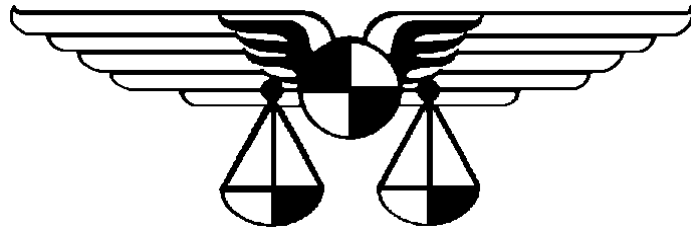


# **Society of Allied Weight Engineers, Incorporated**

*Serving the Aerospace - Shipbuilding - Land Vehicle and Allied Industries*



## **INSTRUCTIONS TO AUTHORS OF SAWE TECHNICAL PAPERS FOR THE**

**83rd Annual International Conference on Mass Properties**

**May 20 – 22, 2024**

Virtual (Microsoft Teams)

(Revised December 18, 2023)

[www.sawe.org](http://www.sawe.org)

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## ABSTRACT

These instructions provide information you need to prepare a technical paper and present it at the SAWE Annual International Conference. It is suggested that **ALL authors**, even those experienced with our conferences, read this entire document to be familiar with any changes or updates to our process. All SAWE Technical products, including submitted papers must pass the SAWE Peer Review Process to be accepted by the SAWE. This process is shown below on page 6. The instructions are organized in six parts:

1. Timetable and points of contact for authors
2. Required format for a technical paper
3. Things to consider while writing a technical paper
4. Preparing for the conference
5. Guidance for clear writing (Appendix A)
6. Best Paper Award (Appendix B)

Part 1, the timetable and points of contact, are specific to this year's conference and your point of contact in the Society. Your point of contact in the Society has the official title of Technical Director. Parts 2-5 are generic. They apply to any author participating in any SAWE conference.

For additional informational on the Annual International Conference go to the SAWE website at [www.sawe.org](http://www.sawe.org).

Good luck with your paper!

## CALENDAR OF EVENTS FOR SAWE AUTHORS

# 83<sup>rd</sup> Annual International Conference on Mass Properties

May 20 – 22 2024

Virtual (Microsoft Teams)

- August 2023 SAWE issues the Call for Papers for the 2024 international conference.
- Aug - Nov 2023 Tell the Vice President – Technical Director (VPTD) that you intend to write a paper for the conference. Give him your paper title and a preliminary abstract if possible.
- 19 Jan 2024 Your final abstract should be in the Technical Director’s hands, if possible, for use in assigning your paper to a conference technical track. Abstracts will still be accepted after this date; however, the January cutoff decides which papers will be listed in the conference announcements.
- Jan. 2024 The Vice President – Technical Director will begin assigning authors their SAWE Paper Number and Group (see Figure 1).
- Feb. 2024 Conference Announcement and registration materials are sent out. When you receive your material, complete the registration on-line or mail the forms as noted in the announcement instructions. All authors **MUST** register for the conference.
- 15 April 2024 Forward one copy of your finished paper to the Vice President – Technical Director (an electronic copy is required, 1) PDF for judging and official purposes and 2) Microsoft Word® format for publication in SAWE journal). The VPTD will create a PDF copy if the author is unable to do so. You must meet this date to be eligible for the Best Paper Award. Make sure you include a short biography of yourself in the paper; as it will be used to introduce you at your track. Notify Vice President – Technical Director of your audio-visual/computer equipment needs for presenting the paper.  
E-mail: [technical@sawe.org](mailto:technical@sawe.org)  
Or submit your paper to the SAWE website using the following URL:  
<https://www.sawe.org/technical/papers/submittal>
- 6 May 2024 Latest date for initially submitting conference papers
- 20 - 22 May 2024 Group photographs will be taken just prior to scheduled session/track for all chairman and presenters. Please attend this event to assist in the taking of group photographs and the final planning of the day’s schedule.  
For additional information contact the Vice President – Technical Director:  
Robert Zimmerman Home: 1-303-838-6641  
Mobile: 1-720-499-7115  
E-mail: [robert.zimmerman@sawe.org](mailto:robert.zimmerman@sawe.org)

**NOTE:** Most dates above are “no-later-than” dates. Papers and materials received **BEFORE** the deadlines are appreciated.

## REQUIRED FORMAT FOR A SAWE TECHNICAL PAPER

### *Content*

The Society of Allied Weight Engineers, Inc. is an international organization with members around the world. Foreign nationals will be attending our conferences and/or will have access to your paper as members of our Society. Papers ***cannot*** include nor be accepted with information that is controlled or restricted by **International Traffic in Arms Regulations (ITAR)** or **Export Administration Regulations (EAR)**. Disclaimers on the cover page that the paper does contain such information and distribution must be restricted will not be allowed. Additionally, disclaimers on the cover page that the paper does NOT contain such information cannot be accepted without a separate release form for verification and publication (see pages 8 and 9, and see the SAWE website to download a release form). It is the responsibility of the author, ***not*** the SAWE, to control the information presented in the paper and its associated conference presentation. Private authors whose work is solely their own, and are not writing as an employee of any public company, government agency, or institute of higher education, should so state on their release form.

