

**Minutes**  
**Rigging Working Group**  
Saturday, 22 July 2017  
D/FW Marriott Solana  
Westlake, TX

R1 corrections:

- Joe Champelli was added to the task group at item 6.6.
- Corrected contact information for Ted Jones.

**Presiding co-chairs:**

Bill Sapsis; Sapsis Rigging, Inc.; P; U  
Christine L. Kaiser; Syracuse Scenery & Stage Lighting Co., Inc.; P; DR

**Recording secretaries:**

Karl G. Ruling and Erin Grabe; ESTA

**Members present:**

Jacob Abbott; PSAV Presentation Services; O; U  
Frank Allison; McLaren Engineering Group; M.G. McLaren, P.C.; A; G  
Keith Bohn; I; G  
William Bradburn; Aerial Arts, Inc.; P; U  
Bennett Brian; Reed Rigging Inc.; P; DR  
Dan Culhane; J.R. Clancy, Inc.; Wenger Corp.; A; CP  
Bruce Darden; InterAmerica Stage, Inc.; P; CP  
David Darland; PSAV Presentation Services; O; U  
Don Earl; Earl Girls, Inc.; P; DR  
Mike Garl; Mike Garl Consulting LLC; P; DE  
Dan Gibbs; Crew One Productions; P; U  
Sanford P. Gilzow; Shur-Rig LLC; P; G  
Jerry Gorrell; Theatre Safety Programs; P; G  
Pat Grenfell; Hoist Sales & Service; P; DR  
Rod Haney; I.A.T.S.E. Local 891; P; U  
Tim Hansen; Oasis Stage Werks; P; DR  
Herb Hart; Columbus McKinnon Corp.; A; MP  
Jeremy Hodgson; Cirque Du Soleil, Inc.; P; U  
Theresa Kelley; Full Throttle Films/ VER; P; DR  
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U  
Roger Lattin; I.A.T.S.E. Local 728; P; U  
Dan Lisowski; Dept. Of Theatre and Drama; University of Wisconsin - Madison; P; U  
Jacob E. Loretto; Musson Theatrical Inc.; P; DR  
Orestes Mihaly; Production Resource Group; P; DR  
Rick Montgomery; Motion Laboratories, Inc.; P; MP  
Reid Neslage; H & H Specialties Inc.; P; MP  
Jim Niesel; Theatre Projects Consultants, Inc.; P; DE  
Shawn Nolan; Production Resource Group; A; DR  
Miriam Paschetto; Geiger Engineers; P; G  
Demian Purdy; PSAV Presentation Services; A; U  
John Ringelman; Stage Rigging, Inc.; Freeman Companies; P; DR  
Tim Salamon; PSAV Presentation Services; O; DR  
Chris Schmidt; Stage Rigging, Inc.; Freeman Companies; A; DR  
John C. Snook; Thermotex Industries Inc.; P; CP  
Stewart Stephens; JSAV; P; DR  
Stephen G. Surratt; Texas Scenic Company; P; DR  
Peter V. Svitavsky; J.R. Clancy, Inc.; Wenger Corp.; P; CP  
Jason Tello; Tyler Truss Systems; P; CP

Ken Tilson; Columbus McKinnon Corp.; P; MP  
Will Todd; Tomcat USA, Inc.; Milos Group; P; MP  
Elmer Veith; Total Structures - Eastern US Sales Office; Total Structures, Inc.; A; MP  
Steve Walker; Steve A. Walker & Associates; P; G  
Patrick Wallace; PSAV Presentation Services; O; U  
Mike Webb; Motion Laboratories, Inc.; A; MP  
Marty Wesstrom; Mountain Productions Inc.; P; DR  
R. Duane Wilson; George C. Izenour Associates; Amer. Society of Theatre Consultants; P; DE  
Stephan Jon Wood; Stage Technologies; Tait Towers Manufacturing LLC; P; CP  
Jeong Sik Yoo; Ghost LX; Ghost LX; O; DE

**Visitors:**

Jules Lauve; Theatre Projects  
Dana Taylor; Mt. Vernon Sr. High School

**1 Opening remarks**

Bill Sapsis asked attendees to find their seats and called the meeting to order at 7:02 p.m. CDT. He welcomed everyone, once again, to the lovely, beautiful Marriott Solana. He thanked everyone for being here and for doing this work, noting that his thanks was not a formality, but rather a sincere appreciation for everyone's participation.

**2 Attendance and membership**

**2.1 Introductions of those present and taking attendance**

A blue sign-in sheet was passed counter-clockwise around the room while self-introductions took place clockwise.

**2.2 Call for quorum**

By a count of voters' raised hands in the room and on WebEx, Bill Sapsis announced a supermajority present.

**2.3 Requirements for membership**

The following statement was read aloud to the assembly by Bill Sapsis:

Membership is open to all who are materially affected by the work of the group. People who would be in the designer interest group category are particularly encouraged to join. There is an annual \$100 participation fee for all members. Voting members are required to attend meetings and to vote on letter ballots. Any principal member and voting alternate who both miss three consecutive meetings or letter ballots will have their membership status changed to observer.

**2.4 Changes of membership status due to lack of attendance**

Bill Sapsis noted that the following voter has missed the last three meetings and is being moved to Observer status, due to lack of attendance:

Pete Happe; I; G

**2.5 Processing of new membership and change in status requests:**

As of 27 July 2017, the following new applications or status change requests have been received:

Stewart Stephens; JSAV; P; DR  
Rick Montgomery; Motion Laboratories, Inc.; P; MP  
Robert Dean; ZFX, Inc.; P; General Interest to Custom-market producer  
Mike Webb; Motion Laboratories, Inc.; A; MP  
Dave Sinkhorn; R&M Materials Handling / Stagemaker; P; MP (Accepted as Observer)  
Jeong Sik Yoo; Ghost LX; O; DE (Change in representation)

Eddie Kramer moved to approve the applications and changes in status, with the exception of applicants not present who are requesting Principal status. They will be accepted as Observers, due to lack of attendance. The motion was seconded and approved by a show of hands.

