# Society of Allied Weight Engineers, Incorporated

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

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

(Revised July 17, 2025)

**www.sawe.org**

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## 1. INTRODUCTION

These instructions provide information you need to prepare a technical paper and present it at a Society of Allied Weight Engineers 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. The instructions are organized in eight parts:

1. Introduction
2. Timetable for Authors
3. Requirements for SAWE Technical Papers
4. Things to Consider while Writing a Technical Paper
5. SAWE Peer Review Criteria
6. Preparing for the Conference
7. Paper Awards and Judging Criteria
8. Guidance for Clear Writing (Appendix A)

All SAWE Technical products, including submitted papers, must pass through the SAWE Peer Review Process to be accepted by SAWE. This process is described in Section 5.

For additional information on the Annual International Conference go to the SAWE website at www.sawe.org or contact the SAWE Vice President Technical Director at technical@sawe.org .

Good luck with your paper!

## 2. TIMETABLE FOR SAWE AUTHORS

***Table 1 – Timetable for SAWE Authors***

| Date | Product/Action | Description |
|---|---|---|
| **Year Preceding the Conference** | | |
| July 15 | Call for Papers | SAWE issues the Call for Papers for the international conference. |
| July – December | Notify VPTD of Intent | Notify the Vice President Technical Director (VPTD) that you intend to write a paper for the conference. Provide your paper title and a preliminary abstract through the SAWE website (SAWE Paper Submittal). |
| **Year of the Conference** | | |
| January 15 | **Abstract Deadline** | Submit final abstracts through the SAWE website (SAWE Paper Submittal) by this date to ensure inclusion in the Conference Announcement. (Abstracts may still be submitted after this date but are not guaranteed to be in the announcement.) |
| | Paper Numbers | The VPTD will begin assigning authors their SAWE Paper Number and Group (see Figure 1). |
| February 1 | Conference Announcement | Conference Announcement available on the SAWE website. |
| | Registration Open | Complete the registration and hotel booking process through the SAWE website as soon as possible. All authors MUST register for the conference. |
| March 15 | **Deadline for Papers** | Papers in Microsoft Word® and PDF formats must be submitted through the SAWE website (SAWE Paper Submittal) by this date to be to be eligible for awards. Make sure to include a short biography in the paper for introducing you at the conference. |
| May 1 | Last Chance for Papers | Papers must be submitted by this date to be included in the conference. (Not eligible for awards.) |
| | **Presentations Due** | Presentation files in Microsoft PowerPoint® format must be submitted through the SAWE website (SAWE Paper Submittal) by this date to facilitate preparation of conference proceedings. Contact the VPTD for files larger than 100 Mb. |
| | Conference Program | Conference Program available on the SAWE website. |
| TBA in Early May | Presenter Pre-brief | A virtual meeting will be held for Presenters and Session Chairs prior to the Conference to explain the planned proceedings and answer questions. |
| At May Conference | Day-of Pictures | Group photographs will be taken at the conference just prior to the scheduled session/track for all Session Chairs 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 at tecnical@sawe.org.

**NOTES:**

- Deadline dates above are "no-later-than" dates. Papers and materials received **BEFORE** the deadlines are much appreciated.
- Dates may vary at the discretion of the VPTD. See the conference webpage at www.sawe.org for the latest information.

## 3. REQUIREMENTS FOR SAWE TECHNICAL PAPERS

### *3.1. Content Release*

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 submitted to SAWE ***must not*** include any information that is controlled or restricted by **International Traffic in Arms Regulations (ITAR)** or **Export Administration Regulations (EAR)**. A disclaimer on the cover page (see Figure 1) that the paper does NOT contain such information is required. It is the responsibility of the author, ***not*** SAWE, to control the information presented in the paper and its associated conference presentation including obtaining any required employer approvals.

For SAWE to accept and publish your paper, you must submit a signed release form (see Section 3.5) which may be downloaded at SAWE Call for Papers. Authors whose work is solely their own and who are not writing as an employee of any public company, government agency, or institute of higher education, should state this on their release form by checking the appropriate box. All other authors must check the box that indicates they have received permission from their employer to release the information in the paper. Also, using the form, you may either assign the copyright to SAWE, or you can retain the copyright and grant SAWE a License to Publish.