### *Physical Size*

Prepare your paper sized for standard 8½ x 11-inch (216 x 279 mm) paper, to ensure the paper can be printed by all members as desired. The use of nonstandard sizes is discouraged. If you must use a nonstandard size, ensure that all printed material lies within an 8½ x 11-inch (216 x 279 mm) envelope.

*Printing hard copies is optional and is the responsibility of the author.*

For hard copies of papers, in the interest of conserving weight, cost, and filing space, it is necessary that both sides of each page be printed. Exceptions would be special charts, photographs, or drawings.

### *Binding*

If you choose to make paper copies (not required, please keep binding simple – a staple at the left top corner is adequate. Do not use spiral or plastic binding; this causes handling and storage problems.

### *Cover Page*

Your cover page must conform to the example provided in Figure 1. It includes the name of the Society, the assigned paper number, the group, title, author's name, position, and company or organization. The conference number, city, dates, the Society address, copyright marking, and ITAR and EAR disclaimer are also required. The paper number and group will be assigned by the VPTD as noted in the calendar of events on page one. You may suggest an applicable group from Table I that best describes your subject matter when you submit your abstract.

### *Page Formatting and Layout*

Technical papers represent the SAWE as well as the author. For that reason, papers will be judged on the physical look, layout, and format of the paper as well as their technical content. A clean, professional look is encouraged to enhance the visual appeal and readability of the paper.

Observe consistent margins and paragraph justifications throughout the paper. Suggested margins are a 0.75-inch (19-mm) margin on the left, right, and bottom of the page, and a 1.0-inch (25-mm) margin at the top of the page for the first written line. Page numbers should be used and centered between the right and left margins and located 0.75 in (19 mm) from the bottom of the page. The first page does not need to be numbered.

You may present charts, graphs, and pictures in the form most convenient for you. Observe consistent figure and table numbers and clear titles. Since most readers will have access to color copiers or printers, the use of color in your paper is acceptable and encouraged.

Some authors like to use a 2-column format for the text of their paper. If doing so, please ensure the font size makes the paper easily readable. A 12-point font is suggested. Also, if you use columns, all graphics and pictures should be sized to the full page width to assist with understanding text, labels, etc.

### ***Table of Contents***

If your paper exceeds ten pages or five definitive sections, a Table of Contents is an aid to the interested reader.

### ***Use of References***

The use of references adds credence to your work and may guide the reader to related work on the topic. References in the text should be numbered in brackets (e.g., “. . . as proved by Jones [1].”), and listed at the end of the paper in numerical sequence. See Figure 2 for examples of the correct style for listing references.

### ***Appendices***

Use appendices for case studies, lengthy computer output or flow charts, photo sequences with descriptions, or other such backup information. This avoids interrupting a train of thought that you may be building in the main body of the paper.

### ***Unit Usage***

All technical papers be prepared using the Inch-Pound Units System; using the secondary system is the Metric System – International System of Units (SI) is also acceptable.

### ***Biography***

A short biography should be included at the end of your paper to provide the reader an understanding of your background. It will also aid your track co-chairman in introducing you for your presentation. The information should include your education, company or organization, current position, affiliation, interesting assignments or programs, and any other papers presented. This helps the reader understand your background to discuss the topic of the paper.

### ***Abstract***

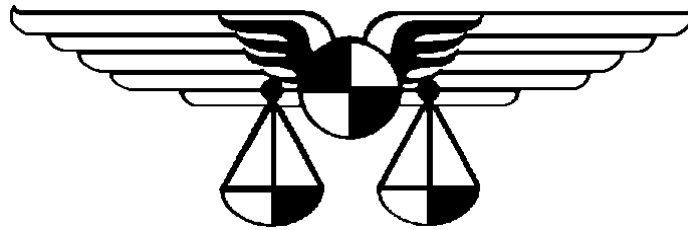
Include your abstract at the front of the paper as an introduction of the subject.

### ***Lists of acronyms or abbreviations, terms, symbols etc***

To make the paper readable, please include one list in a table format of each of these, before the main body of the paper. Include items which are unique to the paper or industry. If all the tables combined are longer than a page, the tables to the last appendix of the paper, but please put a note where someone can find them.

