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INTRODUCTION

This template is formatted to *The Vertical Flight Society* (VFS) guidelines for Forum abstracts. A portion of the guidelines themselves has been used as "filler" in this template. Replace this text, as well as the following, with the body of your abstract. It is requested that the maximum size of the PDF file uploaded to the submission site should be no more than 10 MB. The fidelity of figures can typically be reduced so that they retain salient features, but at a much reduced size. **Abstracts should be a minimum of three (3) pages and a maximum of 5 pages in length, inclusive of all text, figures, tables, and references.** ***Note, some technical committees have specific abstract length requirements — refer to the Call for Papers document.*** **Submit Abstracts to the VFS Mira submission site at https://submissions.mirasmart.com/VFS2027/login.aspx**

FORMATTING GUIDELINES

The abstract should be formatted for printing on 8.5-inch by 11-inch paper. Margins should be 1.0 inch (top, bottom, and sides). A standard proportional font (such as Helvetica or Times) should be used throughout the abstract with single spacing. The remainder of the abstract should be no less than 10 points, although a larger font such as 11 point or 12 point is also acceptable. The text should be fully or left justified throughout the paper. A line may be skipped between each paragraph, as illustrated in this template, although it is not required. Indent new paragraphs after the first, as illustrated here. The maximum length of an abstract is five (5) pages, inclusive of all text, figures, tables, and references.

The font size in the title block is at the discretion of the author, but should never be less than 10 points. Identify the corresponding author with a footnote after their name in the title block. There is a non-invisible footnote at the end of the title of this section in order to force the abstract submittal statement at the bottom of the first page. The title block and author information should be centered across the width of the page. Authors from the same organization can combine the employer information.

A notation section is not required given the length restrictions of the abstract. The author(s) should define symbols in the text when they are introduced. Measurements should be provided in both the metric and dual (English) system, if possible, as the reviewers on the technical committees may be from several countries. Equations do not have to be numbered unless they are referred to in the text of the abstract.

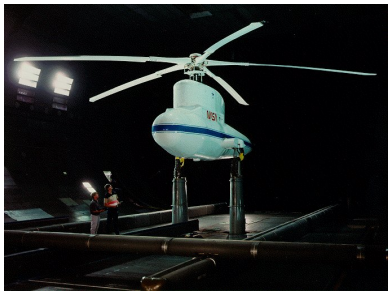


Figure 1. Sikorsky bearingless rotor mounted in the NASA Ames 40- by 80-Foot Wind Tunnel.

Figures and tables should be numbered, provided a relevant (short) caption/title, and placed as close to the reference in the text as possible. If this is not feasible, then they should be placed at the end of the abstract, following the references. Figures and tables should be referenced in the text. Text can be wrapped around the figures and tables, as illustrated with Figure 1 and Table 1. Figure captions and table titles can be written in 8-point font, and they should be centered. It is recommended that after creating the PDF for submission on Mira that fonts and figures be reviewed for clarity. Authors should embed the fonts in the PDF to ensure that all reviewers can read the submission.

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the PDF file uploaded into the Mira site be no more than 2MB. The fidelity of figures can typically be reduced so that they retain salient features, but at a much reduced size.

ABSTRACT REVIEW PROCESS

Abstracts are reviewed by the relevant VFS Technical Committees. The author(s) should select a primary and secondary technical committee, based on the Call for Papers, where they believe that their abstract is most relevant. Sometimes the Forum Technical Chairs and Session Chairs identify "joint themes" across the different technical committees. So that abstracts may be considered for these "joint" sessions — or if the abstract was not submitted to the most appropriate technical committee. These guidelines ensure that the pool of abstracts reviewed by each committee is appropriate.

Table 1. AgustaWestland AW609 Aircraft Characteristics.

