



Society of Allied Weight Engineers, Inc.

Aerospace • Marine • Offshore • Land • Allied Industries

Welcome to SAWE



What is Mass Properties Engineering?

- **Predict, Control, Verify:**
 - **Weight**
 - **Center of Gravity (CG)**
 - **Moments of Inertia (MOI)**
 - **Products of Inertia (POI)**
- **Entire product, entire life-cycle**
 - **Concept thru Customer Support**
 - **“Rivet to Ramp”**





Why is Mass Properties Control important?

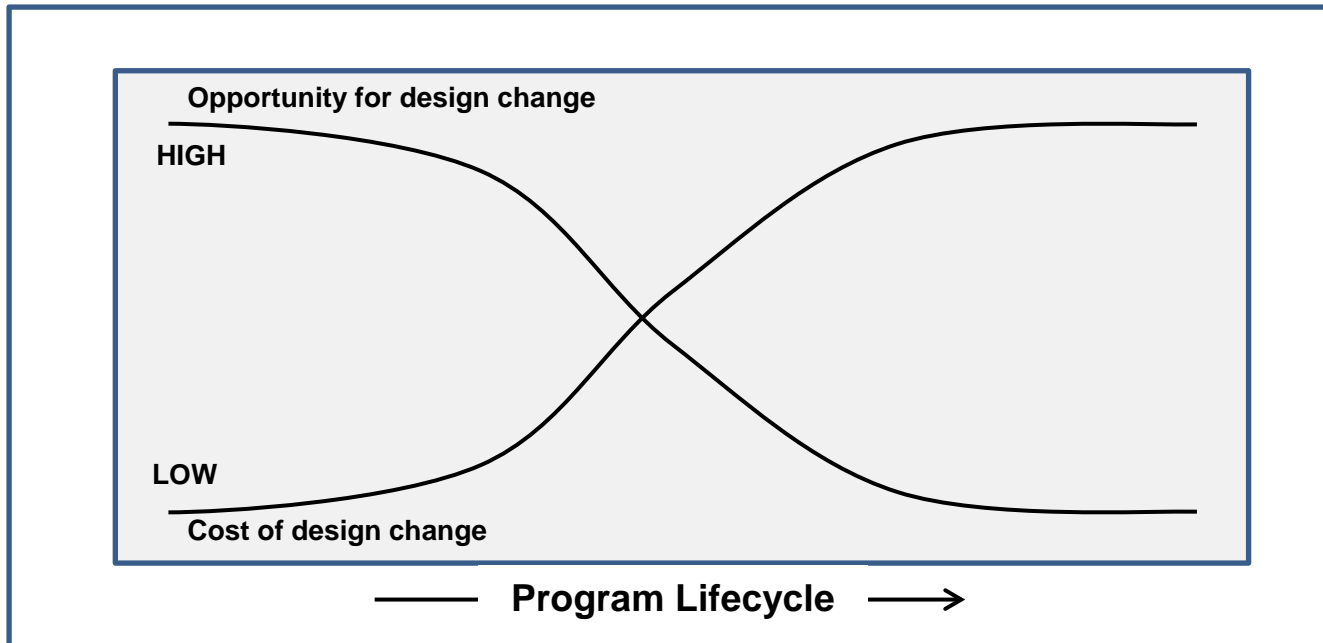
- Weight, Center of Gravity, Moments and Products of Inertia are **critical** for vehicle safety and performance





Why is Mass Properties Control important?

- **Cost of weight growth and balance issues increases dramatically as your programs progress**



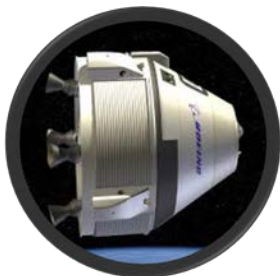


Who is SAWE?

- **We are a Non-Profit International Organization of Mass Properties Engineers founded in 1939**
- **Our Purpose:**
 - To promote the Mass Properties discipline
 - To provide a medium for exchanging recommended practices based on experience and innovation
 - To foster technical excellence and superior quality in mass properties prediction, control and validation
- **20 Chapters in the US, Canada, South America, UK and Europe**
- **12 Corporate Members and Partners**

Industries Served by SAWE

- **Initially - Society of Aeronautical Weight Engineers**
- **1973 - Renamed Society of Allied Weight Engineers to include:**
 - Aerospace – aircraft, missiles, space, electronics, ...
 - Marine – surface, cargo, submarines, ...
 - Offshore Platforms – oil and gas, launch/landing, ...
 - Land Vehicles – automotive, armored, construction, ...
 - Allied Industries – scales, equipment, software, ...