### ***List of Figures, Tables, Equations***

When the paper contains more than a few figures, tables, equation, you should add a list to the forward for each. The title of Figures should be on the bottom. The title for Tables should be on top. The Equations should be numbered, but only the significant equations should be listed (don't list the derivations steps in the table)



MASS PROPERTIES REPORTING  
John Doe, Senior Engineer  
The Smith Corporation

For Presentation at the  
**83<sup>rd</sup> SAWE International Conference**  
**on Mass Properties Engineering**  
May 20 – 22, 2024

Virtual Conference

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5734 E. Lucia Walk  
Long Beach, CA 90803

The Society is not responsible for statements or opinions in papers or discussions at the meeting.  
This paper meets all regulations for public information disclosure under ITAR and EAR.

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**FIGURE 1. Sample Cover Page**

*Note: A copy of the official SAWE wings logo is available on the SAWE website ([www.sawe.org](http://www.sawe.org)).*

**TABLE 1. SAWE Publications and Technical Paper Groups**

Group	Functional Description	Inclusions	Exclusions
<b>General Mass Properties Engineering or Cross Industry RP's</b>	Functional RP General Methods	description, development history Shared best practices Non Industry-specific methods Mass Properties Calculation and Verification	
<b>Other Engineering</b>	New Technology Design History	Sizing or design of vehicles, jigs, systems, etc. not covered elsewhere	
<b>Academic</b>	Student Papers Graduate Thesis Research Summaries Conference Papers Interface & Support Thesis	All Mass Properties Engineering papers based on work performed during academic studies, papers developed during pursuit of a degree. Papers by Professors, post doctoral works on MPE topics in academia submitted by students at conferences. Topics on how SAWE and Academia can support bachelors, MS, ME, and PhD students with MPE classes.	
<b>Aircraft</b>	Commercial Military General Aviation UAV Other Aircraft	Passenger, freight, cargo Combat, surveillance, cargo, rotarcraft, VTOL General aviation, corporate, rotarcraft Drones, taxi, inspection, eVtol, etc. Balloon, Airships, Hybrid, Parasail, Soaring	
<b>Ground Vehicles</b>	2 Wheel 4 Wheel Tracked Construction Rail Military	Motorcycles, mopeds, bicycles Cars, truck (light, heavy), sport, etc. Front end loader, BobCat, snowmobile Tractors, pavers, dump truck, crane, etc. Cargo, passenger, light rail, High Speed Tanks, amphibious, guns, rocket launchers, military tracked, etc.	
<b>Marine</b>	Naval Commercial  Working Recreational	Combatant, supply, special warfare, coast guard Cruise ships, container, tanker, gas, float on/off, Roll On/Off  Dredging, tug, barge, crane, fishing, ice breaker Sail, speed, submarine, personal water craft, etc.	Offshore Vehicles
<b>Missiles and Space</b>	Missiles Earth Orbit Spacecraft Sub-orbital Spacecraft Launch Vehicles Interplanetary Spacecraft	Unmanned, small, air-launch Science, Weather, Manned Scientific, manned, atmospheric research Boosters, sea-- launched, air launch, reuseable Beyond Earth Orbit, Rovers, Landers, return vehicles	
<b>Offshore</b>	Exploration Production Wind Aquaculture Support	Seismic, oceanography, oil drilling, fisheries Oil and Gas, floating and fixed production units Floating and fixed wind generators Fish, harvesting kelp, molluscks, etc. Offshore support vessels, diving, construction, etc.	
<b>SAWE, Inc</b>	Philosophy Evolution	Administration, history, justifications, surveys, etc Procedure updates, RP procedures	Business Info Ops Manual



- |     |  |
|-----|--|
| [1] | Anonymous, Style Manual, Revised Edition. Washington, D.C., US Government Printing Office, 1945.   |
| [2] | Boyle, Richard, "USS X-1 Power Plant, 1956-57", Naval Engineers Journal, Vol. 84 No. 2 (1972) pp. 42-50.   |
| [3] | Dudley, Darle W., Practical Gear Design, New York, NY, McGraw-Hill Book Company, Inc., 1954.   |
| [4] | Jordan, Richard D. and Marion J. Edwards, Aids to Technical Writing, Bulletin No. 21, Vol. 47, No. 24. Minneapolis, Minn., University of Minnesota Experimental Station, 1944.           |
| [5] | NAVSEA Technical Manual 0905-475-2010 Naval Distillate Fuel Conservation Program Handbook, Washington, D.C., Dept. of the Navy, February 1971.   |
| [6] | Shoemaker, W.B., Jr., "Nanosecond R-F Pulses for Waveguide Fault-finding," Thesis for M.S. degree in Electrical Engineering, US Naval Postgraduate School, Monterey, CA, September 1968. |

**FIGURE 2. Sample “List of References” or a “Bibliography List”**

***List of References or Bibliography List***

The general format for a reference citation is:

[#] Author, “title”, publisher, Journal/document number/page/ Year, Page or pp

Show the location of the list of reference or bibliography list in the table of content, if is used.

