requested during the development of a NASA STI report. Report numbers are obtained by sending a request for the report number and an RDP to the NASA CASI, Attention: Pubs. Send the request via mail, fax, or e–mail. The request must be made by a NASA Lead Center or Center Publications Office representative, and must include the requester’s name, phone number, fax number, mail stop, and the type of report number requested. The RDP must be completed in accordance with the instructions on the back of the RDP, except for the Report Number block. The report number will be issued and faxed to the recipient within one working day of request receipt.

A8.2.2 Requesting Distribution Labels

STI Program standard and nonstandard distribution labels should be requested no earlier than the week before the report is sent for duplication or printing and distribution. Standard and nonstandard distribution labels are obtained by sending a request for the mailing labels and a completed RDP to the NASA CASI, Attention: Pubs, via mail, fax, or e–mail. The request must be made by a NASA Lead Center or

Center Publications Office representative, and must include the requester's name, phone number, fax number, mail stop, and the requested shipping mechanism (regular NASA mail, NASA pouch mail, or commercial overnight mail). The RDP must be completed in accordance with the instructions on the back of the RDP. The RDP, standard or nonstandard distribution labels, and job instruction sheet will be shipped to the requester within two working days.

A8.2.3 Concurrent Request for Report Numbers and Distribution Labels

Should a request for a report number and NASA standard or nonstandard distribution labels be made concurrently, the request must be made in accordance with paragraphs A8.2.1 and A8.2.2 of this appendix. That is, the request must be made by a NASA Lead Center or Center Publications Office representative, and must include an RDP and the requester's name, phone number, fax number, mail stop, the type of report number requested, and the requested shipping mechanism (regular NASA mail, NASA pouch mail, or commercial overnight mail). The RDP must be completed in accordance with the instructions on the back of the RDP, except for the Report Number block. The RDP, report number, standard or nonstandard distribution labels, and job instruction sheet will be shipped to the requester within two working days.

Appendix 9. NASA CASI Document Distribution Services

A9.1 Document Delivery Services

Document requests are filled by the NASA CASI in one of three ways: by providing a stock copy of the original document; by producing a hard (i.e., paper) copy of the document, generally a "blowback" from microfiche; or by supplying the document on microfiche. When the NASA CASI cannot provide a document, the user requesting the document is referred to other suppliers.

A9.2 Document Distribution Subscription Services

NASA provides document distribution subscription services through the NASA CASI. Registered users subscribing to these services are ensured easy and continuous access to the results of NASA STI. Copies of NASA STI reports and other STI–related publications are available on an annual subscription basis through the Automatic Document Distribution Service (ADDS). A standing order service is available for users who prefer a pay–as–you–go approach.

A9.3 Distribution Capabilities of the NASA CASI

The NASA CASI is capable of replicating for secondary distribution information packages in the following formats.

A9.3.1 Videotapes, Audiotapes, and Microfiche

NASA maintains duplication facilities at the NASA CASI for videotapes, audiotapes, and microfiche provided by the author.

A9.3.2 Computer Diskettes

The NASA CASI maintains the capability of making like–to–like copies of diskettes of the following types:

Type	Low Density (LD)	High Density (HD)
DOS 3.5″	720K	1.44 MB
DOS 5.25″	360K	1.2 MB
Mac 3.5″	800K	1.4 MB

Special arrangements for the duplication of other types of diskettes (e.g., UNIX formats) may be available upon request to the NASA CASI.

A9.3.3 CD–ROM [Reserved]

A9.3.4 Other Nonprint Media [Reserved]