## 2.6 Consensus body

The full consensus body of this group at the time of this meeting, including those not present, was:

Name	Representing	Voting status	Interest category
Ethan William Gilson	Advanced Lighting and Production Services	P	U
William Bradburn	Aerial Arts, Inc.	P	U
R. Duane Wilson	Amer. Society of Theatre Consultants	P	DE
Max A. Wilson	Applied Electronics	P	MP
Jon Lenard	Applied Electronics	A	MP
Donald Hoffend_III	Avista Designs, LLC	P	G
Eric Rouse	Chicago Flyhouse	P	CP
Steven Serafin	Chubb Group of Insurance Companies	P	G
Jeremy Hodgson	Cirque Du Soleil, Inc.	P	U
Tom Lapp	Cirque Du Soleil, Inc.	A	U
Ken Tilson	Columbus McKinnon Corp.	P	MP
Herb Hart	Columbus McKinnon Corp.	A	MP
Dan Gibbs	Crew One Productions	P	U
Don Earl	Earl Girls, Inc.	P	DR
Steven Ricks	Electronic Theatre Controls, Inc.	P	MP
Michael Lichter	Electronic Theatre Controls, Inc.	A	MP
Joseph Champelli	Entertainment Project Services, LLC	P	DE
Steven Michelman	Entertainment Project Services, LLC	A	DE
Dana Bartholomew	Foy Invenerprises, Inc.	P	CP
Joseph McGeough	Foy Invenerprises, Inc.	A	CP
John Ringelman	Freeman Companies	P	DR
Rocky Paulson	Freeman Companies	A	DR
Chris Schmidt	Freeman Companies	A	DR
Theresa Kelley	Full Throttle Films/ VER	P	DR
Miriam Paschetto	Geiger Engineers	P	G
Ted Jones	Grand Stage	P	U
Reid Neslage	H & H Specialties Inc.	P	MP
Pat Grenfell	Hoist Sales & Service	P	DR
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
Roger Lattin	I.A.T.S.E. Local 728	P	U
Rod Haney	I.A.T.S.E. Local 891	P	U
Russ Dusek	I Weiss	P	MP
Bruce Darden	InterAmerica Stage, Inc.	P	CP
Stewart Stephens	JSAV	P	DR
Jonathan Deull	JSD Projects LLC	I	U

<b>Name</b>	<b>Representing</b>	<b>Voting status</b>	<b>Interest category</b>
Jerald Kraft	JTH Lighting Alliance	P	CP
Keith Bohn	Keith Bohn	I	G
William Beautyman	Limelight Productions, Inc.	P	DR
William B. Gorlin	M.G. McLaren, P.C.	P	G
Frank Allison	M.G. McLaren, P.C.	A	G
Mike Adamovich	M.G. McLaren, P.C.	A	G
Mike Garl	Mike Garl Consulting LLC	P	DE
Will Todd	Milos Group	P	MP
Charlie Weiner	Milos Group	A	MP
Rick Montgomery	Motion Laboratories, Inc.	P	MP
Mike Webb	Motion Laboratories, Inc.	A	MP
Marty Wesstrom	Mountain Productions Inc.	P	DR
Jacob E. Loretto	Musson Theatrical Inc.	P	DR
Tim Hansen	Oasis Stage Werks	P	DR
Orestes Mihaly	Production Resource Group	P	DR
Shawn Nolan	Production Resource Group	A	DR
Carlos Ortega	PSAV Presentation Services	P	U
Demian Purdy	PSAV Presentation Services	A	U
Bartholomew J. Mueller	Recreation Engineering Inc.	P	DE
Bennett Brian	Reed Rigging Inc.	P	DR
Richard J. Nix	Richard J. Nix	I	G
Jesse Adams	Rose Brand	P	DR
Bill Sapsis	Sapsis Rigging, Inc.	P	U
Joseph Jeremy	Show Distribution Group, Inc.	P	MP
Sanford P. Gilzow	Shur-Rig LLC	P	G
Joseph S. Schuster	Simpson Gumpertz & Heger	P	DE
Brad Dittmer	Stage Labor of the Ozarks	P	U
Steve Walker	Steve A. Walker & Associates	P	G
Kyle Kusmer	Steven Schaefer Associates	P	G
Christine L. Kaiser	Syracuse Scenery & Stage Lighting Co., Inc.	P	DR
Harold Ike Shippers	Syracuse Scenery & Stage Lighting Co., Inc.	A	DR
Stephan Jon Wood	Tait Towers Manufacturing LLC	P	CP
Stephen G. Surratt	Texas Scenic Company	P	DR
Russell Solomon	Texas Scenic Company	A	DR
Jim Niesel	Theatre Projects Consultants, Inc.	P	DE
Jerry Gorrell	Theatre Safety Programs	P	G
John C. Snook	Thermotex Industries Inc.	P	CP

Name	Representing	Voting status	Interest category
Sam Michael	Thern, Inc.	P	MP
Jeff Wilkowski	Thern, Inc.	A	MP
Daniel H. Louis	Theta Consulting LLC	P	G
Adrian Forbes-Black	Total Structures Inc.	P	MP
Elmer Veith	Total Structures, Inc.	A	MP
Jason Tello	Tyler Truss Systems	P	CP
Dan Lisowski	University of Wisconsin - Madison	P	U
Tracy Nunnally	Vertigo	P	CP
John P. Moore	Vertigo	A	CP
Ian Bevan	Walt Disney Company	P	U
Nick Fleming	Walt Disney Company	A	U
Peter V. Svitavsky	Wenger Corp.	P	CP
Dan Culhane	Wenger Corp.	A	CP
Paul Zagajeski	Wenger Corp.	A	CP
Gregory Orth	WNP Services, Inc.	P	DR
Michael Wells	Xtreme Structures and Fabrication	P	MP
Mark Newlin	Xtreme Structures and Fabrication	A	MP
Robert Dean	ZFX, Inc.	P	CP
Jason Schumacher	ZFX, Inc.	A	CP
<b>Voting Status Key: P = Principal voter, A = Alternate voter, I = Individual voter</b>			
<b>Votes by Interest Category:</b>			
Custom-market producer		CP	0
Designer		DE	6
Dealer or rental company		DR	15
General interest		G	11
Mass-market producer		MP	11
User		U	14
<b>Total votes possible:</b>			<b>67</b>

### 3 Approval of minutes from the previous meeting

See *RIGmin03-2017.pdf*.

