International Hydrofoil Society (IHS)
Mandles Prize for Hydrofoil Excellence
2014 – 2015 Competition Rules
1 November 2014

I. COMPETITION PHILOSOPHY

The principal objectives of the competition are:

- To promote hydrofoil engineering technology.
- To increase the participating students' understanding of and competence in ship and craft engineering and design.
- To stimulate interest in hydrofoils and hydrofoil-assisted ship and craft engineering, design and construction as a career choice.

Secondary objectives are:

- To recognize and reward outstanding student hydrofoil and hydrofoil-assisted ship and craft engineering, design and construction projects.
- To provide an opportunity for outstanding student hydrofoil projects to be presented to current students of ship engineering, design and construction and the broader membership of the profession.

The Selection Committee's judgment will be based solely on the material presented in the submitted entries; therefore, technical content is critically important. References cited are an important aspect of technical content and should reflect the best technical authorities and background information. The Selection Committee is primarily interested in evidence that students have achieved a good understanding of the engineering, design or construction process, as indicated by their approach, the validity and comprehensiveness of the work done, the critical design decisions made along the way and the rationale for those decisions, particularly decisions made based on trade-off studies performed.

Results produced by a computer code must be accompanied by enough discussion to make it clear that the students have a good understanding of the workings of that code, its theoretical basis, its structure, limits on its applicability, and the degree to which it has been validated and accepted by the ship design technical community.

The work presented in a student entry is the basis for the Committee's technical score. An entry that is well written, with clear figures, tables and drawings, is well-organized and complete will score high. Section V below provides guidelines on organization and contents. The entry must clearly address each item of the desired contents for it to be deemed complete and should be structured so as to make it easy for the Committee judges to find the desired items.

Some common deficiencies which should be avoided are:

- Some key topics are not addressed (or can't be found)
- Missing, illegible or poorly labeled figures and drawings
- No explanation of the approach/methodology used for an analysis
- No rationale presented for a critical technical decision
- No discussion of an important analytical result
- No discussion of a possible approach to solving a problem discovered

II. GENERAL

1. Participants must be undergraduate or graduate students in an accredited college or university. They may compete as individuals or teams of up to six persons. More than one project may be submitted from a school and an individual student may participate in more than one project. Guidance may come from faculty advisers or mentors, but must be referenced and acknowledged. In order to open the competition to a wider spectrum of qualified entries, submissions based on work completed since 2010 will be eligible for the 2014 – 2015 Mandles Prize.

2. Projects that are developed in response to formal classroom requirements are eligible for the competition, as well as thesis projects or projects done independently of the curriculum. **The key aspect is that the entry must be on a topic that is focused on the application of hydrofoil technology.**

3. Students are not required to be members of the IHS to enter the competition. However, each person who enters, individually or as part of a team, will receive a free one-year IHS membership and subscription to the IHS Newsletter.

4. **Students intending to enter the competition must submit an Entry Form (copy attached) by March 15, 2015. Receipt of this form enables the IHS to communicate with them if the need arises. See Section III.**

5. Entries must be in English and in digital (pdf) format. They must be submitted by email to the Selection Committee Chair by May 1, 2015. Each entry must include the names, signatures and email addresses of all students who participated. The faculty adviser's name, signature and email address must also accompany the entry with a statement certifying that the work was done by the students.

6. First Prize will be $2500, with the award going directly to the student(s) submitting the winning project. A commemorative plaque will be presented to each winner and to their faculty adviser.

7. IHS will have the option to present up to two $1000 Honorable Mention awards each year, with the award going directly to the student(s) submitting the winning project(s). A commemorative plaque will be presented to each winner and to their faculty adviser.

8. If an individual student or team decides to withdraw from the competition, the Selection Committee Chair should be notified by email.

9. The winner(s) of the competition will have the opportunity to present the winning project at a future meeting of the International Hydrofoil Society. Please note that travel expenses will not be covered by IHS**.**

III. SCHEDULE

Significant contest dates are as follows:

Entry Forms due	On or before March 15, 2015
Entries submitted	On or before May 1, 2015
Awards announced	August 1, 2015
Awards presented	On or before September 15, 2015

The completed entry must be submitted to the Selection Committee Chair by email at prizechair@foils.org on or before May 1, 2015. Entries received after that date will not be judged or considered for an award.

IV. ENTRY REQUIREMENTS

The submitted entry should accomplish the following:

1. Demonstrate a thorough understanding of the technical objectives and demonstrate that specified requirements are met.

2. Describe the technical approach used to satisfy each of the objectives.

3. Present descriptions, sketches, system analyses and discussion of techniques used in sufficient detail to permit technical evaluation.

4. Besides the main body, all entries must include:

- Cover Page with Title and contact information (individual names or team member names, institutional affiliation, address, phone numbers, email addresses and university website)
- One-page Abstract including interesting and innovative features and aspects of the hydrofoil design, engineering or construction

Recommended format requirements, adopted from American Society of Naval Engineers (ASNE) Technical Paper Guidelines, are contained in **Appendix A** of these Rules. Use of these guidelines will facilitate the publication of winning entries in technical journals if that opportunity is offered**. Total page count, not including Cover Page and Abstract, shall not exceed 20 pages.**

5. Outline – The following general outline is recommended:

- Title
- Abstract
- Introduction and Background
- Methodology
- Analysis and Discussion
- Results (key findings, technical description of hydrofoil-related concept, subsystem development, craft design, or prototype construction)
- Conclusions and Recommendations for future engineering, design or construction
- References

