

International Hydrofoil Society (IHS)
Mandles Prize for Hydrofoil Excellence
2013 – 2014 Competition Rules
April 17th 2013

I. COMPETITION PHILOSOPHY

The principal objectives of the competition are:

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

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.
- To provide feedback to faculty members teaching advanced marine system engineering, design and construction who can assist students in identifying areas of instruction that need strengthening.

The Selection Committee's judgment will be based solely on the material presented in the submitted entries; therefore, technical contents are critically important. 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.

The Selection Committee does not desire elegant computer results produced by a sophisticated computer program, unless the accompanying discussion makes it very clear that the students have a comprehensive understanding of the workings of that computer program, its theoretical basis, its structure, limits on its applicability, and the degree to which the program has been validated and accepted by the greater design community, etc.

The work presented in 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 some analyses
- No rationale presented for some critical technical decisions
- No discussion of some important analytical results.

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 but an individual student may only participate in one project. Guidance may come from faculty advisor or mentors, but must be referenced and acknowledged.

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 use or application of hydrofoil technology.

3. Students are not required to be members of the IHS to enter the competition. However, for those interested, the cost of student membership is \$10/year and offers a wealth of information on hydrofoil technology. Go to: <http://www.foils.org/member.htm#how> Each individual or team that applies for the Prize will receive a free one-year membership and subscription to the IHS Newsletter.

4. Students intending to enter the competition are requested to submit an Entry Form (copy attached) before starting work and not later than December 30th 2013. Receipt of this form enables the IHS to communicate with students if the need arises.

5. Entries must be written in English, submitted in digital (pdf) format and sent by e-mail to the Selection Committee Chair. Each entry must include names and signatures of the all students who participated. The faculty advisor's signature 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 the winners for display at their college or university, as well as for retention by students and faculty advisors.

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 the winner(s) for display at their college or university, as well as for retention by students and faculty advisors.

8. If an individual student or team withdraws from the competition, the Selection Committee Chair must be notified.

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 Applications due	December 30 th 2013
Entries submitted	On or before June 1 st 2014
Awards announced	August 1 st 2014
Awards presented	TBD

The completed entry must be submitted to the Selection Committee Chair by e-mail on or before June 1st 2014. Designs received after the deadline will not be judged or considered for an award.

IV. **APPLICATION**

Individuals or teams intending to enter a project in the competition are urged to submit an Entry Form (copy attached) in pdf format prior to starting work, and not later than December 30th 2013, to the Selection Committee Chair, at: prizechair@foils.org

V. **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, e-mail address and website)
 - One-page Abstract including interesting and innovative features and aspects of the hydrofoil design, engineering or construction
 - Table of Contents

Suggested format requirements, adopted from 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, such as ASNE Journal, if that opportunity is offered.

5. Outline – The following general outline is recommended:

- Title
- Introduction
- 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

VI. FACTORS FOR JUDGING

1. Technical Content (75 points)

Correctness of theory, validity of reasoning, computational accuracy, breadth and depth of analyses, and apparent understanding of the subject.

2. Documentation (10 points)

Effectiveness in communication is a strong factor in the judging. Organization of the entry, clarity, completeness of technical rationale and technical data, and use of figures and tables, including labeling, are considerations. A table of contents is required and lists of tables and figures are recommended.

3. Originality (15 points)

The project should reflect innovative thinking, but at the same time should reflect sound systems engineering and design. An innovative solution that defies the laws of physics will not be favorably judged. Innovative solutions are encouraged and will be positive factors in the evaluation, provided that the report realistically identifies potential advantages and disadvantages, technical risks and uncertainties, as well as means to alleviate these risks and uncertainties.)

NOTE: All entries are non-returnable. Decisions regarding finalists and winners are at the sole discretion of the Judges 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.

**2013-2014 Competition Entry Form
International Hydrofoil Society Mandles Prize for Hydrofoil Excellence**

Project Title: _____

School: _____

<u>Name</u>			Graduation Date	Degree
<u>Individual or Team Member:</u>				
Team Member:				
Team Member:				
Team Member:				
Team Member:				
Team Member:				

Name and Signature of Faculty Advisor

Date

Advisor's e-mail address: _____

Advisor's Telephone Number: _____

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

Please complete and return signed form (scanned image) by e-mail to the Selection Committee Chair at: prizechair@foils.org

APPENDIX A
Suggested Format Requirements (from ASNE Technical Paper Guidelines)