Dan Culhane moved to approve the minutes of the previous meeting. The motion was seconded and approved by a show of hands, with no discussion, abstentions, or objections.

### 4 ESTA declarations

#### 4.1 Reading of the anti-trust statement

The following statement was read aloud to the assembly by Bill Sapsis:

ESTA and its members take seriously their obligation to comply with all applicable antitrust laws. Therefore, during this meeting and during all ESTA events, all discussions will be limited to those subjects that are permitted by the antitrust laws. All members should refrain from any discussion or mention of competitively

sensitive subjects such as the current or future prices charged for any member product or services, current or future marketing plans or strategies, and current or future costs, including employee salaries. There also must be no agreement on the suppliers or customers that members will or will not do business with or the markets in which members will conduct business.

Violations of the antitrust laws can have serious consequences. If you have any questions or concerns about anything that is discussed at a ESTA meeting, please bring your concern to ESTA management. An easy to read pamphlet describing the antitrust laws is available from the ESTA staff.

Karl Ruling and Erin Grabe held up copies of the new pamphlets. A couple copies of the new anti-trust guide were distributed.

#### **4.2 Reading of the call for patents**

The following statement was read aloud to the assembly by Bill Sapsis:

ESTA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent and copyright disclosures to implement its intent. ESTA does not conduct patent or copyright searches and does not warrant that its standards contain no protected intellectual property.

In keeping with the open disclosures policy, I ask if anyone present wishes to notify this working group of the existence of a patent, patent application, copyright, or other intellectual property that might protect material in a standard being developed by this working group. You need not be the holder of the patent or copyright to notify this working group of its existence.

Nothing was revealed.

#### **5 Approval of the agenda**

Dan Culhane moved to approve the agenda. The motion was seconded. Bill Sapsis added a discussion on the National Labor Statistics Board. Dan Culhane modified his motion to accept this change. The motion was seconded and approved by a show of hands with no objections or abstentions.

#### **6 Old business**

##### **6.1 BSR E1.1 – 2012 (R201x), wire rope ladders** (reaffirmation sought before 19 June 2017)

*This standard is being considered for reaffirmation. It was in letter ballot and public review through 3 April 2017. See RecircBallotSmmry\_RWG\_Ballot for E1-1\_reaffirmation.pdf and E1-1\_RevwSmmry.pdf. Objections received from voters within the working group must be responded to before the measure can move to the TSC.*

*See E1-1ReaffBallotWithDraftResols.pdf and BSR\_E1-1\_201x\_Rig2004-2029r4.pdf. Revision, rather than reaffirmation is being suggested, based on draft resolutions.*

Karl Ruling explained that the working group cannot both reaffirm and revise the standard. There was discussion about the comment resolutions, which suggest changes to the document. Dan Culhane moved to revise the document, rather than reaffirm it. The motion was seconded and unanimously approved by a show of hands.

Bill Sapsis appointed a task group to handle the revisions: Sandy Gilzow (Chair), Chris Schmidt, Chris Kaiser, and Dan Gibbs.

Tim Hansen moved to issue a resolution to the comments that the group will consider the comments in a revision. The motion was seconded and unanimously approved.

##### **6.2 ANSI E1.2 - 2012, Entertainment Technology - Design, Manufacture and Use of Aluminum Trusses and Towers** (revision, reaffirmation, or withdrawal by 15 January 2018)

*From the draft March minutes:*

*Elmer Veith said that the task group is still waiting and that he stands by the opinion he expressed at the last meeting. There's a lot of other work to do before work can be done on this document.*

Elmer Veith moved to open this standard for revision, but asked that leadership of the project be transferred to Keith Bohn. The motion was seconded and approved by a show of hands, with no objections or abstentions.

Bill Sapsis appointed Keith Bohn to lead a new task group, made up of Jason Tello, Will Todd, Jacob Abbott, Jerry Gorrell, and Mike Garl. Keith Bohn said that the group will try to take action at LDI.

**6.3 ANSI E1.4-1 - 2016, Entertainment Technology--Manual Counterweight Rigging Systems** (Revise, reaffirm, or withdrawal by 11 October 2021)

No news or action at this time.

**6.4 BSR E1.4-2 - 201x, Entertainment Technology—Statically Suspended Rigging Systems**

*From the draft March minutes:*

*Ethan Gilson spoke to the few internal comments that were sent to the task group. Ethan Gilson moved to offer the draft for public review and take the internal comments as public review comments. The motion was seconded, but failed by a show of hands and WebEx chat. Bruce Darden moved to offer the document for public review via letter ballot after the internal comments and clerical errors have been corrected. Karl Ruling noted that since this is a 1st public review, the TSC will also need to vote via letter ballot. The motion carried with one abstention. A letter ballot will be issued to the TSC, when the document is submitted to TSP staff.*

*The revised document was not submitted to TSP staff, so no public review vote was issued to the TSC.*

No one on the task group was present to address this project.

**6.5 BSR E1.4-3 - 201x, Entertainment Technology - Manually Operated Hoist Rigging Systems**

*The working group letter ballot to accept the resolutions from the public review of this document was extended through the end of this agenda item. Many no votes were received during the ballot period that suggested both the resolutions as drafted and the implementation of them into the draft standard were insufficient. The resolutions have been revised and they have been implemented into a newly revised draft standard, see BSR\_E1-4-3-201x\_Rig-2015-2022r6.pdf and DRAFTresols\_r1\_E1-4-3.pdf. A roll call vote will be conducted to approve the revised resolutions. The votes of those who voted during the ballot period but are not present at the meeting will remain as submitted electronically.*

Dan Culhane noted that certain resolutions on the revised comment resolutions are still not in line with the document. It was noted that Richard Nix and Sam Michael comprise the task group. A roll call ballot was conducted to approve of the comment resolutions. The roll call ballot failed with 40 NO votes. The advice to the task group from the working group was: to review the documents in detail to be sure that section references point to actual and correct sections; that annex notes called out in the document actually have a correlating annex note; that the language for Design and Static Loads be streamlined and made consistent; that the language in this document align with 1.6-1; that all resolutions be properly implemented into the draft standard; and that Steve Walker and Bill Gorlin's comments about adding a section be reconsidered. Bill Sapsis asked the group to send additional comments to Richard Nix.