### *3.2. Page Formatting and Layout*

Technical papers represent 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. A sample paper may be downloaded at SAWE Call for Papers.

Your paper should be sized for standard 8½ x 11-inch (216 x 279 mm) paper, to ensure it can be printed by all members as desired. If you must use a nonstandard size, ensure that all printed material lies within an 8½ x 11-inch (216 x 279 mm) envelope and is legible.

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 cover page does not need to be numbered.

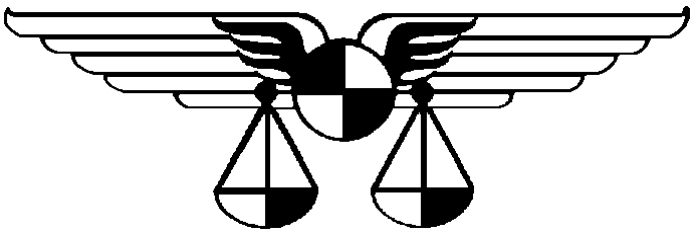
You may present charts, graphs, and pictures in the form most convenient for you. Observe consistent figure and table numbers and clear titles. Since most readers will have access to color copiers or printers, the use of color in your paper is acceptable and encouraged.

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 full-page width to assist with understanding text, labels, etc.

### *3.3. Units of Measure*

All technical papers should be prepared using the Imperial System of Units (pound, inch, …) or the International System of Units (SI) / Metric System (kg, meter, …).

SAWE Paper No. 1234
Group: AAABB



MASS PROPERTIES REPORTING
John Doe, Senior Engineer
The Smith Corporation

For Presentation at the
**85th SAWE International Conference**
**on Mass Properties Engineering**
May 17-22, 2026

Valencia, California



***Figure 1. Sample Cover Page***

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

### *3.4. General Outline of the Paper*

The paper should follow the typical outline shown below:

- Cover Page based on Figure 1, with your paper title, authors names, conference location & date.
- Foreword Pages i, ii, iii, …
    - 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*)
- Main Body, Pages 1, 2, 3, …
    - Abstract
    - Introduction
    - Discussion (i.e., problem/solution, issue/ options, 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)

More details follow below.

#### 3.4.1. Cover Page

Your cover page must conform to the example provided in Figure 1. It includes the name of the Society name and logo; the assigned paper number, group, and paper title; the author's name, position, and company or organization; the conference number, date, and city; the Society address, copyright marking, and ITAR and EAR disclaimer. The paper number and group will be assigned by the VPTD as noted in the Timetable on page one. You may suggest an applicable group from Table 2 that best describes your subject matter when you submit your abstract.

#### 3.4.2. Table of Contents

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

#### 3.4.3. Lists of acronyms or abbreviations, terms, symbols, etc.

To make your paper readable, please include a list of definitions for the above items in a table format before the main body of the paper. Include items which are unique to the paper or industry. If the table is longer than a page, it may be added as the last appendix of the paper, with a note directing people to it.

#### 3.4.4. List of Figures, Tables, Equations

When the paper contains more than a few figures, tables, or equations, you should add a list for each following the table of contents. 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).

#### 3.4.5. Abstract

Following the forward pages above, the main body of the paper should begin as Page 1, with your abstract as an introductory summary of the subject.

### 3.4.1. Introduction

In this section, provide some background regarding the purpose of your paper and the topic you address.

### 3.4.2. Discussion

This is where the meat of the paper lives. It typically includes a discussion of your approach, supporting analysis, results, etc. 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. To avoid interrupting a train of thought that you may be building in the main body of the paper, use references to appendices as needed.