In both types of lists an author's name should be cited in the same format, and in which it appears on the title page of a book or article. If a book or article has two authors, only the first named author should be reversed as shown in the example reference [4] above. If more than two authors, use the form: Jones, A. B., John Doe and W.T. Door . . . etc.

A bibliography list may be used in lieu of a list of references. The same citation style is used, except that a bibliography is merely a list of material or publications pertinent to the manuscript's subject. The names of authors should be arranged alphabetically.

***General Layout of Paper***

Foreward pages

Cover Page based on figure 1, with your paper title, authors names, conference location & date.

Table of contents – if used

Lists of acronyms, abbreviations, terms, symbols, etc

List of Figures (*use the automated features in your word processor*)

List of Tables (*use the automated features in your word processor*)

List of Equations (significant) (*use the automated features in your word processor*)

Page 1 – Main body of the paper

Abstract

Introduction

Content (i.e.problem/solution, issue/opions, project description/MPE challenge/solution, etc }

Summary - Conclusion, Recommendations, further work

List of References

Author(s) Bios

Appendices (i.e. the page numbers can be A-1, A2 or a continuation of the main body of the paper)

## **SAWE PEER REVIEW**

The SAWE is committed to excellence in its technical documentations. This includes any papers and presentations to be presented at SAWE Conferences as well as other Products such as Handbooks, Textbooks, and Standards and Practices Documents. Therefore, the SAWE has instituted a Peer Review Process to ensure that all information associated with the SAWE has undergone a peer review process for technical correctness. Student papers and vendor generated presentations are specifically excluded. Each author should plan on their submission being subject to peer review by a committee of mass properties experts within the SAWE and plan their submissions accordingly. It should be noted that authors who have their own organizations perform internal peer review should find that the SAWE process does not impede the schedule for presentations and publications. However, it is always possible that a difficulty may be found which will delay acceptance of a paper or presentation. The SAWE will be evaluating submissions according to 5 General Categories:

- 1) Equation Problems
- 2) Premise Problems
- 3) Logic Issues
- 4) General Typos
- 5) Poor English

Categories 1 – 3 are grounds for asking the author to fix the problems before we will allow publication. Categories 4 & 5 are information for authors. We are not grammar police nor are we writing people's Products for them, but the author may appreciate a problem being pointed out which will make their Product more readable.

### **Category 1 (Equation Problems)**

- A) Equations that don't equate. The reviewer should make sure that the equations presented result in the stated equivalences.
- B) Dimensionally flawed equations. The reviewer should follow the logic of the equation to look for errors such as mixing mass and force, or inconsistent terms.
- C) Incorrect derivations. Are the equations correctly derived? Do sequential equations follow from one equation to the next?
- D) Typos in equations. Are there missing or incorrect symbols, signs, operators, or parameters?
- E) General mathematical errors. Is the arithmetic and algebra correct?

### **Category 2(Premise Problems)**

- A) Does the paper support the premise?
- B) If the premise is a new concept, does the paper build a consensus towards the conclusion? Do the Objective and Conclusion agree?

### **Category 3 (Logic Issues)**

Are there problems with statements – does something seem illogical?

### **Category 4 (General Typos)**

These are not show-stoppers, but should be addressed

### **Category 5 (Poor English)**

While not every author has a great command of English, and we are not Grammar Police, we can offer help in areas such as verb-subject agreement, run on sentences, and use of colloquialisms. The author may choose to ignore this advice, as such problems will not prevent a Product from going forward to publication.

## **COPYRIGHT RELEASE FOR SAWE TECHNICAL PAPERS**

All technical papers presented and/or distributed at SAWE international conferences become part of the permanent technical library of the Society, and are retained by the Society for sale to both members and non-members who may have interest in them. For this reason, a copyright release form ***must*** accompany every paper. This will not give the SAWE the right to alter or change any paper, but is necessary to allow us to sell or distribute the paper under our name, with full credit to the author and their company. This form also approves the release of the paper by the author's parent company, agency or school/organization and verifies that it contains no restricted or protected information under ITAR/EAR regulations. Note that some companies may elect to retain the copyright to a paper in their name, but give the SAWE license to publish it as part of our library. Authors writing privately, whose work represents only themselves and their own ideas, should also fill out a release form stating such.

A sample of the release form currently used by the SAWE for these purposes is given on the next two pages. A copy of the actual form may be downloaded from the Society website at (<https://www.sawe.org/technical/papers/instructions>). Contact the VPTD or Executive Director of the Society for questions or assistance with using this form.