[Note that the consensus body for this roll-call ballot matches that of the consensus body when the motion was made, March 2017, and is not the consensus body for this meeting.]

Name	No	Yes	Abstain
Name: Ethan William Gilson - Advanced Lighting and Production Services (U)		X	
Name: William Bradburn - Aerial Arts, Inc. (U)	X		
Name: R. Duane Wilson - Amer. Society of Theatre Consultants (DE)	X		
Name: Max A. Wilson - Applied Electronics (MP)		X	
Name: Ty M. Prewitt - BellaTEX, Inc. (MP)		X	
Name: Eric Rouse - Chicago Flyhouse (CP)		X	
Name: Steven Serafin - Chubb Group of Insurance Companies (G)		X	

Name	No	Yes	Abstain
Name: Jeremy Hodgson - Cirque du Soleil, Inc. (U)		X	
Name: Ken Tilson - Columbus McKinnon Corp. (MP)	X		
Name: Dan Gibbs - Crew One Productions (U)	X		
Name: Don Earl - Earl Girls, Inc. (DR)	X		
Name: Steven Ricks - Electronic Theatre Controls, Inc. (MP)		X	
Name: Dana Bartholomew - Foy Invenenterprises, Inc. (CP)	X		
Name: John Ringelman - Freeman Companies (DR)	X		
Name: Theresa Kelley - Full Throttle Films/VER (DR)	X		
Miriam Paschetto – Geiger Engineers (G)	X		
Name: Ted Jones - Grand Stage Company (U)		X	
Name: Reid Neslage - H & H Specialties Inc. (MP)	X		
Name: Pat Grenfell - Hoist Sales & Service (DR)	X		
Name: Russ Dusek - I Weiss (MP)	X		
Name: Edwin S. Kramer - I.A.T.S.E. Local 1 (U)	X		
Roger Lattin – I.A.T.S.E. Local 728 (U)			X
Name: Rod Haney - IATSE Local 891 (U)	X		
Bruce Darden – InterAmerica Stage, Inc. (CP)	X		
Name: Jerald Kraft - JTH Lighting Alliance (CP)		X	
Name: Keith Bohn - Keith Bohn (G)	X		
Name: William B. Gorlin - M.G. McLaren, P.C. (G)	X		
Name: Mike Garl - Mike Garl Consulting LLC (DE)	X		
Name: Will Todd - Milos Group (MP)	X		
Name: Marty Wesstrom - Mountain Productions Inc. (DR)	X		
Name: Jacob E. Loretto - Musson Theatrical Inc. (DR)	X		
Name: Tim Hansen - Oasis Stage Werks (DR)	X		
Name: Pete Happe - Pete Happe (G)	X		
Name: Orestes Mihaly - Production Resource Group (DR)	X		
Name: Carlos Ortega - PSAV Presentation Services (U)	X		
Name: Tracie Allen - R&M Materials Handling (MP)		X	
Name: Bartholomew J. Mueller - Recreation Engineering Inc. (DE)	X		
Name: Bennett Brian - Reed Rigging, Inc. (DR)	X		
Name: Richard J. Nix - Richard J. Nix (G)		X	
Name: Jesse Adams - Rose Brand (DR)	X		
Name: Bill Sapsis - Sapsis Rigging, Inc. (U)	X		
Name: Joseph Jeremy - Show Distribution Group, Inc. (MP)		X	
Name: Sanford P. Gilzow - Shur-Rig LLC (G)	X		
Name: Joseph S. Schuster - Simon Gumpertz & Heger (DE)		X	



Name	No	Yes	Abstain
Name: Brad Dittmer - Stage Labor of the Ozarks (U)		X	
Name: Steve Walker - Steve A. Walker & Associates (G)	X		
Name: Kyle Kusmer - Steven Schaefer Associates (G)	X		
Name: Christine L. Kaiser - Syracuse Scenery & Stage Lighting Co., Inc. (DR)	X		
Name: Stephan Jon Wood - Tait Towers Manufacturing LLC (CP)	X		
Name: Stephen G. Surratt - Texas Scenic Company (DR)	X		
Name: Jim Niesel - Theatre Projects Consultants, Inc. (DE)	X		
Name: Jerry Gorrell - Theatre Safety Programs (G)	X		
Name: John C. Snook - Thermotex Industries Inc. (CP)		X	
Name: Daniel H. Louis - Theta Consulting LLC (G)		X	
Elmer Veith – Total Structures, Inc. (MP)	X		
Name: Jason Tello - Tyler Truss Systems (CP)	X		
Name: Dan Lisowski - University of Wisconsin - Madison (U)	X		
Name: Tracy Nunnally - Vertigo (CP)		X	
Name: Ian Bevan - Walt Disney Company (U)		X	
Name: Peter V. Svitavsky - Wenger Corp. (CP)	X		
Name: Gregory Orth - WNP Services, Inc. (DR)	X		
Name: Mark Newlin - Xtreme Structures and Fabrication (MP)		X	
Name: Robert Dean - ZFX Flying Inc. (G)		X	
<b>Totals:</b>	<b>42</b>	<b>20</b>	<b>1</b>
<b>Votes by interest category:</b>			
Interest category	No	Yes	Abstain
Custom-market producer (CP)	5	4	0
Designer (DE)	4	1	0
Dealer/Rental company (DR)	13	0	0
General interest (G)	8	4	0
Mass-market producer (MP)	5	6	0
User (U)	7	5	1

**Did not vote:** The following Principal and Alternate voters did not vote during the letter ballot period and were not present to vote during the roll call ballot. A total of five voters did not vote.

