

76th SAWE International Conference on Mass Properties Engineering 2017

Montreal, Canada
20 - 25 May 2017

ISBN: 978-1-5108-5076-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by Society of Allied Weight Engineers, Inc.
All rights reserved.

Printed by Curran Associates, Inc. (2018)

For permission requests, please contact Society of Allied Weight Engineers, Inc.
at the address below.

Society of Allied Weight Engineers, Inc.
Ronald L. Fox
Executive Director
5734 E Lucia Walk
Long Beach, CA 90803-4015
USA

Phone: (562) 596-2873
Fax: (562) 596-2874

ron.fox@sawe.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Technical Tracks



Werner Sellner
Sellner Aerostructures

Monday, May 22, 2017
9:30 a.m. – 12:00 p.m.



Robert Zimmerman
VP Technical Director

SYSTEMS DESIGN TECHNICAL TRACKS

SAISONS A

Time	Presentation
9:30 - 10:00	<i>3693 A Random Method for Picking Module Stowage Solutions for Barges - Robert Hundl - Fluor 1</i>
10:00 - 10:15	<i>Vendor Presentation</i>
10:15 - 10:45	<i>Technical Presentation - Lesson Learned of Statistical Mass Estimation of Fighter and Trainer Aircraft - Werner Sellner - Sellner Aerostructures N/A</i>
10:45 - 11:15	<i>Technical Presentation - Hybrid Aircraft, A Different Look at Transportation - Kevin Tharp - Lockheed Martin N/A</i>
11:15 - 11:30	<i>Vendor Presentation</i>
11:30 - 12:00	<i>3692 Aircraft Systems Physics-Based Weight Estimation Methods for Conceptual Design - Ali Tfaily - Bombardier Aerospace.. 16</i>



John Hargrave
Northrop Grumman

Monday, May 22, 2017
1:30 p.m. – 5:00 p.m.



Robert Zimmerman
VP Technical Director

PLENARY SESSION

SAISONS A

Time	Presentation
1:30 - 2:00	<i>3673 A Recommended Weight Margin for Wet Undersea Vehicles - William Boze - Huntington Ingalls Industries.....28</i>
2:00 - 2:30	<i>Two Vendor Presentations</i>
2:30 - 3:00	<i>3676 Weight Control: Idealistic vs Realism - R. Alan Bird - Fincantieri Marinette Marine36</i>
3:00 - 3:30	<i>Coffee Break</i>
3:30 - 4:00	<i>3683 Capability Assessment of a MPE Organization - Andreas Schuster - Meta MPE LLC49</i>
4:00 - 4:30	<i>3675 Weight Management During Engineering Development - 2016 SAWE Survey Results - Douglas Fisher - UTC Aerospace Systems58</i>
4:30 - 5:00	<i>Technical Presentation - The Mass Properties Discipline - Risk and Opportunity - William Boze - SAWE President Elect N/A</i>

Technical Tracks

Wednesday, May 24, 2017

8:00 a.m. – 9:30 a.m.

SAISONS A

TECHNICAL FORUM



Jeffrey Cerro
NASA Langley
Research Center

**Model Based and Collaborative Aspects
in Engineering and How Mass Properties
Engineers Integrate into this Environment**



Wednesday, May 24, 2017

10:00 a.m. – 12:00 p.m.

SAISONS A

ACADEMIC PAPERS



William Boze
Huntington Ingalls Industries



Dr. Donna Garren
SAWE Academic Chair

Time	Presentation
9:30 - 10:00	<i>Coffee Break</i>
10:00 - 10:30	<i>S3685 Design of an Internal Aerodynamic Load Cell for Static or Oscillating Airfoils - Kamal Benmiloud & Hachmi Fellouah - Université de Sherbrooke86</i>
10:30 - 11:00	<i>S3679 Design and Optimization of an Aluminum Structure Assembled Using Elastic Fastening - Clement Laverne, Alain Desrochers, & Ahmed Maslouhi - Université de Sherbrooke93</i>
11:00 - 11:30	<i>S3691 Methods to Evaluate the Mass Properties of a Scale Model Aircraft - Eetu Kohtanen & R. Benjamin Davis - University of Georgia120</i>
11:30 - 12:00	<i>S3680 Designing Mass-Optimized Parts Using Solidthinking Inspire With Application To The Hyperloop Deployable Wheel System - Graeme Klim - Ryerson University132</i>



Wednesday, May 24, 2017

1:30 p.m. – 5:15 p.m.

SAISONS A

REAL WORLD MASS PROPERTIES SESSION



Amanda Cutright
NASA Langley Research Center



Ricardo Roy
United Launch Alliance
Retired

Time	Presentation
1:30 - 2:00	3686 Statistical Mass Properties Predictions for a Production Program - Ricardo Roy - United Launch Alliance, Retired162
2:00 - 2:30	Two Vendor Presentations
2:30 - 3:00	3688 Uncertainty Analysis Applied to Two Historic Inclining Experiments - David Hansch - Huntington Ingalls Industries174
3:00 - 3:30	Coffee Break
3:30 - 4:00	Technical Presentation - High Performance Engineering Thermoplastics - Victor Hilyard - Ensinger N/A
4:00 - 4:15	Vendor Presentation
4:15 - 4:45	3690 Optimization of Environmental Control System for Corporate Jets - Ragaa Mitry - Gulfstream Aerospace221
4:45 - 5:15	Technical Presentation - Optimization-Driven Design for Lightweight Structures - Tony Norton, Executive VP, Americas Altair Product Design N/A



Wednesday, May 24, 2017

9:30 a.m. – 12:00 p.m.

SAISONS B

MARINE SYSTEMS SESSION



Stein BJORHOVDE
BAS Engineering



Robert Zimmerman
VP Technical Director

Time	Presentation
9:30 - 10:00	Coffee Break
10:00 - 10:30	3677 Considerations for Reviewing Ship and Submarine Weight Reports - David Tellet - Retired241
10:30 - 11:00	3678 Submarine Static Stability - David Tellet - Retired263
11:00 - 11:30	3674 A Weight Analysis of Civil War Ironclad CSS Virginia - Nicholas Marickovich - Newport News Shipbuilding, Huntington Ingalls Industries302
11:30 - 12:00	3687 An Initial Parametric Weight Compendium for Ships - David Hansch - Huntington Ingalls Industries388

Technical Tracks

Wednesday, May 24, 2017
1:30 p.m. – 5:30 p.m.



Stein Bjorhovde
BAS Engineering



Jeffrey Cerro
NASA Langley Research Center

OFFSHORE SESSION

SAISONS B

Time	Presentation
1:30 - 2:00	<i>3681 Simultaneous Use of Multiple Load Measuring Devices for Weighings in the Offshore Oil Industry - David Bennett - Worley Parsons438</i>
2:00 - 2:30	<i>Two Vendor Presentations</i>
2:30 - 3:00	<i>3682 Allowance vs. Contingency in the Offshore Oil Industry - David Bennett - Worley Parsons465</i>
3:00 - 3:30	<i>Coffee Break</i>
3:30 - 3:45	<i>Vendor Presentation</i>
3:45 - 4:15	<i>3684 Appurtenance Buoyancy - Mass Properties Management of Offshore Systems478 Andreas Schuster - Meta MPE LLC</i>
4:15 - 4:45	<i>Two Vendor Presentations</i>
4:45 - 5:15	<i>Technical Presentation - Weight Management of Large Offshore Oil Projects - David Bennett - Worley Parsons N/A</i>

Additional Paper

How (Do/Should) Mass Properties Engineers Integrate Into This Environment (?) 489
Jeffrey A. Cerro