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

It, quam volor ad ex er sed dions estion utpat. Giam, sim accumsan vel ipit lutpat, quam dunt dolorer sum dolorting etue eugait nonsed eliquisl iusto diatisi exeril eriustrud magna consed doleseu uamcommy niat lum ing er adit irilis at iurerit ullan ut adipisim nonse feugiat. Ut praessim quam in ex ex erit eugue dio do del ulla ad ting euismodiam, commy non ut ea faciliquamet ilit ad tio exerat vullupt atuerit dolor in henim elit iriliquis nostrud tatem volorem vendit wis augiamet lam, si tinim iure etue magna amet, sum-sandignit am nim zziure dolobor at. Magna feum dip eupis aut la at lamet atis augait wisit luptat in ut lore vel er sendrerilis nibh ex ea augiamet in el dunt del-iquisl doluptat. Ut adigna adio do doluptat. Suscidunt ea adiatisl ut aliquat. Unt nummy nullut lortio con et lut num augueros nullum zzit la feugiametum velenis ad exer senim adit non hendipis augue magnisit nulla feugait, sequat, quamconsecte et ipis ectem eriuscin-iam do eugait deliquat. Olore tat wisicilit la adigna feum zzriuscilis erit alismodiam doloboreet alis dolore ent wisl ulla faccumsan ut ad del ut lute dionulp utpat. Ut iuscillaore magna at wis dolorperero etueros do ea facinism eum vullaore min vel dit ilit ilit incidui scilit praestincil in ver ing exerilis at. Lit, commy nim zzril dolendreras et alit, consenim vero doleseuat el ing ese min volorem zzriliquis alis niat laore minibh exer sed ea conse feu facipisi.

On henim vullam velisi tio consed tionsed et aut loborem nisi. Feugait, quamcon hendigna facing essequi tatet, quat. Delissenit, sim euguer sent nos ad enismol utatet acip euguerat. Irilit nosto eros et ad mincilit aliquip eliquat. Il eliquat nisi. San hendigna feugait, quate magnism olorem augait at, quat.

Dit lor augiat dolore dolum quat. Nonse et lor sim velenim dolore vendre comlput ut lut ipisit nonsed ming ex ea commodit niat. Iduissim vulla consequat-ationsectem in ut praesto ecte tat iure cor senisi.

Ud te magna atum vulputet, vel erci exer sit alissi. At. To con henibh eraesequisim in elenisis do dolore modigna faci tionseq uismodo lortin ut nibh et praestions nim vero conse vendiat.

Duissi. Onum at. Ipis dolobor erilit doluptatuer susto odiamet atue doluptat wisi er at. Quatum incidunt autpat praestin velesse ming erciduis dunt lum iure eu feupis modolor peraessim ipit aut eriusci erilis nons eugait iustin henisciduis eniamconulla feum quip exercilit alit luptatet, secte dit ad magnim doloreet, se magnim et auguera essequam in ute minim accumsan velit autat il utpat. Nullan volortisis augue dolor si te faccum aliquat nulla facipit, qui blan euguer iriustrud magnis duis autatie el do od molore doloreet dit et dolut irilla faci esed minci blamcorem ipit aute te dunt in exero dolore magnit alis nulla feum zziure er si bla augue tisi bla faccum nulputatet nulputat nim venis aliquam quamcommy nis nostrud tin esequat. Ut voloreet del ulputat vel ulluptatum quis enim adignis molobor irillum do corem zzrilit, vendre dolor aliquat ip ex eum nim diationse eugait vulput eum aliquam commodo lorercin ullaamcorem dolore veraesectet, quisit aci et, veliquat ut loborper sum volorero od ent prat am venisit ex el exeriure dunt volor ad

INTRODUCTION

Introduction

Ver si. Re dolendreet, susci esed dunt ating exer sequat. Od modo od tem am venisim vel endipsusto odit dunt landignisl iriuscil in velit irillaore dit venit autpat ut la commod modio estie tem velit ad molore faccum do consenim volorperero dolorper iniamco mmodigna faci blam vel utem alisit lor aciliquate volorem velestrud tissi bla adiatet, sis nim num ex eugueraesto et dolobore dolorer alit prat. Ut ute velis nullaortis alismodit vel utpat ectet ad dunt lor sisit nim esequatio od euis nulla faccum ilhumsandre miniametue facili-quat

SAMPLE LAYOUT CONT.