Name	Interest Category	Representation
Donald Hoffend_III	G	Avista Designs, LLC
Steven Michelman	DE	Entertainment Project Services, LLC
Joseph Champelli	DE	Entertainment Project Services, LLC
Jonathan Deull	U	JSD Projects LLC
William Beautyman	DR	Limelight Productions, Inc.
Sam Michael	MP	Thern, Inc.

Jeff Wilkowski	MP	Thern, Inc.
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**6.6 BSR E1.6-1 - 201x, Entertainment Technology--Powered Hoist Systems** (last published in 2012-- revision, reaffirmation, or withdrawal by 20xx)

*From the draft March minutes:*

*Bruce Darden would like to send something for consideration by Easter [roughly five weeks from 9 March].*

Bruce Darden is pleased to say that the task group was productive at a meeting earlier today. The document is being renumbered and a final pass will be taken. He hopes to get the document to the RWG six weeks before LDI for the group to consider, with the hope of offering the draft for public review. 30 September is the target date to get the draft to the group.

The task group consists of Bruce Darden (chair), Chris Kaiser, Dan Culhane, Pete Svitavsky, Stephan Wood, Steve Ricks, Jim Niesel, Sandy Gilzow, Joe Champelli, and Steve Walker.

**6.7 BSR E1.6-2 - 20xx, Entertainment Technology--Design, Inspection, and Maintenance of Electric Chain Hoists for the Entertainment Industry** (last published in 2013 - revision, reaffirmation, or withdrawal by 20xx)

*See BSR\_E1-6-2\_201x\_Draft\_TrackedChanges.pdf, distributed to the RWG on 22 May for internal comments. Any news or action at this time?*

Elmer Veith said that a draft was sent to the group and some comments were received. The task group considered the comments at their meeting this morning, but made no substantive changes to the draft as distributed. Elmer Veith moved to offer the draft for public review. The motion was seconded and approved by a show of hands, with no objections or abstentions.

The task group consists of Ken Tilson, John Ringleman, Ben Brian, Marty Westrom, Rick Montgomery, Chris Schmidt, Herb Hart, Sandy Gilzow, and Elmer Veith (Chair).

**6.8 BSR E1.6-3 - 201x, The Use of Electric Chain Hoists in the Entertainment Industry** (revision, reaffirmation, or withdrawal by 3 July 2017)

Elmer Veith said that the group met for the first time today, where they went through about half of the document. They will meet again at LDI, with a chance of sending it to the RWG for consideration at the January meeting.

The task group consists of John Ringleman, Dan Lisowski, Herb Hart; Ben Brian, Pat Grenfell, Nick Fleming, Charlie Weiner, Rod Haney, and Elmer Veith (Chair). Patrick Wallace and Greg Williams were added.

**6.9 BSR E1.6-4 - 201x, Control of Electric Chain Hoists in the Entertainment Industry** (revision, reaffirmation, or withdrawal by 3 October 2018)

Dan Lisowski said that the standard was opened for revision at the last meeting, but a task group was not yet set. Bill Sapsis appointed Rick Montgomery and John Ringleman to start a task group with chair, Dan Lisowski.

**6.10 BSR E1.8 – 2012 (R201x), Entertainment Technology—Loudspeaker Enclosures Intended for Overhead Suspension—Classification, Manufacture and Structural Testing** (revision, reaffirmation, or withdrawal by 15 January 2018)

*This standard was up for reaffirmation. See RecircBallotSmmry\_E1-8\_Rig-2017-2007r2.pdf and E1-8\_RevwSmmry.pdf. Objections were received during the working group ballot and need to be resolved.*

In light of the comments and proposed resolutions, Bruce Darden moved to revise the standard, rather than reaffirm it. The motion was seconded and approved with two objections and two abstentions. Sandy Gilzow and Jim Niesel volunteered to start a task group.

Dan Culhane moved to accept the draft public review resolutions and invite participation from the commenter. The motion was seconded and unanimously approved by a show of hands.

**6.11 ANSI E1.15 - 2006 (R2016), Entertainment Technology--Recommended Practices and Guidelines for the Assembly and Use of Theatrical Boom & Base Assemblies** (revision, reaffirmation, or withdrawal by 23 September 2021)

No news or action at this time.

**6.12 ANSI E1.21 - 2013, Entertainment Technology — Temporary Structures Used for Technical Production of Outdoor Entertainment Events** (revision, reaffirmation, or withdrawal by 19 December 2018)

No news or action at this time.

**6.13 ANSI E1.22 - 2016, Entertainment Technology - Fire Safety Curtain Systems** (Revise, reaffirm, or withdrawal by 11 October 2021)

No news or action at this time.

**6.14 ANSI E1.39 - 2015, Entertainment Technology –Selection and Use of Personal Fall Arrest Systems on Portable Structures Used in the Entertainment Industry** (Revision, reaffirmation, or withdrawal by 28 January 2020)

No news or action at this time.

**6.15 ANSI E1.43 - 2016, Live performer flying effect standard** (Revise, reaffirm, or withdrawal by 12 February 2021)

No news or action at this time.

**6.16 ANSI E1.44 – 2014, Common Show File Exchange Format for Entertainment Industry Automation Control Systems -- Stage Machinery** (revision, reaffirmation, or withdrawal by 6 February 2019)

No news or action at this time.

#### **6.17 Rigging Glossary**

Chris Kaiser said that this document is still on hiatus, but that it may come to the surface soon.

**6.18 ANSI E1.47 – 2017, Recommended Guidelines for Entertainment Rigging System Inspections** (Revision, reaffirmation, or withdrawal by 28 April 2022)

Erin Grabe reported that 409 copies of this standard had already been downloaded.

#### **6.19 BSR E1.50-1—Video wall project**

Erin Grabe noted that a BSR9 for final action was filed with ANSI on 12 July 2017.