## COPYRIGHT TRANSFER/RELEASE FORM

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**Paper Title:** \_\_\_\_\_

**Paper #:** \_\_\_\_\_ **Meeting:** \_\_\_\_\_

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(Check the box for the applicable statement below)

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or

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**Signature of Author:** \_\_\_\_\_ **Date:** \_\_\_\_\_

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**Signature of Author:** \_\_\_\_\_ **Date:** \_\_\_\_\_

*Only one signature is required for joint authors and guarantees that all authors agree to the terms set forth herein.*

Contact Information:

Author's Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-Mail \_\_\_\_\_

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\_\_\_\_\_  
Signature of Author or Other Copyright Owner

\_\_\_\_\_  
Organization

\_\_\_\_\_  
Date

## THINGS TO CONSIDER WHILE WRITING A TECHNICAL PAPER

There will be only a limited number of people who will actually see your presentation at the conference. All others will only be able to obtain the information by reading the paper. Also, **awards** for technical papers **are based on** the judges' assessments of **the written word exclusively**. Although most authors are familiar with the basic principles of technical writing, it is often worthwhile to review several points. The following suggestions are provided to help you get better reception for your paper.

### *Technical Content*

It is helpful to remember that the SAWE will be including your paper as part of its technical library, and has a vested interest in seeing that it is a sound technical presentation. Your paper will be representing the SAWE as well as you and your company/organization to future readers. For that reason, technical content will cover up to 50% of a paper's score in the best paper judging. ***A peer review of the approach, methodology, and conclusions of the paper by members of your organization is highly encouraged as peer review by the SAWE technical committee will occur.*** The earlier you can complete your paper prior to the SAWE conference, the more comprehensive this review can be.

Note that virtually all companies or organizations will require a review of the paper prior to releasing it to the SAWE. Most such internal reviews may be quite lengthy. It is ***strongly*** suggested that you review your company's release procedure and plan for the time involved in that process. This will minimize any impact in getting your paper to the SAWE on schedule.

### *SAWE Commitment to Excellence*

The SAWE is committed to excellence in its technical documentations. This includes any papers and presentations to be presented at SAWE Conferences. Therefore, the SAWE uses a Peer Review Process to ensure that all information associated with the SAWE has undergone a peer review process for technical correctness. It should be noted that authors who have their own organizations perform internal peer review should find that the SAWE process does not impede the schedule for presentations and publications. The SAWE commits to providing feedback with regards to the Peer Review to the author within seven (7) days of any submission. However, it is always possible that a difficulty may be found which will delay acceptance of a paper or presentation.

### *SAWE References*

You can use SAWE references as a starting point for your paper. For example, lead off the introduction with a simple survey of the topic of the paper in SAWE references (i.e. SAWE technical papers, textbooks, handbook, and recommended practice) that address the topic defined in your abstract. If you can't find a SAWE reference on your topic, then your introduction can or should say that the paper covers a new methodology or technology. You are encouraged to write a paper that expands on or updates a SAWE Reference, describes a new tool, new or different management concept, project experience, specific vehicle or vehicle. The use of SAWE references as a starting point for a paper is not intended to limit in any way your contribution, but to build on and expand on the body of knowledge in SAWE's publications.

### *Give Serious Thought to Selection of the Paper Title*

A short and snappy title is easier to read and remember than a long and elegant one, but don't make it "cute". The title should suggest the main topic and conclusion or point of the paper. Orient your title toward action if possible and be certain it is appropriate to the subject. People who are looking for papers on a particular subject as part of background research or are deciding which presentations to attend at the conference, will be primarily determined by the paper title.

### ***Make Full Use of the Abstract and/or Summary***

The abstract or summary should be informative. Make the subject inviting, so that the reader will want to know more and read the rest of your paper. It is often the deciding factor for others to read your paper. It should be complete and concise. It should include the objective, approach, significant aspects or results, recommendations, limitations, and potential applications of your subject matter. This will become searchable content in the SAWE papers database. About 250 words would be the minimum length, but never write an abstract or summary longer than one page. Also do not include figures or graphics in the abstract.

### ***Make the Paper Readable***

Use plain English. Stay away from acronyms when possible. An alphabet soup of technical abbreviations, program and organizational initials will restrict the understanding of your work to a smaller audience. See the Flesch Reading Ease Test in Appendix A for more information. All acronyms or abbreviations should be compiled in a List of Acronyms following the Table of Contents at the beginning of the paper.

Remember that length is not a measure of merit. Cover the subject in sufficient detail to make your points or conclusions, but don't drag the topic. Readability and concise page usage will help both your reader as well as the technical committee who will score your paper.

Give some thought to the efficient construction of your paper so as to avoid redundancy or cross-references. A good and commonly used structure is a three-part document. This structure starts with the thesis or premise statement, has a mid section to establish the argument, findings or credibility of the statement, and finishes with conclusions and recommendations.

One good way to start writing a paper is from the back. Write the conclusion first and then develop the structural outline leading to that conclusion. If proper thought is given to developing the outline, the rest is easy.