SAWE International Leadership Team

Position	Officer	Organization
President	Robert Hundl	Fluor Corporation
Executive VP	Jason Booth	The Boeing Company
Senior VP	Chris Wandell	Northrop Grumman Corporation
VP Publications	Melissa Gray	United States Air Force
VP Technical	Robert Zimmerman	Lockheed Martin - Retired
VP Training	Dan Rowley	Northrop Grumman Corporation
VP Vendor Relations	Clint Stephenson	The Boeing Company
VP Internet Operations	Greg Ray	The Boeing Company
VP Standards & Practices	Jorge Bes	Airbus
VP Academic Affairs	TBA	TBA
Executive Director	Bill Boze	HII - Retired



Why is SAWE important?

- **Mass Properties discipline often overlooked**
 - Not specifically in college curriculum even though it is integral to every product and system
 - Company Management mistakenly thinks CAD can do it all
 - Inadequate staffing/skills increases program risk
 - Aging workforce in this crucial discipline
 - 62% retiring over next 10 years*
- **SAWE provides:**
 - Proven processes and experience for mass properties control
 - Educational resources for ensuring a skilled workforce
 - International collaboration between industry and governments
 - Venue for sharing and discovering new methods and lessons learned

**The Health of Mass Properties Engineering - 2018 Industry Survey*



How do Individual Members Benefit?

- **Networking**

- Collaborate with peers at chapter meetings, virtual forums, training, and regional and international conferences
- Learn from experts and mentor the next generation
- Discover career opportunities
- Make lifelong friendships

Upcoming International Conferences

2024 Virtual

2025 Albuquerque, New Mexico



How do Individual Members benefit?

- **Publications**

- Members Only access to *the* premier source for Mass Properties literature
- Extensive Library of over 3500 Technical Papers*
- 3 issues of Weight Engineering Journal per year
- SAWE Blog
- Discounts for all SAWE publications and textbooks
- Free SAWE Handbook (digital) plus updates

* 10 free downloads/year



How do Individual Members benefit?

- **Training**
 - Variety of unique courses from analytical methods to measurement techniques taught by experts online, onsite, or at conferences
 - Certification courses in critical tasks such as Aircraft Weighing, Automated Weight and Balance Software, Ship Inclining, and others
 - Improves technical capabilities and skills



Classroom or online



Hands on



How do Individual Members benefit?

- **Scholarships***

- SAWE Scholarship - \$1000 (2 awarded/year typically)
 - Applicants must be high school seniors or graduates who plan to enroll or students who are already enrolled in a full-time undergraduate course of study at an accredited four- year college or university.
- Frank Fong Memorial Scholarship - \$1000 (1 awarded/year)
 - Same requirements as above, but applicant must be majoring in a scientific field (e.g. engineering, physics, mathematics, computer sciences, etc.)
- Annual Conference Scholarship - \$1000 (1 awarded/year)
- Chapter Scholarships
 - Amount determined by individual Chapter

*For student members and children or grandchildren of members active for at least 1 year





How do Individual Members benefit?

- **Recognition**

- Awards for advancing the Mass Properties discipline
 - Best Student Paper Award
 - Ed Payne Young Engineer Award
 - L. R. “Mike” Hackney Best Paper Award
 - Special Merit Award
 - SAWE Fellow
 - SAWE Honorary Fellow
 - SAWE Richard Boynton Lifetime Achievement Award
- Certified Mass Properties Engineer





How do Individual Members benefit?

- **Leadership Development**
 - SAWE helps you:
 - Innovate
 - Create
 - Solve problems
 - Make a difference locally and globally!
 - Numerous opportunities to get involved and lead
 - Local Chapter Positions
 - International Officer Positions
 - Committee Chairs





How do Company Members benefit?

- **Skilled Workforce**


- Mass Properties Engineers properly trained with access to the latest knowledge base
- Program risk reduced through proper application of proven processes
- Lessons learned passed on to younger generation starting at the college level





How do Company Members benefit?

- **Standards**
 - Gain access to proven recommended practices created through years of SAWE, industry and government collaboration
 - Help shape these standards


 INTERNATIONAL SOCIETY OF ALLIED WEIGHT ENGINEERS, INC. <i>Serving the Aerospace - Shipbuilding - Land Vehicle and Allied Industries</i> Executive Director P.O. Box 60024, Terminal Annex Los Angeles, CA 90060	RECOMMENDED PRACTICE NUMBER 7 Date Issued May 18, 2004
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**MASS PROPERTIES
MANAGEMENT AND CONTROL
FOR MILITARY AIRCRAFT**

Revision Letter D

Prepared by
Government - Industry Workshop
Society of Allied Weight Engineers, Inc.