***Table 2 - SAWE Publications and Technical Papers Groups***

| Group | Functional Description | Inclusions | Exclusions |
|---|---|---|---|
| **General MPE** | General Mass Properties Methods,<br>Functional RPs,<br>Cross Industry RPs | Description, development history<br>Shared best practices,<br>Non-Industry-specific methods,<br>Mass Properties Calculation and Verification | |
| **Other Engineering** | New Technology,<br>Design History | Sizing or design of vehicles, jigs, systems, etc. not covered elsewhere | |
| **Academic** | Student Papers,<br>Graduate Thesis,<br>Research Summaries,<br>Conference Papers,<br>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. | |
| **Aircraft** | Commercial<br>Military<br>General Aviation<br>UAV<br>Other Aircraft | Passenger, freight, cargo<br>Combat, surveillance, cargo, rotorcraft, VTOL<br>General aviation, corporate, rotorcraft<br>Drones, taxi, inspection, eVTOL, etc.<br>Balloon, Airships, Hybrid, Parasail, Soaring | |
| **Ground Vehicles** | 2 Wheel<br>4 Wheel<br>Tracked<br>Construction<br>Rail<br>Military | Motorcycles, mopeds, bicycles<br>Cars, truck (light, heavy), sport, etc.<br>Front end loader, BobCat, snowmobile<br>Tractors, pavers, dump truck, crane, etc.<br>Cargo, passenger, light rail, High Speed<br>Tanks, amphibious, guns, rocket launchers, military tracked, etc. | |
| **Marine** | Naval<br>Commercial<br>Working<br>Recreational | Combatant, supply, special warfare, coast guard<br>Cruise ships, container, tanker, gas, float on/off, Roll On/Off<br>Dredging, tug, barge, crane, fishing, ice breaker<br>Sail, speed, submarine, personal watercraft, etc. | Offshore Vehicles |
| **Missiles and Space** | Missiles<br>Earth Orbit Spacecraft<br>Sub-orbital Spacecraft<br>Launch Vehicles<br>Interplanetary Spacecraft | Unmanned, small, air-launch<br>Science, Weather, Manned<br>Scientific, manned, atmospheric research<br>Boosters, sea-- launched, air launch, reusable<br>Beyond Earth Orbit, Rovers, Landers, return vehicles | |
| **Offshore** | Exploration<br>Production<br>Wind<br>Aquaculture<br>Support | Seismic, oceanography, oil drilling, fisheries<br>Oil and Gas, floating and fixed production units<br>Floating and fixed wind generators<br>Fish, harvesting kelp, mollusks, etc.<br>Offshore support vessels, diving, construction, etc. | |
| **SAWE, Inc.** | Philosophy<br>Evolution | Administration, history, justifications, surveys, etc.<br>Procedure updates, RP procedures | Business Info<br>Ops Manual |

### 3.4.3. Summary

Add your conclusions, recommendations, and plans for future work on your topic.

### 3.4.4. List of References or Bibliography List

As seen in Figure 2, the general format for a reference citation is:

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

An author's name should be cited in the same format, 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] in Figure 2. If there are 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 using the same citation style 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. The location of the list of references or bibliography list should be shown in the table of contents, if it is used.


[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 "Bibliography List"***

### 3.4.5. Biography

A short biography should be included at the end of your paper to provide the reader with an understanding of your background. It will also aid your Session Chair in introducing you prior to 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.

### 3.4.6. Appendices

Use appendices for case studies, lengthy computer output or flow charts, photo sequences with descriptions, or other backup information.

### *3.5. 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. For this reason, a release form ***must*** accompany every paper. This will not give SAWE the right to alter or change any paper but is necessary to allow SAWE to sell or distribute the paper under the Society's name, with full credit to the author and their organization. This form approves the release of the paper by the author, 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 SAWE license to publish it as part of SAWE's 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 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 SAWE Call for Papers. Contact the VPTD or Executive Director of the Society for questions or assistance with using this form.

Instructions:

- All authors must complete Parts 1 and 2 of the form by entering their contact information, checking the appropriate box, and signing as indicated.
- Authors who agree to transfer copyright for the document to SAWE should complete Part 3, Option 1, by signing and including their contact information.
- Authors who wish to retain their copyright should complete Part 3, Option 2, by signing and including their organization's name.