### ***Use Illustrations Effectively***

Graphics, pictures and illustrations can be used for several purposes: to "save a thousand words" (or more), to dramatize a point, to reinforce written words in the reader's mind, to entertain, and to provide visual relief to the reader.

Any illustrations should supplement the written word, not repeat the thought. Discussion of an illustration should tell what it is and deal with the meaning of its contents. If too many words are dedicated to explaining how the illustration was developed, or why or how it works, then perhaps you should find a different way to make your point. Tables, graphs, charts and plans are not inherently good or helpful; they must be appropriate to the message and integrated with the text.

When an illustration is used, pay attention to the graphic quality as it will appear in your paper. Tiny text or blurred lines at important intersections can only detract from the real message you are sending and cast doubt on its credibility. The best thing to do with a poor quality illustration is to omit it.

If necessary, a graphic can be included on an oversized foldout page. Using such an approach will allow you to include the graphic with sufficient legibility to be read and understood, and it will not interrupt the flow of the text in the paper. For the electronic paper, a different page size/orientation can be inserted as a new section.

Visual aids to be used in the actual presentation of the paper are addressed under "Visual Aid Presentation" on page 12.

## PREPARING FOR THE CONFERENCE

### *Author Biography*

Please send your biography to the Vice President – Technical Director for introduction purposes by the deadline identified in the Calendar of events on page one of this document. If your paper includes a biography, this will fulfill the requirement.

### *Registration*

Authors **must** register for the Conference, which involves a registration fee (authors receive one free day for the day that they present their paper), please contact the VPTD for instruction on how to receive your free day. All conference badges are processed through our registration system, and badges are required to access all meetings and conference venues. If you are not presently a member of the Society, you are encouraged to join inasmuch as the cost of dues plus member registration is approximately equal to the non-member registration fee.

### *Authors' Photographs*

As attendees may not know presenters by sight, please send the Technical Director a recent photograph to be included in conference promotions and post-conference proceedings. It is important that **all** session authors and presenters send a good photograph prior to the conference.

**All authors, presenters, and co-chairs must comply with this request.**

### *Presentation*

You should realize that your appearance and grooming will set the initial tone of your presentation, even before you begin to talk. You should therefore avoid clothing that distracts audience attention from the subject at hand. Even if your audience is dressed casually, taking the time to dress in formal business wear will show respect for your audience.

You will be introduced by one of the Track Co-chairmen and will be given the floor at the end of the introduction. Each presentation is expected to last about **25-30 minutes**, including time for questions and answers. Longer presentations must be arranged through one of your Co-chairmen to be coordinated with the overall schedule for the day.

Any presentation, whether technical in nature or not, should focus on the same primary information. Note that the first two points can and will be part of your biography, but a personal recap of any pertinent points will be useful in acquainting yourself with the audience.

- Who am I?
  - Help the audience get to know you personally, so they will more readily listen to you.
- What do I do?
  - This helps explain your expertise to address the subject matter.
  - Instead of just being an engineer with XYZ Corporation, it will be more helpful to note, for example, you're an engineer with a major aircraft manufacturer with 22 years of experience in aircraft design and weight control.
  - Relevant previous or current programs you have worked or are working can also help.
- What am I going to talk about?
  - Prime the audience for presenting your main subject matter.



- Follows the rule of thumb for constructing either a paper or presentation: tell the audience what you're going to tell them (introduction), tell it to them (presentation), and then tell them what you told them (review or summary).
- Why should you care?
  - What is it that you are going to do for the audience?
  - What background or unique information do you have that will make the presentation worth the audience's time?

In any presentation, remember that you are the “star”. The audience came to hear you, not read charts. Presentation charts should not contain so much text that they essentially reproduce the paper, or become a stand-alone discussion that anyone could read and understand without your accompanying talk. Instead, charts should present minimal talking points that your verbal presentation will expand on. The actual paper will remain as the permanent written record of your work.

Even if you are not used to or uncomfortable with public speaking, try to present an “open” posture and demeanor when addressing your audience. Don't put your hands in your pockets or cross your arms over your chest. Don't stand behind anything, whether a podium or even a table that holds the laptop/projector. You can keep your notes at a podium or table, and return there to refer to them, but otherwise be out and available to the audience. One of the track co-chairs can run the laptop, so you don't have to monitor it. Don't stand off to the side as if you are unimportant. As long as you are not blocking the screen or in the beam of the projector, stand in a prominent place where you can be seen and heard. Use hand gestures and body language to accentuate important points. Be relaxed and natural, rather than projecting a stiff – some might say boring – “official” presentation manner. While you should not tell jokes – and ignore the oft-repeated “rule” to open with one – natural humor can help relax your audience and keep them engaged in your presentation.