Characteristic	English	Metric
Engines	2 x P&WC[1] PT6C-67A turboshaft	
Passengers	6 to 9 pax + 1–2 crew	
Engine Power	2 x 1,940 shp	2 x 1,450 kW
Wingspan	33.8 ft	10.3 m
Length	46 ft	14.0 m
Height	15 ft	4.5 m
Proprotor Diameter	26 ft	7.9 m
Max Useful Load	5,500 lb	2,500 kg
Max Gross Weight	16,000 lb	6,974 kg
Range	750 nm	1,389 km
Service ceiling	25,000 ft	11,364 m
Vmax (at cruise)	275 kt	509 km/h

[1]P&WC: Pratt & Whitney Canada

The abstract selection process for the VFS Annual Forums is very competitive. On average, 75% of the submitted abstracts are selected for the presentation at the Annual Forum.

Each Technical Committee has its own process for rating and selecting abstracts, but they all have several items in common: how relevant is the work to rotorcraft, does this work advance the state of the art in the area, is the work new, and how complete is the work. The author(s) should use the abstract template to provide the reviewers with the information that they need to make their decisions. While application does not have to be on a specific rotating system, the author(s) must show that their work is salient to vertical lift.

These headings that follow this paragraph in the template are based on the general guidelines used by the Technical Committees in the review process, and some guidance provided to aid authors in writing an abstract. Authors are not required to use the heading styles in this template, but it is recommended that author(s) use some heading style for the next five topics so that the reviewers can rapidly find the information that they use in the review process.

DESCRIPTION OF THE PROPOSED PAPER

The description of the abstract should introduce the topic and provide some background, including a brief assessment of prior work by others. Authors should cite relevant references, outside of their own work, to indicate that they are aware of the technical state of the art and published literature in the area. Authors are reminded that this is a technical forum, and abstracts (and papers) should focus on new technical approaches rather than sales of a new software code or hardware device. In particular, this section should provide answers to the following questions: How does the proposed paper advance the state of the art? How does the proposed paper vary from prior presented/published state-of-the-art results, including, but not limited to the authors' own work.

AUTHOR RESPONSIBILITY / AI POLICY

Authors are fully responsible for the accuracy, originality, validity, and integrity of all submitted work, regardless of whether AI tools were used during content development. Authors shall not:

- Alter or misrepresent technical information.
- Change the meaning, interpretation, or conclusions associated with the content.
- Introduce inaccuracies, misleading information, or fabricated elements.

Authors are expected to review, verify, and approve the accuracy, integrity, originality, and validity of all content and materials prior to submission or presentation. The use of AI does not transfer authorship, accountability, or intellectual responsibility. No AI tool may be listed as an author, as AI systems cannot meet authorship criteria or assume accountability for the content.

PRIOR PUBLICATION

The goal of the VFS Forum is to present new technical advances to the rotorcraft community that have not been published or presented elsewhere. Therefore, it is important that author(s) identify if they have published similar results elsewhere in either a conference or a journal that the appropriate papers be cited. Along with the citations, author(s) should specify how the content of the proposed paper differs from these prior publications. Failure to cite prior publications and indicate how this effort differs may result in the abstract being ineligible for review by the Technical Committees.

SAMPLE RESULTS

Results representative of what the author(s) plan to provide in the final paper, if the abstract is accepted, can help the Technical Committees during the review process. Sample results showing the type of data that are being analyzed, configurations studied, software applied or developed, and so forth aid in scoring the merit of the work. It is not required that author(s) show every type and all results of their work in the abstract. This section is likely the longest portion of the abstract and should provide enough information so that the reviewers can judge the quality of the proposed paper. Figures and tables, formatted similar to those illustrated earlier, should be included.

CURRENT STATUS OF THE WORK

There is typically 4-6 months between abstract acceptance and the final paper submission. This time period must also include any clearance from employers or funding agencies, and may well require multiple clearances. In this section, the author(s) should indicate how far the work has progressed at the abstract submittal date, how much of the work needs to be completed, and how much of the paper has already been written. It is important that if additional testing or high performance computing is still needed for successful completion of the paper that the authors note risk assessment and mitigation.