V. FACTORS FOR JUDGING

1. Technical Content (65 points)
   - Background, sources, references
   - Understanding of subject and material
   - Breadth and depth of analysis
   - Systems engineering approach
   - Valid theories and reasoning
   - Appropriate methods and their application
   - Appropriate use of figures and tables
   - Interpretation of results
   - Handling of uncertainties, risks, negative factors
   - Appropriateness and clarity of conclusions

2. Documentation (15 points)
   - Organization, headings, fonts
   - Completeness and clarity of writing
   - Grammar, spelling, punctuation
   - Well-executed figures and tables

3. Other Factors (20 points)
   - Degree to which the paper is directly about hydrofoils*****
   - Magnitude, complexity and difficulty of the project
   - Originality and innovativeness
   - Value to other or future technologists and designers

*** This competition is about hydrofoil vessels and systems. Entries should not be mainly about other subjects and involve hydrofoils in only an incidental or peripheral way, e.g., the mission analysis of a high-speed craft that happens to use hydrofoil lift.**

NOTE: All entries are non-returnable. Decisions regarding finalists and winners are at the sole discretion of the Selection Committee and the International Hydrofoil Society (IHS). IHS retains the right to use any and all submitted work for press, publication and exhibit purposes. Copyright to the work is retained by the original author(s). **Appendix B,**

Approval and Release for Publication, must be completed and signed and a scanned image included with all reports submitted in response to this competition.

2014-2015 Competition Entry Form
International Hydrofoil Society Mandles Prize for Hydrofoil Excellence

Project Title: _____

School: _____

Individual or Team Member Name and email address			Graduation Date	Degree
:				

_____ _____
Name and Signature of Faculty Adviser Date

Adviser's
email address:_____

Adviser's Telephone Number: _____

[Note: The Faculty Adviser will be the contact person for follow-up queries or guidance, if necessary.]

Please complete and return signed form (scanned image) by email not later than March 15, 2015 to the Selection Committee Chair at: prizechair@foils.org and to Mark Bebar at: mbebar@csc.com

APPENDIX A

LAYOUT OVERVIEW

HEADER

Author(s) Name(s):

- Times New Roman 12

Paper Title:

- Times New Roman 18

BODY LAYOUT

Columns:

- It is preferred that authors use two columns, but one is acceptable.

Font Type and Size:

- Subhead Text: Times New Roman Bold 14
- Body Text: Times New Roman 11

Order of Content:

1. Abstract (Summarize principal points, between 200-300 words)
2. Introduction
3. Body Text and Figures*
4. Conclusion
5. References/Bibliography
6. Acknowledgements *(Optional)*:
   - List those who contributed to or facilitated the project addressed by the paper but were not listed as an author.
7. Author Bios
   - Include a short biography of each author who participated in the preparation of the paper. The principal author should be listed first.

* – Figures, graphs and pictures should be included in the paper where applicable. Please use Arial 10 as the font for figure captions.

SAMPLE LAYOUT

Author(s) Name(s) John Smith, P.E., Thomas H. Davis, Dr. Jennifer Boudreau
Engineering Company XYZ and atSEA Engineering

Paper Title

Marine Engineering in the 21st Century: Tackling Issues and Creating Solutions to Today's Problems

ABSTRACT

Abstract

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INTRODUCTION

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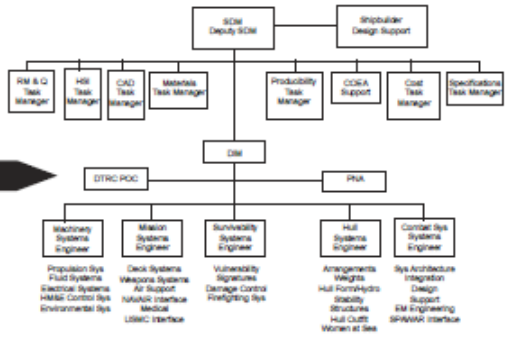

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Author Bios

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John Smith, P.E., is the Supervisory Marine Engineer for Engineering Company XYZ. In his role, he manag-es the Marine Engineering department and coordinates the research and development of new technologies. He received his bachelors degree in Marine Engineering at University College.

Thomas H. Davis is a marine systems engineer with Engineering Company XYZ. He has more than 20 years of experience in marine systems technologies and developement and has lead multiple team projects under DoD supervision. He received his BME from the College of University in 1985.

Dr. Jennifer Boudreau, Ph.D., is the Chief Marine Engineer for Innovation at atSEA Engineering, where she has more than 30 years experience. Dr. Boudreau is responsible for the research, development and pro-duction of new marine technologies. She holds three patents related to the field. She received her Ph.D. from College University.

APPENDIX B
Approval for Release and Publication

By signing this agreement the author(s) certify that they have obtained all appropriate approval and clearance for public release which might be required to permit the work to be published. The authors agree to provide objective evidence of such review and approval if requested.

Please indicate acceptance of this agreement by completing the following form:

1. The submitted work is unclassified and all appropriate approvals and releases for publication have been obtained.

2. The work is original and has not previously been published and is not currently being considered for publication elsewhere. (Please indicate any exceptions.)

Project Title _____

Author(s) name(s) and Academic Institution

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Author(s) email address(es) and signature(s)*

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Date _____

Faculty Adviser email address and signature:

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Date: _____

* If signed by only one of multiple authors, the signing author certifies that all authors understand and agree to the terms set forth in this agreement.

For questions about any aspect of this agreement, please contact the Selection Committee Chair at prizechair@foils.org