As a general rule, a projected chart, other than the title chart, requires about two minutes of discussion. On this basis, you should present between 10 and 15 charts. Reading the chart text aloud is tedious, as the audience can do that for themselves. It is much more interesting to the audience to use the presented bullets to support a discussion of the highlights and more interesting aspects of the paper. The listener will likely have the paper in hand as you discuss it and/or can read it at another time. Also, try to become familiar with your presentation so you can spend more time looking at the audience, rather than at the projection screen to reference your charts. Having printed notes to refer to for each chart may help.

Presentations of papers will likely involve questions. Either the presenter or co-chairmen may initiate the question period. Question periods should last three to five minutes. The co-chairmen will limit the length of the question period to accommodate the track schedule.

### ***Visual Aid Presentation***

The purpose of a visual aid is to help the audience understand you as a speaker. Visual aids can be used to increase the speed of perception because two senses (vision and hearing) are used as receptors instead of just one. People can simultaneously absorb a visual message that is different from one they hear. In the limited time frame of a technical presentation, this ability in an audience can be of great help to the speaker as well. Given that your audience has this ability, there are some rules that you should follow:

- a. Use the verbal message to enrich each visual aid with details or subtleties that may otherwise take the viewer some time to realize. This heightens both audio and visual interest. *Don't* read visual aids – the audience can do that.
- b. Pick visual aids carefully.

1. Graphics from a paper may not be suitable for visual aids in a presentation due to the size of print, weight of line, or complexity of the figure. Making slides or viewgraphs from the printed page is very easy but must be done with consideration of both the message and the viewing audience. An audience should not be subjected to confusing, unreadable or unrelated visual aids.
  2. Your speech should lead the visual aids. If the speaker continually checks on the visual aid before talking, it conveys the impression to the audience that they are attending a slide show instead of a dissertation. Text should not be used to outline your talk.
- c. Think of visual aids as posters. A simple poster is easily seen and quickly read by the entire audience.
- d. Use color where it helps, but color is definitely not a trade-off for simplicity.

### ***Evaluation Copies***

Send one electronic copy of your technical paper to the Vice President – Technical Director to be judged for the Best Paper Award. Please remember that paper judging is a pre-planned operation. Therefore, **you must meet the deadline** identified in the Calendar of Events on page one of this document. Papers received after that date will still be accepted for presentation and distribution, but will not be eligible for the award. Also, papers are required to be compiled for posting to the SAWE website, which will contain a copy of all papers presented at the conference. The time it takes to compile and post the papers sets the paper submittal deadline.

The easiest way to submit an electronic paper copy is by e-mail. If the size of the paper (5 Mb or more) precludes this, the paper may be supplied on a CD, thumbdrive, or other commonly used electronic media. The SAWE also has an upload capability for submissions at <https://www.sawe.org/technical/papers/submittal>. Please ship any media to the address shown on page 1. All submitted papers **must be received** by the Vice President – Technical Director by **15 April 2024** to be considered for the Best Paper Award.

Please supply the paper in a PDF format (such as from Adobe Acrobat<sup>®</sup>) and a form compatible with the Microsoft Word<sup>®</sup> word processor. We retain Word copies of all papers for future publication purposes in our Society journal. The Vice President – Technical Director will translate your paper into a PDF file (if you are unable) prior to releasing it to be compiled for the conference. If supplied via PDF, the MS Word version may be supplied later, but must be supplied prior to the conference. However, at least one file type (PDF or Word) must be supplied to the VPTD and/or Track Chairman by the above-mentioned deadline date to be eligible for best paper judging.

All papers are subject to SAWE peer review, regardless of meeting the paper judging deadline. Therefore, papers will not be accepted if initially submitted in the two weeks before the conference to allow sufficient time for peer review and any corrections to be incorporated.

All the dates mentioned in this document are for industry papers, Professional papers have a different schedule outlined on the **Call for Papers** announcement. If you have any questions as to which schedule applies to you, please contact the VPTD or your Track Chairman to make sure you meet the required dates and that your paper is eligible for best paper judging.

## APPENDIX A - GUIDANCE FOR CLEAR WRITING

The following section is presented as a guide to assist the author who may be new to technical writing. It is intended as reference only, and is not intended to have the author doing copious counting and analyzing of words.

### *To Make your Paper Easier to Read*

1. Look at your sentences; measure them against a 17-word standard. If longer, look for the joints in their construction and break them into smaller pieces until they are of the right average length.

"Since the Federal and industrial scientific manpower shortage must not be alleviated at the expense of the University teaching staffs whose task it is to turn out fresh talent, the laboratories must themselves place still greater emphasis upon the scientific aspects of their personnel development programs, and must do so in cooperation with our academic institutions."

56 words, 107 syllables

"The Federal and industrial scientific manpower shortage must not be alleviated at the expense of the University teaching staffs. Their task is to turn out fresh talent. So the laboratories must themselves place still greater emphasis upon the scientific aspects of their personnel development programs. They must do so in cooperation with our academic institutions."