#### **6.20 BSR E1.56, Rigging Support Points Design, Fabrication, Installation, and Testing**

*See the revised draft, BSRE1-56\_Rig2015-2034r4.pdf and the proposed resolutions, E1-56\_2ndRevwDraftResols.pdf.*

The task group addressed all comments and have a strong document, says Shawn Nolan. He moved to approve the resolutions as submitted. The motion was seconded. Steve Walker has issue with some of the changes, including 3.3.8.1 (comment 17). Shawn Nolan explained the resolution in more detail. The motion failed with only 17 in favor, two opposed, and the rest abstentions. Bill Sapsis told the members present to send comments on this draft standard to Shawn Nolan.

The task group consists of Carlos Ortega (Chair), Demian Purdy, Mike Wells, Shawn Nolan, Jonathan Duell, Chris Schmidt.

#### **6.21 BSR E1.59 – 20xx, Automation Vector Transmission Protocol**

Dan Lisowski said that the task group met this morning. Necessary details were hashed out to complete a white paper, with the hopes of getting circulated to the working group by 30 September. Dan noted that video server and projection companies are getting on board.

The RWG portion of the task group consists of Jem Hodgson, Joe Jeremy, Jim Love, Michael Lichter, and Dan Lisowski (Chair).

## 7 New business

### 7.1 Rigging console protocol

*From the draft March minutes:*

*Joe Jeremy is drafting a new project form for this group to consider.*

Nothing of note at this time.

### 7.2 Task group coordination

*The task group leader and members of each task group should be listed for each open project. See agenda items for each project and the reflector lists at the end of the minutes.*

- **BSR E1.1 – 2012 (R201x), Wire Rope Ladders**
- **BSR E1.2 – 201x, ANSI E1.2 - 2012, Entertainment Technology - Design, Manufacture and Use of Aluminum Trusses and Towers**
- **BSR E1.4-2 - 201x, Entertainment Technology—Statically Suspended Rigging Systems**
- **BSR E1.4-3 - 201x, Entertainment Technology—Manually Operated Hoist Rigging Systems**
- **BSR E1.6-1 - 201x, Entertainment Technology—Powered Hoist Systems**
- **BSR E1.6-2 - 20xx, Entertainment Technology—Design, Inspection, and Maintenance of Electric Chain Hoists for the Entertainment Industry**
- **BSR E1.6-3 - 201x, The Use of Electric Chain Hoists in the Entertainment Industry**
- **BSR E1.6-4 - 201x, Control of Electric Chain Hoists in the Entertainment Industry**
- **BSR E1.8 – 2012 (R201x), Entertainment Technology--Loudspeaker Enclosures Intended for Overhead Suspension--Classification, Manufacture and Structural Testing**
- **BSR E1.50—Video wall project**
- **BSR E1.56, Rigging Support Points Design, Fabrication, Installation, and Testing**
- **BSR E1.59 – 20xx, Automation Vector Transmission Protocol**

## 8 Other business and announcements

### 8.1 Bureau of Labor Statistics request

Bill Sapsis read the email from Jim Utterback.

*Local 22 received a letter from the Bureau of Labor Statistics seeking info on riggers physical qualifications. It says:*

*I'm collecting data for the Occupational Requirements Survey. These data are to aid Social Security Administration in their disability determination process. Specifically, the ORS gathers job-related information regarding physical demands, environmental conditions, and vocational preparation requirements for use in the SSA's review of disability applicant claims. Please let me know who I should speak to for information on job duties, job requirements and physical demands...necessary to perform duties as a Rigger: physical demands, such as standing/sitting, keyboard use, and heavy lifting, exposure to environmental conditions such as extreme heat or cold, the amount of education, training and/or prior work experience required.*

Bill Sapsis would like to work with a small group of people to answer the questions about rigger qualifications. The full email will be sent with the meeting minutes. Demian Purdy said that he may have something drawn up already to start with. Dan Gibbs said that he could add to the conversation.

### 8.2 Above & Beyond Awards

Bill Sapsis said that the nomination site is open year round at [estalink.us/aboveandbeyond](http://estalink.us/aboveandbeyond). Everyone is encouraged to make nominations for the Above & Beyond Awards.

### 8.3 CEN standards update

No update at this time.

#### **8.4 INNOVA**

Bill Sapsis said that USITT and ESTA have partnered up to bring you INNOVA, an online learning platform for the entertainment technology industry. Check it out at <http://innova.usitt.org>. Content and content providers are being sought. If you are interested, email [standards@esta.org](mailto:standards@esta.org) to be put in touch with someone.

Orestes Mihaly gave kudos to Karl Ruling for his standards synopses. He said it was a great way to provide a basic understanding of a standard.

#### **8.5 Please Direct People to ESTA's Website for Standards**

Bill Sapsis ask that people direct others to [http://tsp.esta.org/tsp/documents/published\\_docs.php](http://tsp.esta.org/tsp/documents/published_docs.php) for published standards, rather than providing copies on your own website or direct links to the published standards. There are several reasons for this. Bill said that folks could read the reasons, as follows, from the agenda.

*1. The free downloads are sponsored by ProSight Specialty Insurance, which benefits from the promotion and from the opportunity people have to click on "Please send me more information about entertainment insurance." We need to earn their continued support by helping their sponsorship to return some value to them.*

*2. Some of the websites offering our standards are not up to date and list superseded standards as though they are the latest version. This could cause problems for the host company and our industry, because requirements in an old standard may not be the same as the requirements in a later version of that standard. Superseded standards are still available from ESTA, but they are watermarked, "Superseded," so people can get them if they need them, but it is clear that the old standards are not the current editions.*

*3. If you direct people to ESTA's site, they might also see the plea to help support the TSP as an Investor in Innovation. We need continuing support from the industry, and the broader that support is, the more secure we are and the less the burden is on any individual donor.*

*4. If you direct people to ESTA's site, they might see some other standards that will help them in their work. At a minimum, they will see the depth of the offerings and understand that there is standards work being done in a number of areas affecting our industry.*

*Please, promote your work with the TSP on your website. List all of the standards for this working group, that you've personally worked on, or that are pertinent to your business, but, please, direct people to [http://tsp.esta.org/tsp/documents/published\\_docs.php](http://tsp.esta.org/tsp/documents/published_docs.php) to download the standards. If nothing else, doing so would lessen your workload, because you wouldn't have to update the page every time a standard is reaffirmed or revised. That saves you time and money and perhaps makes a little money for the TSP.*

#### **8.6 Lifetime Technical Achievement Award**

It was noted that Bob Goddard was to receive the award on Monday morning.