ACKNOWLEDGMENTS

If needed, one or more acknowledgments to contributors, a sponsor or technical monitor should be placed at the end of the abstract, before the references section. Also include any research or project support or funding sources here.

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All scientific content, study design, data collection, analysis, interpretation of results, and conclusions were developed, reviewed, and approved by the authors.

REFERENCES

All reference material should be grouped in the final section of the abstract, numbered, and placed in the order cited in the prior text. Reference only that material which is readily available to the reviewers, who may be from across the globe. Do not include classified material, internal company memoranda, or reports unavailable to these reviewers. The references should be cited in the text as: “This approach is discussed in Ref. 2. ...” or “Johnson (Ref. 3) showed that...” or “Reference 3 discusses the approach ...” or superscript citation style, such as “Johnson[1] showed that...”. Use the following styles for references:

For a book the book title should be italicized. Include the names of all authors with initials (avoid the use of et al. in the reference list). The publisher and place of publication should be stated. Inclusive page numbers and/or chapter number should always be included. Examples are:

1. Johnson, W., *Helicopter Theory*, Princeton University Press, Princeton, NJ, 1980, pp. 808–813.

2. Leishman, J. G., *Principles of Helicopter Aerodynamics*, Cambridge University Press, New York, NY, 2000, Chapter 10.

For a section in a book, the following style should be used:

3. Friedmann, P. P., and Hodges, D. H., “Rotary-Wing Aeroelasticity with Application to VTOL Vehicles,” *Flight-Vehicle Materials, Structures, and Dynamics*, edited by A. K. Noor and S. L. Venneri, Vol. 5, Part II, Chap. 6, American Society of Mechanical Engineers, New York, NY, 1993, pp. 299–391.

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4. Marchman, J. F., III, and Uzel, J. N., “Effect of Several Wing Tip Modifications on a Trailing Vortex,” *Journal of Aircraft*, Vol. 9, (9), 1972, pp. 684–686.

For Journal of the American Helicopter Society Volume 1 to Volume 53 (2008):

5. Chopra, I., “Dynamic Stability of a Bearingless Circulation Control Rotor Blade in Hover,” *Journal of the American Helicopter Society*, Vol. 30, (4), 1985, pp. 40–47. DOI: 10:4050/JAHS.30.40.

For Journal of the American Helicopter Society Volume 54 (2009) to Current:

6. Yeo, H., Potsdam, M., and Ormiston, R. A., “Rotor Aeroelastic Stability Analysis Using Coupled Computational Fluid Dynamics/Computational Structural Dynamics,” *Journal of the American Helicopter Society*, Vol. 56, (4), October 2011, pp. 1884–2013. DOI: 10.4050/JAHS.56.042003.

For a report, the following style should be used:

7. Carpenter, P. J., and Friedovich, B., "Effect of a Rapid Blade-Pitch Increase on the Thrust and Induced-Velocity Response of a Full-Scale Helicopter Rotor," NACA TN 3044, 1953.

8. Johnson, W., "A Comprehensive Analytical Model of Rotorcraft Aerodynamics and Dynamics, Part I: Analytical Development," NASA TM 81182, 1980.

For a conference paper, the paper number (where available) and proceedings volume information must be given. For VFS meetings, the location of the meeting should be given. Note, prior to 2019, VFS was known as AHS (American Helicopter Society). Examples of this style are:

9. Sadler, S. G., "A Method for Predicting Helicopter Wake Geometry, Wake-Induced Inflow and Wake Effects on Blade Airloads," American Helicopter Society 27th Annual Forum, Washington, DC, May 1971.

10. Brentner, K. S. and Jones, H. E., "Noise Prediction for Maneuvering Rotorcraft," Paper AIAA 2000-2013, 6th AIAA/CEAS Aeroacoustics Conference, Lahaina, HI, June 12–14, 2000.

For an online article, the following style should be used:

11. Roy, A., "Composites Opportunities in eVTOL," *Composites World*, March 18, 2023, www.compositesworld.com/articles/composites-opportunities-in-evtols.