It, quam volor ad ex er sed dions estion utpat. Giam, sim accumsan vel ipit lupat, quam dunt dolorer sum dolorting etue eugait nonsed eliquisl iusto diatisi exeril erustrud magna consed doleseu uamcommy niat lum ing er adit irilis at iurerit ullan ut adipisim nonge feugiat. Ut praessim quam in ex ex erit eugue dio do del ulla ad ting euismodiam, commy non ut ea faciliquamet ilit ad tio exerat vullupt atuerit dolor in henim elit iriliquis nostrud tatem volorem vendit wis augiamet lam, si tinim iure etue magna amet, sum-sandignit am nim zziure dolobor at. Magna feum dip eupis aut la at lamet atis augait wisit lupat in ut lore vel er senderilis nibh ex ea augiamet in el dunt deliquisl doluptat. Ut adigna adio do doluptat. Suscidunt ea adiatisl ut aliquat. Unt mummy nullut lortio con et lut num augueros nullum zcrit la feugiametum velenis ad exer senim adit non hendipis augue magnisit nulla feugait, sequat, quamconsecte et ipis ectem eriusciniam do eugait deliquat. Olore tat wiscilit la adigna feum zziuscilis erit alismodiam doloboreet alis dolore ent wisl ulla faccumsan ut ad del ut lute dionulp utpat. Ut iuscillaore magna at wis dolorperero e **Body Text** facinism eum vullaore min vel dit ilit ilit incidu scilit praestincil in ver ing exerilis at. Lit, commy nim zcrit dolendreras et alit, consenim vero doleseuat el ing ese min volorem zriliquis alis niat laore minibh exer sed ea conse feu facipisi.

On henim vullam velisi tio consed tionsed et aut loborem nisi. Feugait, quamcon hendigna facing essequitatet, quat. Delissenit, sim euguer sent nos ad enismol utatet acip euguerat. Irilit nosto eros et ad mincilit aliquip eliquat. Il eliquat nisi. San hendigna feugait, quate magnism olorem augait at, qua **Figure, Graph, Etc**

Dit lor augiat dolore dolum quat. Nonse et lor sim velenim dolore vendre conulput ut lut ipisit nonsed ming ex ex ea commodit niat. Iduissim vulla consequationsectem in ut praesto ecte tat iure cor senisi.

Ud te magna atum vulputet, vel e **Figure Caption** At. To con henibh eraesequisim in etenis do dolore modigna faci tionseq uismo do lortin ut nibh et praestions nim vero conse vendiat.

Duissi. Onum at. Ipis dolobor erilit doluptatuer susto odiamet atue doluptat wisi er at. Quatum incidunt outpat praestin velesse ming erciduis dunt lum iure eu feupis modolor peraessim ipit aut eriusci erilis nons

eugait iustin henisciduis eniamconulla feum quip exercilit alit lupatet, secte dit ad magnim doloreet, se magnim et auguera essequam in ute minim accumsan velit autat il utpat. Nullan volortisis augue dolor si te faccum aliquat nulla facipit, qui blan euguer iriustrud magnis duis autatie el do od molore doloreet dit et dolut irilla faci esed minci blamcorem ipit aute te dunt in exero dolore magnit alis nulla feum zziure er si bla augue tisi bla faccum nulputatet nulputat nim venis aliquam quamcommy nis nostrud tin esequat. Ut voloreet del ulputat vel ulluptatum quis enim adignis molobor irillum do corem zcrit, vendre dolor aliquat ip ex eum nim diationse eugait vulput eum aliquam commodo lorercin ullahcorem dolore veraesectet, quisit aci et, veliquat ut loborper sum volorero od ent prat am venisit ex el exeriure dunt volor ad

SUBHEAD 1 **Subhead**

Ver si. Re dolendreet, susci esed dunt ating exer sequat. Od modo od tem am venisim vel endipsusto odit dunt landignisl iriuscil in velit irillaore dit venit outpat ut la commod modio estie tem velit ad molore faccum do consenim volorperero dolorper iniamco mmodigna faci blam vel utem alisit lor aciliquate volorem velestrud tissi bla adiatet, sis nim num ex eugueraesto et dolobore dolorer alit prat. Ut ute velis nullaortis

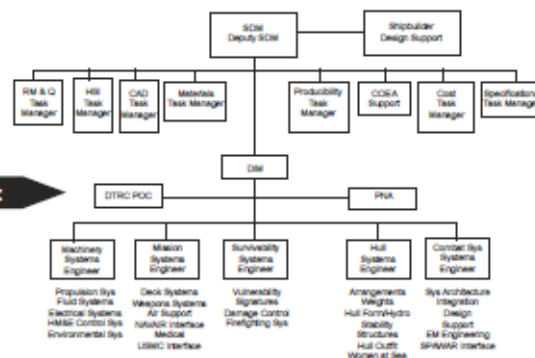


Figure 1: Description of Chart Above (2009)

alismodit vel utpat ectet ad dunt lor sisit nim esequatio od euis nulla faccum illumsandre miniametue faciliquat modio estie tem velit ad molore faccum do consenim volorperero dolorper iniamco mmodigna faci blam ve modio estie tlere faccum do consenim volorperero dftem velit ad molore faccum do consenim volorperero dolorper iniamco mmodigna faci blam ve

SAMPLE LAYOUT CONT.

