AIAA Manuscript Preparation Kit

This kit is to serve as a partner document to the AIAA Papers Template, and includes a summary of formatting instructions and all forms necessary to complete your manuscript and submit it for publication. For complete formatting instructions and guidelines, please refer to the AIAA Paper Template, available in several formats (including MS Word and LaTeX) from the AIAA web site. Please read all information carefully, as several procedures have changed.

I. Publication Instructions

A. Publication Standards

The formatting standard for AIAA manuscripts has changed. As the preferred medium for technical papers is increasingly electronic, the new layout for AIAA papers has been redesigned with electronic publication in mind. This kit, along with its partner document, the AIAA Papers Template, has been rewritten and is presented in accordance with the new formatting standard.

Please keep in mind, your manuscript cannot be published by AIAA if:

- 1) It has been published previously, or:
- 2) The appropriate copyright assignment has not been made.

B. Paper Review and Visa Considerations

It is the responsibility of the author to obtain any required government or company reviews for their papers in advance of publication. Technology transfer guidelines have extended considerably the time required for review of abstracts and completed papers by U.S. government agencies. Internal (company) plus external (government) reviews can consume 16 weeks or more. Government review, if required, is the responsibility of the author. Authors should determine the extent of approval necessary early in the paper preparation process to preclude paper withdrawals and late paper submittal.

If you plan to attend an AIAA technical conference or professional development course held in the United States and you require a visa for travel, it is incumbent upon you to apply for a visa with the U.S. embassy (consular division) or consulate with ample time for processing. To avoid bureaucratic problems, AIAA strongly suggests that you submit your formal application to U.S. authorities a minimum of 120 days in advance of the date of anticipated travel.

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You will be notified of the specific manuscript submission deadline in your acceptance letter, and the deadline will also be listed on the conference Web site. For final manuscript submissions, we ask that authors <u>not</u> upload a draft version of their manuscript with the intent to upload a final version later. *Only one upload will be accepted for the final version of your manuscript*.

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To ensure conference quality, session chairs will enforce a "no paper, no podium" rule. This policy states that if your manuscript is not uploaded to the Web site prior to your presentation, you will not be allowed to present the paper at the conference.

F. Paper Length and Color Illustrations

As of 2006, all papers presented at AIAA events are published in an electronic-only (online and/or DVD) format. Papers published in either of these electronic formats will be reproduced in color automatically. A paper size/length limit no longer applies to papers published electronically.

II. Submission of Your Manuscript

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III. Formatting Guidelines

The styles and formats to be used for all AIAA technical papers have been incorporated into the structure of this document and its partner document, the AIAA Papers Template. To simplify the formatting process, you can now use the Papers Template as a guide (type-over or cut-and-paste) to formatting your paper. Detailed instructions on the use of the template are included in the template document itself. This template is available for download in Word and LaTeX formats under the Author Resources link on your conference Web site. A LaTeX style and sample files are also available for those authors who prefer to use LaTeX. Regardless of which program you use to prepare your manuscript, the formatting requirements are identical; please follow the specific formatting instructions in whichever template you use.

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The abstract should appear at the beginning of your paper. It should be one paragraph long (not an introduction) and complete in itself (no reference numbers). It should indicate subjects dealt with in the paper and state the objectives of the investigation. Newly observed facts and conclusions of the experiment or argument discussed in the paper must be stated in summary form; readers should not have to read the paper to understand the abstract. The abstract should be bold, indented 3 picas $(1/2^{"})$ on each side, and separated from the rest of the document by two blank lines.

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D. Footnotes, **Endnotes** and References

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List and number all bibliographical references at the end of the paper. Corresponding superscript numbers are used to cite references in the text, ¹ unless the citation is an integral part of the sentence (e.g., "It is shown in Ref. 2 that...") or follows a mathematical expression: " $A^2 + B = C$ (Ref. 3)." For multiple citations, separate reference numbers with commas, ^{4,5} or use a dash to show a range. ⁶⁻⁸ Reference citations in the text should be in numerical order.

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F. Equations, Numbers, Symbols, and Abbreviations

Equations are centered and numbered consecutively, with equation numbers in parentheses flush right. Use only standard symbols and abbreviations in text and illustrations. Be sure that the symbols in your equation are defined before the equation appears, or immediately following.

G. Page Numbers and Identifications

The page number should be printed on the bottom center of every page. Directly below this number should appear the words "American Institute of Aeronautics and Astronautics," as appears in this document.

H. General Grammar and Preferred Usage

Use only one space after periods or colons. Hyphenate complex modifiers: "zero-field-cooled magnetization." Avoid dangling participles, such as, "Using Eq. (1), the potential was calculated." [It is not clear who or what used Eq. (1).] Write instead "The potential was calculated using Eq. (1)," or "Using Eq. (1), we calculated the potential."