All SAWE technical reports, including standards specified and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAWE standard or recommended practice, and no commitment to conduct in any particular way, by any technical report. In formulating and approving technical reports, the SAWE will not investigate or consider patents which may apply to the entire name. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents. Notwithstanding the above, if the recommended practice is incorporated into a contract, it shall be binding to the extent specified in the contract.

 SAWE RECOMMENDED PRACTICE


 INTERNATIONAL SOCIETY OF ALLIED WEIGHT ENGINEERS, INC. <i>Language • Volume • Culture • Land Vehicle • Allied Industries</i> Executive Secretary P.O. Box 60024, Terminal Annex Los Angeles, CA 90060	RECOMMENDED PRACTICE NUMBER 8/A-7 Date Issued July 1, 2015
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**Weight and Balance Data Reporting Forms
for Aircraft (Including Rotorcraft and
Air-Breathing Unmanned Aerial Vehicles)**

Revision B

Prepared by
Standards and Practices Committee
Society of Allied Weight Engineers

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 S.A.W.E. RECOMMENDED PRACTICE

 INTERNATIONAL SOCIETY OF ALLIED WEIGHT ENGINEERS, INC. <i>Serving the Aerospace - Shipbuilding - Land Vehicle and Allied Industries</i> Executive Director P.O. Box 60024, Terminal Annex Los Angeles, CA 90060	RECOMMENDED PRACTICE NUMBER 9 Date Issued 31 June 2000
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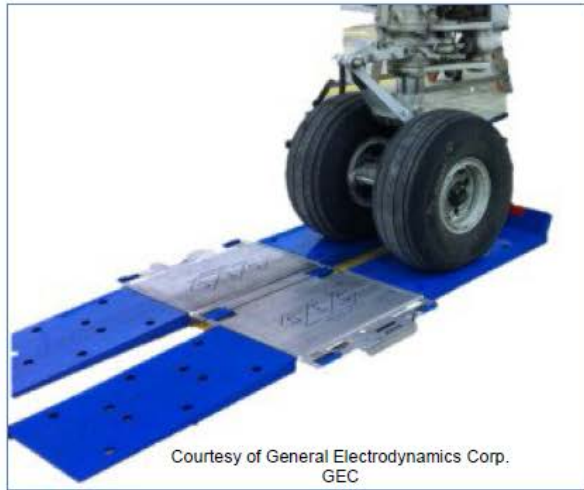
**WEIGHT AND BALANCE CONTROL
FOR
GUIDED MISSILES**

Prepared by
Government - Industry Workshop
Society of Allied Weight Engineers, Inc.

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How do Company Members benefit?

- **Technology Awareness**
 - Keep abreast of the latest equipment, software and services available
 - Share your innovations with potential customers / collaborators





How much does it cost?

Level	Cost
Company	
<ul style="list-style-type: none">• Gold Partner• Silver Partner• Member Level 2• Member Level 1	<p>\$15,000/year \$6,000/year \$1,500/year \$1,000/year</p>
Individual	
<ul style="list-style-type: none">• New Member• Member• Retired Member• Student Member• Lifetime	<p>\$40/1st year \$80/year \$40/year Free (pending verification) 15X Individual Membership</p>



What is included in Company Membership?

Benefit	Level 1	Level 2	Silver	Gold
Annual International Conference Proceedings	✓	✓	✓	✓
Presentation opportunity at International Conference	✓	✓	✓	✓
SAWE Weight Engineering Journal	✓	✓	✓	✓
Listing on SAWE Website	✓	✓	✓	✓
Open access to SAWE Technical Library (* up to 100 downloads/year, ** up to 200/year)	✓*	✓**	✓	✓
Open access to SAWE Standards and Practices	✓	✓	✓	✓
10% Discount on Annual Advertising Rates	✓	✓	✓	✓
Reduced rate for Onsite Group Training	5%	5%	10%	15%
Complimentary Individual Memberships		1	3	5
Seat on Board of Directors		✓	✓	✓
Voting privileges on Board of Directors			✓	✓
Standards and Practices Committee Memberships			1	2
One 3-day International Conference Exhibit Space			✓	✓
3-day International Conference Registrations			2	6
One 1-day Training Course Registration				✓
Job Postings for Open Mass Properties Positions on SAWE Website				✓
Color Ad in the International Conference Program			½-page	Full-page
Choice of ½-Page Color Ad in one edition of Weight Engineering Journal or 3-month Ad on Website			✓	
One full-page Color Ad in each edition of Weight Engineering Journal and full-year ad on Website				✓




Where can you learn more?