*Society of Allied Weight Engineers, Inc.*
*5734 E. Lucia Walk*
*Long Beach, CA 90803*

# SAWE PAPER RELEASE/COPYRIGHT ASSIGNMENT FORM

**Paper Title:** _____

**Paper #:** _____ **Meeting:** _____

**Part 1: PRIMARY AUTHOR CONTACT INFORMATION**

**Name:** _____
**Address:** _____
_____
**Phone:** _____
**E-Mail:** _____

**PART 2: PAPER RELEASE CLEARANCE**

(Check the box for the applicable statement below)

☐ I attest that this work is UNCLASSIFIED and is entirely the author's own effort, representing no other public company, entity or government agency. It reflects information freely available in the public domain, and the author approves its release.

or

☐ I attest that this work is UNCLASSIFIED and has been cleared and approved for public release by the appropriate company and/or government agencies.

**Signature of Author*:** _____ **Date**: _____

**PART 3: COPYRIGHT ASSIGNMENT**

**OPTION 1: TRANSFER COPYRIGHT TO SAWE**

In consideration of acceptance of the Paper for publication, I hereby assign and transfer to the Society of Allied Weight Engineers, Inc. (SAWE) all rights, title, and interest in the Paper including any and all copyrights therein.

The Society of Allied Weights Engineers, Inc. hereby grants to the Author and/or their employer in the case of a work made for hire, a nonexclusive, royalty-free license to use, reproduce, and distribute the Paper, including the right to sublicense such rights, provided that each copy will include the SAWE copyright notice on the cover of the published paper.

***Note: The above assignment of the copyright does not apply to officers or employees of the United States Government who prepared the Paper as part of their official duties. Use Option 2 instead.***

I certify that I have the authority to transfer these rights on behalf of myself and/or my employer.

**Signature of Author*:** _____ **Date**: _____

## OPTION 2: RETAIN COPYRIGHT / RELEASE TO PUBLISH

For situations in which the author or their organization wishes to retain the copyright in their name, SAWE requires a license to publish the work. The Assignment of Release to Publish below should be used for this purpose.

I hereby retain the copyright for this work, and license SAWE to publish and to use it for all current and future SAWE electronic uses, with due credit to me and to my organization.

**Signature of Author* or Other Copyright Owner:** _____

**Organization:** _____ **Date**: _____

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

**Please return this completed form to SAWE, Inc. at SAWE Call for Papers**
**or**
**email to technical@sawe.org**

## 4. 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.

### *4.1. 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.

### *4.2. Importance 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.

### *4.3. Technical Content*

It is helpful to remember that 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 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 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 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 SAWE on schedule.

### *4.4. 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.

### *4.5. 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” in Section 6.5.

### *4.6. SAWE Commitment to Excellence*

SAWE is committed to excellence in its technical documentations. This includes any papers and presentations to be presented at SAWE Conferences. Therefore, SAWE uses a Peer Review Process to ensure that all information associated with 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. 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.

### *4.7. 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 vehicles. 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.

## 5. SAWE PEER REVIEW CRITERIA

SAWE is committed to excellence in its technical documents. 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, SAWE has instituted a Peer Review Process to ensure that all information associated with SAWE has been reviewed for technical correctness. (Student papers and vendor generated presentations are specifically excluded.) Authors should plan on their submission being subject to peer review by a committee of mass properties experts within SAWE. To facilitate this process, it is important that authors adhere to the deadlines shown in the Table 1 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 Technical Committee evaluates 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. More information about the categories is shown below:

**Category 1 (Equation Problems)**

- Equations that don't equate. Do the equations actually result in the stated equivalences?
- Dimensionally flawed equations. Can the reviewer follow the logic of the equation, e.g. are there errors such as mixing mass and force, or inconsistent terms?
- Incorrect derivations. Are the equations correctly derived? Do sequential equations follow from one equation to the next?
- Typos in equations. Are there missing or incorrect symbols, signs, operators, or parameters?
- General mathematical errors. Are the arithmetic and algebra correct?

**Category 2 (Premise Problems)**

- Does the paper support the premise?
- 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 paper or product from going forward to publication.

## 6. PREPARING FOR THE CONFERENCE

### *6.1. Author Biography*

Please send your biography to the Vice President – Technical Director for introduction purposes by the deadline identified in Table 1. If your paper includes a biography, this will fulfill the requirement.

### *6.2. 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 since the cost of dues plus member registration is comparable to the non-member registration fee.