55 words, 13.75 average, 107 syllables

2. Translate complex words into simple, short root words.

"The shortage of scientists in government and industry must not be made up at the expense of University teaching staffs. Their task is to train new talent. The laboratories must themselves place still more stress on the scientific side of their training programs. In doing so they must work with our universities."

52 words, 82 syllables

3. Avoid passive verbs; make somebody do something!

"We in government and industry must not make up for our shortage of scientists by raiding University staffs. They train our new talent. In our laboratories we must push forward the scientific side of our training programs. We must work with our universities."

44 words, 63 syllables

4. Don't try to save a sentence by sticking one comment into another. Two sentences are easier to understand than one long one packed with extra stuffing.

". . . at the expense of University teaching staffs whose task it is to turn out fresh talent, the laboratories must . . ."

***Cut down on "empty" words.***

These are prepositions, conjunctions, adverbs, etc. In general, one "empty" word is better than two or three; a short one is better than a long one. If you can get rid of the "empty" word altogether, so much the better.

To help keep your writing succinct, try to avoid using such phrases as:

along the lines of.....	instead of.....	like
as to.....	" .....	about
for the purpose of.....	" .....	for
for the reason that.....	" .....	since
from the point of view of.....	" .....	for
inasmuch as.....	" .....	since
in favor of.....	" .....	for, to
in order to.....	" .....	to
in accordance with.....	" .....	by, under
in the case of.....	" .....	if
in the event that.....	" .....	if
in the nature of.....	" .....	like
in the neighborhood of.....	" .....	about
on the basis of.....	" .....	by
on the grounds that.....	" .....	since, because
prior to.....	" .....	before
with a view to.....	" .....	to
with reference to.....	" .....	about
with regard to.....	" .....	about
with the result that.....	" .....	so that
accordingly.....	" .....	so
consequently.....	" .....	so
for this reason.....	" .....	so
furthermore.....	" .....	then
hence.....	" .....	so
likewise.....	" .....	and
more specifically.....	" .....	for instance

***Punctuation***

Renew your acquaintance with some unfamiliar punctuation marks – hyphens, colons, semi-colons, dashes, question marks. This can help avoid awkward wording or paragraph structures which may reduce your paper's score.

## **APPENDIX B - PAPER AWARDS**

### ***Best Paper Award***

The L. R. "Mike" Hackney Best Paper Award is given by the Society each year to the author of the best technical paper presented at the Annual International Conference. The Best Paper Award winner is formally announced at the Awards Banquet at the end of the conference. The author or authors receive an engraved plaque and the paper is published in the Society's Weight Engineering Journal

### ***Special Merit Award***

While only one paper may win the Best Paper Award as being the most useful application of new ideas to the entire Mass Properties Engineering profession, the Technical Committee also reserves the right to present special awards to papers of outstanding merit that may have significant application within a more limited segment of engineering or field of research. Special Merit winners will receive a plaque denoting their accomplishment.

### ***Honorable Mention***

The Technical Committee may wish to recognize an author for a worthy effort either in preparing a paper that does not win an award, for an especially well-done presentation, or their involvement with or enthusiasm for that year's conference. Such Honorable Mentions will be announced at the Awards Banquet and listed in the conference edition of the Weight Engineering Journal. They do not include a plaque or other physical award.

### *Awards Process - Judging, Factor Scoring and Schedule*

Papers will be judged for utility, clarity, and originality. The following factors will be used as a guide by the Technical Committee in the selection of the best technical paper: Each factor may be worth up to the indicated point value, allowing for a maximum possible score of 100 points.

- a. Technical Content
  1. Validity of approach and reasoning. (25 points)
  2. Consideration of all major factors. (25 points)
- b. Relevance and Significance
  1. Immediate usefulness to engineers in the mass properties field. (5 points)
  2. Value as a reference for future applications. (10 points)
  3. Relative significance or degree of impact to the profession. (10 points)
  4. Value to engineers outside the mass properties field. (5 points)
- c. Clarity and Logical Development
  1. Information presented in a logical, readily understandable manner. (5 points)
  2. Paper meets reasonable standards of organization, grammar, and neatness. (5 points)
- d. Originality
  1. Freshness of approach. (5 points)
  2. New concept or application. (5 points)

**Awards** for technical papers **are based on** the judges' assessments of **the written word exclusively**. Significant deviations from these "Instructions to Authors" may be sufficient cause to exclude a paper from consideration for the best paper.

To be considered for this award, your **abstract** should be in the Vice President – Technical Director's hands by **15 December 2022** so that your paper may be assigned to a technical track and listed in the conference announcement. An **electronic** copy of the **completed paper** must be in the Vice President - Technical Director's hands no later than **8 April 2023** to allow time for evaluation for the best paper award.

Please contact the Vice President – Technical Director if you are not able to meet these deadlines.