Use a zero before decimal points: "0.25," not ".25." Use "cm²," not "cc." Indicate sample dimensions as "0.1 cm x 0.2 cm," not "0.1 x 0.2 cm²." The preferred abbreviation for "seconds" is "s," not "sec." Do not mix complete spellings and abbreviations of units: use "Wb/m²" or "webers per square meter," not "webers/m²." When expressing a range of values, write "7 to 9" or "7-9," not "7~9."

A parenthetical statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within parenthesis.) In American English, periods and commas are placed within quotation marks, like "this period." Other punctuation is "outside"! Avoid contractions; for example, write "do not" instead of "don't." The serial comma is preferred: "A, B, and C" instead of "A, B and C."

If you wish, you may write in the first person singular or plural and use the active voice ("I observed that..." or "We observed that..." instead of "It was observed that..."). Remember to check spelling. If your native language is not English, please ask a native English-speaking colleague to proofread your paper.

The word "data" is plural, not singular (i.e., "data are," not "data is"). The subscript for the permeability of vacuum μ_0 is zero, not a lowercase letter "o." The term for residual magnetization is "remanence"; the adjective is "remanent"; do not write "remnance" or "remnant." The word "micrometer" is preferred over "micron" when spelling out this unit of measure. A graph within a graph is an "inset," not an "insert." The word "alternatively" is preferred to the word "alternately" (unless you really mean something that alternates). Use the word "whereas" instead of "while" (unless you are referring to simultaneous events). Do not use the word "essentially" to mean "approximately" or "effectively." Do not use the word "issue" as a euphemism for "problem." When compositions are not specified, separate chemical symbols by en-dashes; for example, "NiMn" indicates the intermetallic compound Ni_{0.5}Mn_{0.5} whereas "Ni–Mn" indicates an alloy of some composition Ni_xMn_{1-x}.

Be aware of the different meanings of the homophones "affect" (usually a verb) and "effect" (usually a noun), "complement" and "compliment," "discreet" and "discrete," "principal" (e.g., "principal investigator") and "principle" (e.g., "principal of measurement"). Do not confuse "imply" and "infer."

Prefixes such as "non," "sub," "micro," "multi," and ""ultra" are not independent words; they should be joined to the words they modify, usually without a hyphen. There is no period after the "et" in the abbreviation "et al." The abbreviation "i.e.," means "that is," and the abbreviation "e.g.," means "for example" (these abbreviations are not italicized). If desired, more detailed style and formatting instructions can be found in the AIAA style guide, *AIAA Style* (available from AIAA upon request).

I. Conclusion

A conclusion section is not required, though it is preferred. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions. Note that the conclusion section is the last section of the paper that should be numbered. The appendix (if present), acknowledgment, and references should be listed without numbers.

Appendix

An appendix, if needed, should appear before the acknowledgements.

Acknowledgments

The preferred spelling of the word "acknowledgment" in American English is without the "e" after the "g." Avoid expressions such as "One of us (S.B.A.) would like to thank..." Instead, write "F. A. Author thanks..." Sponsor and financial support acknowledgments are also to be listed in the "acknowledgments" section.

References

The following pages are intended to provide examples of the different reference types, as used in the AIAA Style Guide. When using the Word version of this template to enter references, select the "references" style from the drop-down style menu to automatically format your references. If you are using a print or PDF version of this document, all references should be in 9-point font, with reference numbers inserted in superscript immediately before the corresponding reference. You are not required to indicate the type of reference; different types are shown here for illustrative purposes only.

Periodicals

¹Vatistas, G. H., Lin, S., and Kwok, C. K., "Reverse Flow Radius in Vortex Chambers," *AIAA Journal*, Vol. 24, No. 11, 1986, pp. 1872, 1873.

²Dornheim, M. A., "Planetary Flight Surge Faces Budget Realities," *Aviation Week and Space Technology*, Vol. 145, No. 24, 9 Dec. 1996, pp. 44-46.

³Terster, W., "NASA Considers Switch to Delta 2," Space News, Vol. 8, No. 2, 13-19 Jan. 1997, pp., 1, 18.

All of the preceding information is required. The journal issue number ("No. 11" in Ref. 1) is preferred, but the month (Nov.) can be substituted if the issue number is not available. Use the complete date for daily and weekly publications. Transactions follow the same style as other journals; if punctuation is necessary, use a colon to separate the transactions title from the journal title.

Books

⁴Peyret, R., and Taylor, T. D., *Computational Methods in Fluid Flow*, 2nd ed., Springer-Verlag, New York, 1983, Chaps. 7, 14.

⁵Oates, G. C. (ed.), *Aerothermodynamics of Gas Turbine and Rocket Propulsion*, AIAA Education Series, AIAA, New York, 1984, pp. 19, 136.