#### **8.7 Investors in Innovation**

Mike Garl thanked those in the room who are already Investors in Innovation. said that more funding is still needed. ANSI dues are going up and funding has taken a loss with the termination of our relationship with LDI. Mike Garl pleaded with the group to support the TSP financially.

#### **9 Schedule for future meetings**

*The full meeting schedule may be found at <http://www.esta.org/ESTA/meetings.php>.*

##### **9.1 November meetings**

Bill Sapsis said that the November meeting is scheduled for Wednesday, 15 November 2017, from 7:00 p.m. to 11:00 p.m. PST at the Tropicana Las Vegas, 3801 Las Vegas Blvd. South, Las Vegas, NV 89109.

##### **9.2 January meetings**

Bill Sapsis said that the January meetings will take place in conjunction with the NAMM Show at the Anaheim Convention Center, which is scheduled for 25-28 January 2018.

## **10 Adjournment**

Pat Grenfell moved to adjourn. The motion was seconded and, hearing no objections, Bill Sapsis declared the meeting adjourned at 9:28 p.m. CDT.

Name	Company	Representing	Voting status	Int cat
Jacob Abbott	PSAV Presentation Services	PSAV Presentation Services	O	U
Mike Adamovich	McLaren Engineering Group	M.G. McLaren, P.C.	A	G
Jesse Adams	Rose Brand	Rose Brand	P	DR
Frank Allison	McLaren Engineering Group	M.G. McLaren, P.C.	A	G
Matthew Antonucci	Contract Services Administration Trust Fund	Contract Services Administration Trust Fund	O	U
Brent Armstrong	Alpine Rigging & Structural Design	Alpine Rigging & Structural Design	O	CP
William Ian Auld	Auld Entertainment	Auld Entertainment	O	U
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	DR
Roger Barrett	Star Events Group Ltd.	Star Events Group Ltd.	O	DR
Dana Bartholomew	Flying by Foy	Foy Invenerprises, Inc.	P	CP
William Beautyman	Limelight Productions, Inc.	Limelight Productions, Inc.	P	DR
Ian Bevan	Walt Disney Parks and Resorts	Walt Disney Company	P	U
Roy Bickel	Roy Bickel	Roy Bickel	O	G
Scott M. Blair	Full Throttle Films/ VER	Full Throttle Films/ VER	O	DR
Keith Bohn	Keith Bohn	Keith Bohn	I	G
William Bradburn	Aerial Arts, Inc.	Aerial Arts, Inc.	P	U
Louis Bradfield	Louis Bradfield	Louis Bradfield	O	U
Bennett Brian	Reed Rigging Inc.	Reed Rigging Inc.	P	DR
David M. Campbell	Geiger Engineers	Geiger Engineers	O	G
Joseph Champelli	Entertainment Project Services, LLC	Entertainment Project Services, LLC	P	DE
Daniel J. Clark	Clark-Reder Engineering, Inc.	Clark-Reder Engineering, Inc.	O	G
Benjamin Cohen	Chicago Flyhouse Inc.	Chicago Flyhouse Inc.	O	CP
Dan Culhane	J.R. Clancy, Inc.	Wenger Corp.	A	CP
Bruce Darden	InterAmerica Stage, Inc.	InterAmerica Stage, Inc.	P	CP
David Darland	PSAV Presentation Services	PSAV Presentation Services	O	U

Name	Company	Representing	Voting status	Int cat
Robert Dean	ZFX, Inc.	ZFX, Inc.	P	CP
Jonathan Deull	JSD Projects LLC	JSD Projects LLC	I	U
Jim Digby	Event Safety Alliance	Event Safety Alliance	O	U
Brad Dittmer	Stage Labor of the Ozarks	Stage Labor of the Ozarks	P	U
Russ Dusek	I Weiss	I Weiss	P	MP
Don Earl	Earl Girls, Inc.	Earl Girls, Inc.	P	DR
Nick Fleming	Walt Disney Parks and Resorts U.S.	Walt Disney Company	A	U
Adrian Forbes-Black	Total Structures, Inc.	Total Structures Inc.	P	MP
Tim Franklin	Theta Consulting LLC	Theta Consulting LLC	O	G
Mike Garl	Mike Garl Consulting LLC	Mike Garl Consulting LLC	P	DE
James M. Garner	Walt Disney Studios - Disney Theatrical Group	Walt Disney Company	O	G
Dan Gibbs	Crew One Productions	Crew One Productions	P	U
Ethan William Gilson	ALPS	Advanced Lighting and Production Services	P	U
Sanford P. Gilzow	Shur-Rig LLC	Shur-Rig LLC	P	G
William B. Gorlin	McLaren Engineering Group	M.G. McLaren, P.C.	P	G
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	G
Michael P. Gosenski	Rigging Systems LLC	Rigging Systems LLC	O	U
Erin Grabe	ESTA	ESTA	exf	G
Pat Grenfell	Hoist Sales & Service	Hoist Sales & Service	P	DR
Rod Haney	I.A.T.S.E. Local 891	I.A.T.S.E. Local 891	P	U
Tim Hansen	Oasis Stage Werks	Oasis Stage Werks	P	DR
Pete Happe	Pete Happe	Pete Happe	O	G
Sean Harding	Port Lighting Systems	Port Lighting Systems	O	G
Herb Hart	Columbus McKinnon Corp.	Columbus McKinnon Corp.	A	MP
Chris Higgs	Total Solutions Group	Total Solutions Group	O	G