- <https://www.sawe.org>

Home - SAWE

sawe.org

 **Society of Allied Weight Engineers, Inc.**
Aerospace • Marine • Offshore • Land Vehicle • Allied Industries

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The Leading Authority on Mass Properties since 1939

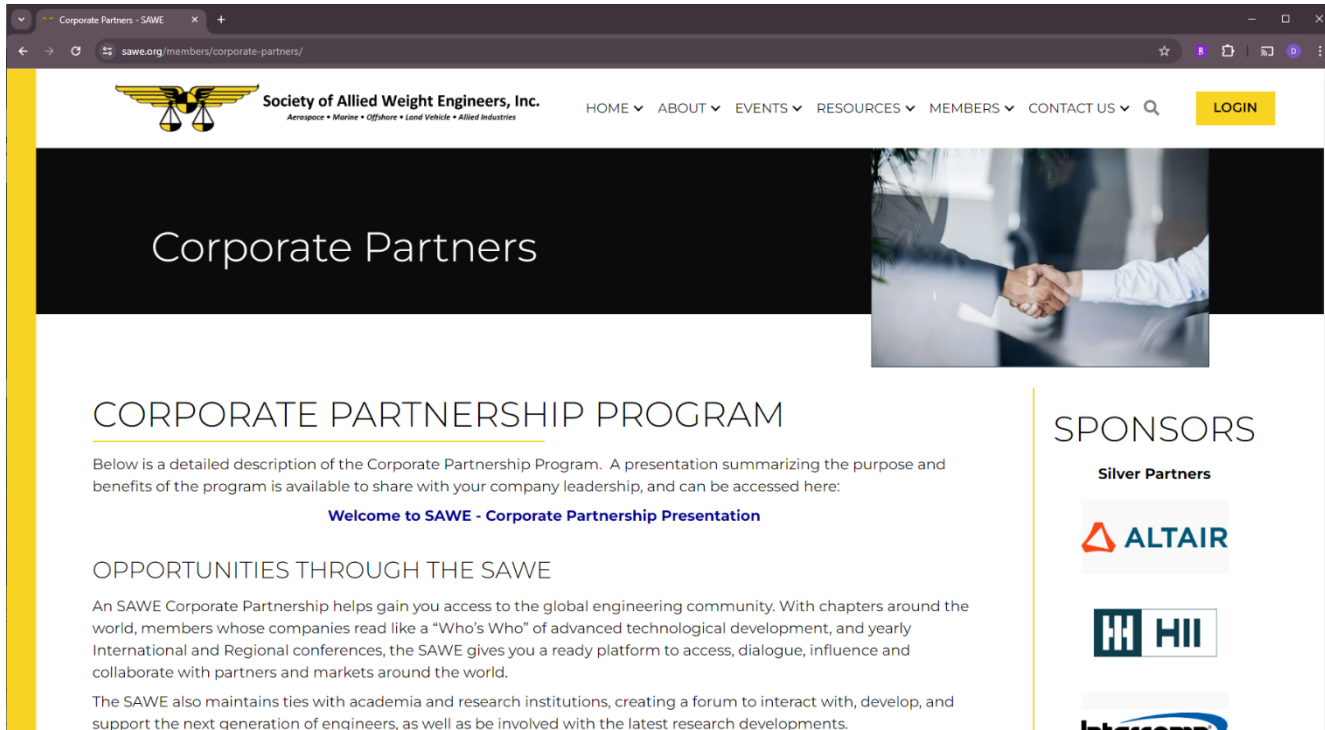
TRAINING CONFERENCE

May 14-16, 2024

Registration is now open for our in-person training conference in Dallas, TX.

How can you partner with us?

- <https://www.sawe.org/members/corporate-partners/>



Corporate Partners - SAWE

sawe.org/members/corporate-partners/

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LOGIN

Corporate Partners

CORPORATE PARTNERSHIP PROGRAM

Below is a detailed description of the Corporate Partnership Program. A presentation summarizing the purpose and benefits of the program is available to share with your company leadership, and can be accessed here:

[Welcome to SAWE - Corporate Partnership Presentation](#)

OPPORTUNITIES THROUGH THE SAWE

An SAWE Corporate Partnership helps gain you access to the global engineering community. With chapters around the world, members whose companies read like a "Who's Who" of advanced technological development, and yearly International and Regional conferences, the SAWE gives you a ready platform to access, dialogue, influence and collaborate with partners and markets around the world.

The SAWE also maintains ties with academia and research institutions, creating a forum to interact with, develop, and support the next generation of engineers, as well as be involved with the latest research developments.

SPONSORS

Silver Partners

ALTAIR

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Come and Join Us as a Corporate Partner!

- **Gain access to key Mass Properties experts and decision makers form around the globe**
- **Help us keep our critical discipline alive and well**
 - Encourage your employees to become members
 - Support them in writing technical papers
 - Send them to conferences and training
 - Sponsor our conferences, certification, and training programs
- **Your Company and SAWE share the same goals for excellence in Mass Properties Engineering**

Help Us Help YOU!

