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# INTRODUCTION

This template is adapted from the *The Vertical Flight Society* (VFS) guidelines for Forum abstracts and is used with VFS permission for the European Rotorcraft Forum. 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 themaximum size of the PDF file uploaded to the submission site should be no more than 5MB. The fidelity of figures can typically be reduced so that they retain salient features, but at a much reduced size. **Abstracts should be submitted via the ERF2024 submission site https://www.3af-erf2024.com/. The maximum length of an abstract is four (4) pages, inclusive of all text, figures, tables, and references.**

# FORMATTING GUIDELINES

Paper format is A4 (210 mm × 297 mm) with left and right margins of 20 mm, top margin of 25 mm and bottom margin of 30 mm. 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 point, 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, although it is not required. Indent new paragraphs after the first, as illustrated here.

The font size in the title block is at the discretion of the author but should never be less than 10 point. 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 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 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 the metric system. Equations do not have to be numbered unless they are referred to in the text of the abstract.

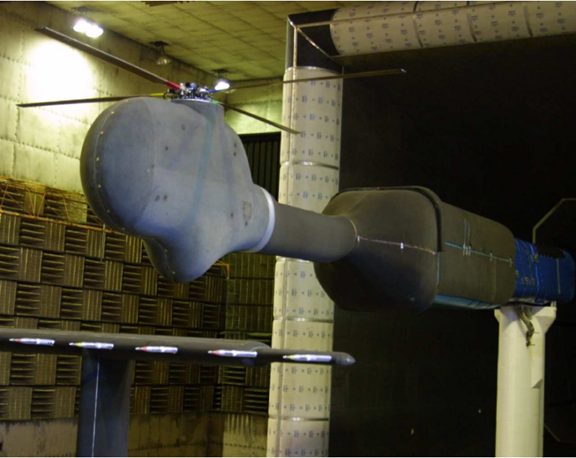


Fig. 1. The HART II hingeless model rotor in the DNW-LLF 8 m × 6 m open jet configuration. Credits: DNW

Figures and tables should be numbered, provided with 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 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.

# ABSTRACT REVIEW PROCESS

Abstracts are reviewed by the ERF International Committee. The author(s) should select a topic, based on the Call for Papers, where they believe that their abstract is most relevant. The ERF International Committee may rearrange the abstract in relevant session per topic when building the conference program.

The abstract selection process for the European Rotorcraft Forums is competitive.

Table 1. AgustaWestland AW609 Aircraft Characteristics.

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristic | English | Metric | |
| Engines | 2 x P&WCa 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 |

aP&WC: Pratt & Whitney Canada

The process for rating and selecting abstracts includes: 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 four pages 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.

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These headings that follow this paragraph in the template are based on the general guidelines used by ERF International Commitee 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. 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.

# PRIOR PUBLICATION

**The goal of the European Rotorcraft 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 ERF International Committee.

# SAMPLE RESULTS

Results representative of what the author(s) plan to provide in the final paper, if the abstract is accepted, can help the ERF Interantional Commitee 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 like 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.

# 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 “Johnson1 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 (the use of *et al.* is not acceptable for use 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:

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:

1. 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.

For a journal reference the title of the journal is italicized. All authors must be stated (do not use *et al.* for multiple authors). The volume, number and page numbers of the article must be given. Include the digital object identifier (DOI), if known. The followingstyle should be used:

1. 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)**

1. Chopra I., “Dynamic Stability of a Bearingless Circulation Control 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**

1. 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), Oct. 2011, pp. 1884–2013. DOI: 10.4050/JAHS.56.042003.

For a report, the following style should be used:

1. 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 Vertical Flight Society 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:

1. 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 Proceedings, Washington, DC, May