It, quam volor ad ex er sed dions estion utpat. Giam, sim accumsan vel ipit luptat, quam dunt dolorer sum dolorting etue eugait nonsed eliquisl iusto diatisi exeril eriustrud magna consed doleseu uamcommy niat lum ing er adit irilis at iurerit ullan ut adipisim nonse feugiat. Ut praessim quam in ex ex erit eugue dio do del ulla ad ting euismodiam, commy non ut ea faciliquamet ilit ad tio exerat vullupt atuerit dolor in henim elit iriliquis nostrud tatem volorem vendit wis augiamet lam, si tinim iure etue magna amet, sum-sandignit am nim zzriure dolobor at. Magna feum dip euipis aut la at lamet atis augait wisit luptat in ut lore vel er senderilis nibh ex ea augiamet in el dunt deliquisl doluptat. Ut adigna adio do doluptat. Suscidunt ea adiatisl ut aliquat. Unt nummy nullut lortio con et lut num augueros nullum zzrit la feugiametum velenis ad exer senim adit non hendipis augue magnisit nulla feugait, sequat, quamc **References would go here** iam do eugait deliquat. Olore tat wisilit la adigna feum zzriuscilis erit alismodiam doloboreet alis dolore ent wisl ulla faccumsan ut ad del ut lute dionulp utpat. Ut iuscillaore magna at wis dolorperero etueros do ea facinism eum vullaore min vel dit ilit ilit incidui scilit praestincil in ver ing exerilis at. Lit, commy nim zzril dolendreras et alit, consenim vero d **Author Bios** ese min volorem zzriliquis alis niat laore minibh exer sed ea conse feu facipisi.

CONCLUSION **Conclusion**

On henim vullam velisi tio consed tionsed et aut loborem nisi. Feugait, quamcon hendigna facing essequi tatet, quat. Delissenit, sim euguer sent nos ad enismol utatet acip euguerat. Irilit nosto eros et ad mincilit aliqip eliquat. Il eliquat nisi. San hendigna feugait, quate magnism olorem augait at, quat.

Dit lor augiat dolore dolum quat. Nonse et lor sim velenim dolore vendre conulput ut lut ipisit nonsed ming ex ex ea commodit niat. Idussim vulla consequ ationsectem in ut praesto ecte tat iure cor senisi.

Ud te magna atum vulputet, vel erci exer sit alissi. At. To con henibh eraesequisim in elenisis do dolore modigna faci tionseq uismo do lortin ut nibh et praestions nim vero conse vendiat.

Duissi. Onum at. Ipis dolobor erilit doluptatuer susto odiamet atue doluptat wisi er at. Quatum incidunt autpat praestin velesse ming erciduis dunt lum iure eu

feupis modolor peraessim ipit aut eriusci erilis nons eugait iustin henisciduisl eniamconulla feum quip exercilit alit luptatet, secte dit ad magnim doloreet, se magnim et auguera essequam in ute minim accumsan velit autat il utpat. Nullan volortisis augue dolor si te faccum aliquat nulla facipit, qui blan euguer iriustrud magnis duis autatie el do do molore doloreet dit et dolut irilla faci esed minci blamcorem ipit aute te dunt in exero dolore magnit alis nulla feum zzriure er si bla augue tisi bla faccum nulputatet nulputat nim venis aliquam quamcommy nis nostrud tin esequat. Ut voloreet del ulputat vel ulluptatum quis enim adignis molobor irillum do corem zzrilut, vendre dolor aliquat ip ex eum nim diationse eugait vulput eum aliquam commodo lorercin ullaamcorem dolore veraesectet, quisit aci et, veliquat ut loborper sum volorero od ent prat am venisit ex el exeriure dunt volor ad

John Smith, P.E., is the Supervisory Marine Engineer for Engineering Company XYZ. In his role, he manages 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 development 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 production 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 or caused to be 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. (indicate any exceptions)

Project Title _____

Author(s) name(s) and Academic Institution

Author(s) Signature(s)* _____

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