⁶Volpe, R., "Techniques for Collision Prevention, Impact Stability, and Force Control by Space Manipulators," *Teleoperation and Robotics in Space*, edited by S. B. Skaar and C. F. Ruoff, Progress in Astronautics and Aeronautics, AIAA, Washington, DC, 1994, pp. 175-212.

Publisher, place, and date of publication are required for all books. No state or country is required for major cities: New York, London, Moscow, etc. A differentiation must always be made between Cambridge, MA, and Cambridge, England, UK. Note that series titles are in roman type.

Proceedings

⁷Thompson, C. M., "Spacecraft Thermal Control, Design, and Operation," *AIAA Guidance, Navigation, and Control Conference*, CP849, Vol. 1, AIAA, Washington, DC, 1989, pp. 103-115

⁸Chi, Y., (ed.), Fluid Mechanics Proceedings, SP-255, NASA, 1993.

⁹Morris, J. D. "Convective Heat Transfer in Radially Rotating Ducts," *Proceedings of the Annual Heat Transfer Conference*, edited by B. Corbell, Vol. 1, Inst. Of Mechanical Engineering, New York, 1992, pp. 227-234.

At a minimum, proceedings must have the same information as other book references: paper (chapter) and volume title, name and location of publisher, editor (if applicable), and pages or chapters cited. Do not include paper numbers in proceedings references, and delete the conference location so that it is not confused with the publisher's location (which is mandatory, except for government agencies). Frequently, CP or SP numbers (Conference Proceedings or Symposium Proceedings numbers) are also given. These elements are not necessary, but when provided, their places should be as shown in the preceding examples.

Reports, Theses, and Individual Papers

¹⁰Chapman, G. T., and Tobak, M., "Nonlinear Problems in Flight Dynamics," NASA TM-85940, 1984.

¹¹Steger, J. L., Jr., Nietubicz, C. J., and Heavey, J. E., "A General Curvilinear Grid Generation Program for Projectile Configurations," U.S. Army Ballistic Research Lab., Rept. ARBRL-MR03142, Aberdeen Proving Ground, MD, Oct. 1981.

¹²Tseng, K., "Nonlinear Green's Function Method for Transonic Potential Flow," Ph.D. Dissertation, Aeronautics and Astronautics Dept., Boston Univ., Cambridge, MA, 1983.

Government agency reports do not require locations. For reports such as NASA TM-85940, neither insert nor delete dashes; leave them as provided by the author. Place of publication *should* be given, although it is not mandatory, for military and company reports. Always include a city and state for universities. Papers need only the name of the sponsor; neither the sponsor's location nor the conference name and location are required. *Do not confuse proceedings references with conference papers*.

Electronic Publications

CD-ROM publications and regularly issued, dated electronic journals are permitted as references. Archived data sets also may be referenced as long as the material is openly accessible and the repository is committed to archiving the data indefinitely. References to electronic data available only from personal Web sites or commercial, academic, or government ones where there is no commitment to archiving the data are not permitted (see Private Communications and Web sites).

¹³Richard, J. C., and Fralick, G. C., "Use of Drag Probe in Supersonic Flow," *AIAA Meeting Papers on Disc* [CD-ROM], Vol. 1, No. 2, AIAA, Reston, VA, 1996.

¹⁴Atkins, C. P., and Scantelbury, J. D., "The Activity Coefficient of Sodium Chloride in a Simulated Pore Solution Environment," *Journal of Corrosion Science and Engineering* [online journal], Vol. 1, No. 1, Paper 2, URL: http://www.cp/umist.ac.uk/JCSE/vol1/vol1.html [cited 13 April 1998].

¹⁵Vickers, A., "10-110 mm/hr Hypodermic Gravity Design A," *Rainfall Simulation Database* [online database], URL: http://www.geog.le.ac.uk/bgrg/lab.htm [cited 15 March 1998].

Always include the citation date for online references. Break Web site addresses after punctuation, and do not hyphenate at line breaks.

Computer Software

¹⁶TAPP, Thermochemical and Physical Properties, Software Package, Ver. 1.0, E. S. Microware, Hamilton, OH, 1992.

Include a version number and the company name and location of software packages.

Patents

Patents appear infrequently. Be sure to include the patent number and date.

¹⁷Scherrer, R., Overholster, D., and Watson, K., Lockheed Corp., Burbank, CA, U.S. Patent Application for a "Vehicle," Docket No. P-01-1532, filed 11 Feb. 1979.

Private Communications and Web Sites

References to private communications and personal Web site addresses are generally not permitted. Private communications can be defined as privately held unpublished letters or notes or conversations between an author and one or more individuals. They *may* be cited as references in some case studies, but only with permission of the AIAA staff. Depending on the circumstances, private communications and Web site addresses may be incorporated into the main text of a manuscript or may appear in footnotes.

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