### *6.3. Photographs*

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

***All authors, presenters, and Session Chairs must comply with this request.***

### *6.4. 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 Session Chairs 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 the VPTD 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.

  - Follow the rule of thumb for constructing either a paper or presentation: tell the audience what you're going to tell them (introduction), tell 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. If possible, 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 Session 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 can read the paper 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 Session Chair may initiate the question period. Question periods should last three to five minutes. The Session Chair will limit the length of the question period to maintain the track schedule.

### *6.5. 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:

1) 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.

2) Pick visual aids carefully.

a) 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.
b) 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.

3) Think of visual aids as posters. A simple poster is easily seen and quickly read by the entire audience.
4) Use color where it helps, but color is not a substitute for simplicity.

### *6.6. Paper Submittal and Evaluation*

Upload an electronic copy of your technical paper to the SAWE website at SAWE Paper Submittal to be judged for the Best Paper Award. Please remember that **you must meet the deadline** identified in Table 1 for your paper to be judged. Papers received after that date will still be accepted for presentation and distribution but will not be eligible for the award.

Please supply the paper in a PDF format (such as from Adobe Acrobat©) and a form compatible with the Microsoft Word©. We retain Word copies of all papers for future publication purposes in our Society journal. The VPTD 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 after the last chance date in Table 1 to allow sufficient time for peer review and any corrections to be incorporated.

A copy of all papers and presentations at the conference will be compiled into a proceedings package for posting to the SAWE website after the conference.

## 7. PAPER AWARDS AND JUDGING CRITERIA

### *7.1. Professional Papers*

#### 7.1.1. 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.

#### 7.1.2. 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.

#### 7.1.3. 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.

### *7.2. Academic Student Papers*

#### 7.2.1. Student Paper Awards

Student papers are eligible for first, second, and third place cash awards. The value of these cash awards is determined annually by the Technical Committee and Academic Committee. In all other respects, student papers are judged according to the same criteria as the professional Best Paper.

SAWE membership for students is free, so all student authors presenting papers at SAWE technical conferences should join the Society at https://www.sawe.org/members/join-renew/. Student attendees will receive a certificate of achievement denoting their paper, complimentary copies of the Weight Engineers Handbook and the SAWE textbook of their choice (aircraft or marine), and complimentary tickets to the conference Welcome Reception, Standards and Practices Luncheon, and Awards Banquet. Other perquisites may be given at the discretion of the VPTD.

Student authors who submit a paper to SAWE but are unable to attend to present the paper will receive a certificate of achievement denoting their paper, and a complimentary copy of the Weight Engineers Handbook. They shall not receive other complimentary perquisites unless the VPTD deems them appropriate due to extenuating circumstances. Note that if a school or university is sending a multi-student team to the conference to present a paper, they may be asked to help support the cost of meals or other fees involved with the students' attendance.

### *7.3. Awards Process - Judging, Scoring, and Schedule*

Papers will be judged for utility, clarity, and originality. The following factors as shown in Table 3 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. 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 awards, your abstract and paper must be in the Vice President Technical Director's hands by the deadlines listed in Table 1**.

Please contact the Vice President Technical Director as soon as possible if you cannot meet these deadlines.

***Table 3 – Technical Paper Scoring Criteria***

| Criteria | Maximum Possible Score |
|---|---|
| **Technical Content** | |
| Validity of approach and reasoning. | 25 points |
| Consideration of all major factors. | 25 points |
| **Relevance and Significance** | |
| Immediate usefulness to engineers in the mass properties field. | 5 points |
| Value as a reference for future applications. | 10 points |
| Relative significance or degree of impact to the profession. | 10 points |
| Value to engineers outside the mass properties field. | 5 points |
| **Clarity and Logical Development** | |
| Information presented in a logical, readily understandable manner. | 5 points |
| Paper meets reasonable standards of organization, grammar, and neatness. | 5 points |
| **Originality** | |
| Freshness of approach. | 5 points |
| New concept or application. | 5 points |
| **Total** | **100 points** |

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## A. 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 force the author to do copious counting and analyzing of words.

### *A.1. Make your Paper Easier to Read*

Here are some tips for making 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 . . ."

### *A.2. 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 |

### *A.3. Check 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.