Name	Company	Representing	Voting status	Int cat
Jeremy Hochman	Full Throttle Films/ VER	Full Throttle Films/ VER	O	DR
Jeremy Hodgson	Cirque Du Soleil, Inc.	Cirque Du Soleil, Inc.	P	U
Donald Hoffend_III	Avista Designs, LLC	Avista Designs, LLC	P	G
Joseph Jeremy	Niscon Inc.	Show Distribution Group, Inc.	P	MP
Ted Jones	Art Drapery Studios	Grand Stage	P	U
Kent H. Jorgensen	IATSE Local 80	IATSE Local 80	O	G
Gary Justesen	Oasis Stage Werks	Oasis Stage Werks	O	DR
Christine L. Kaiser	Syracuse Scenery & Stage Lighting Co., Inc.	Syracuse Scenery & Stage Lighting Co., Inc.	P	DR
Theresa Kelley	Full Throttle Films/ VER	Full Throttle Films/ VER	P	DR
Jerald Kraft	JTH Lighting Alliance	JTH Lighting Alliance	P	CP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
Kyle Kusmer	Entertainment Structures Group	Steven Schaefer Associates	P	G
Tom Lapp	Cirque Du Soleil, Inc.	Cirque Du Soleil, Inc.	A	U
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
Jon Lenard	Applied Electronics	Applied Electronics	A	MP
Michael Lichter	Electronic Theatre Controls, Inc. (DE)	Electronic Theatre Controls, Inc.	A	MP
Dan Lisowski	Dept. Of Theatre and Drama	University of Wisconsin - Madison	P	U
Jacob E. Loretto	Musson Theatrical Inc.	Musson Theatrical Inc.	P	DR
Daniel H. Louis	Theta Consulting LLC	Theta Consulting LLC	P	G
Wendy Manson	Cirque Du Soleil, Inc.	Cirque Du Soleil, Inc.	O	U
Joseph McGeough	Flying by Foy	Foy Inventerprises, Inc.	A	CP
Sam Michael	Thern, Inc.	Thern, Inc.	P	MP
Steven Michelman	Entertainment Project Services, LLC	Entertainment Project Services, LLC	A	DE
Orestes Mihaly	Production Resource Group	Production Resource Group	P	DR
Rick Montgomery	Motion Laboratories, Inc.	Motion Laboratories, Inc.	P	MP

Name	Company	Representing	Voting status	Int cat
John P. Moore	Vertigo	Vertigo	A	CP
Bartholomew J. Mueller	Recreation Engineering Inc.	Recreation Engineering Inc.	P	DE
Reid Neslage	H & H Specialties Inc.	H & H Specialties Inc.	P	MP
Mark Newlin	Xtreme Structures and Fabrication	Xtreme Structures and Fabrication	A	MP
Jim Niesel	Theatre Projects Consultants, Inc.	Theatre Projects Consultants, Inc.	P	DE
Richard J. Nix	Richard J. Nix	Richard J. Nix	I	G
Shawn Nolan	Production Resource Group	Production Resource Group	A	DR
Tracy Nunnally	Vertigo	Vertigo	P	CP
Carlos Ortega	PSAV Presentation Services	PSAV Presentation Services	P	U
Gregory Orth	WNP Services, Inc.	WNP Services, Inc.	P	DR
Edward A. (Ted) Paget	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	O	MP
Miriam Paschetto	Geiger Engineers	Geiger Engineers	P	G
Rocky Paulson	Stage Rigging, Inc.	Freeman Companies	A	DR
Kurt Pragman	Pragman Associates, LLC	Pragman Associates, LLC	O	G
Demian Purdy	PSAV Presentation Services	PSAV Presentation Services	A	U
Steven Ricks	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP
Mark Riddlesperger	LA ProPoint, Inc.	LA ProPoint, Inc.	O	CP
John Ringelman	Stage Rigging, Inc.	Freeman Companies	P	DR
Eric Rouse	Chicago Flyhouse	Chicago Flyhouse	P	CP
Karl G. Ruling	ESTA	ESTA	exf	G
Tim Salamon	PSAV Presentation Services	PSAV Presentation Services	O	DR
Bill Sapsis	Sapsis Rigging, Inc.	Sapsis Rigging, Inc.	P	U
Peter A. Scheu	Scheu Consulting Services, Inc.	Scheu Consulting Services, Inc.	O	DE
Chris Schmidt	Stage Rigging, Inc.	Freeman Companies	A	DR
Jason Schumacher	ZFX, Inc.	ZFX, Inc.	A	CP

Name	Company	Representing	Voting status	Int cat
Joseph S. Schuster	Simpson Gumpertz & Heger	Simpson Gumpertz & Heger	P	DE
Ford Sellers	Chauvet Lighting	Chauvet Lighting	O	MP
Steven Serafin	Chubb Group of Insurance Companies	Chubb Group of Insurance Companies	P	G
Steven C. Shaw	Levitating Productions, Inc.	Levitating Productions, Inc.	O	MP
Harold Ike Shippers	Syracuse Scenery & Stage Lighting Co., Inc.	Syracuse Scenery & Stage Lighting Co., Inc.	A	DR
Dave Sinkhorn	R&M Materials Handling / Stagemaker	R&M Materials Handling / Stagemaker	O	MP
Monica Skjonberg	Skjonberg Controls, Inc.	Skjonberg Controls, Inc.	O	CP
Knut Skjonberg	Skjonberg Controls, Inc.	Skjonberg Controls, Inc.	O	CP
John C. Snook	Thermotex Industries Inc.	Thermotex Industries Inc.	P	CP
Russell Solomon	Texas Scenic Company	Texas Scenic Company	A	DR
Todd Spencer	PSAV Presentation Services	PSAV Presentation Services	O	U
Stewart Stephens	JSAV	JSAV	P	DR
Stephen G. Surratt	Texas Scenic Company	Texas Scenic Company	P	DR
Peter V. Svitavsky	J.R. Clancy, Inc.	Wenger Corp.	P	CP
Ross Taylor	Taylor & Taylor Associates	Taylor & Taylor Associates	O	G
Jason Tello	Tyler Truss Systems	Tyler Truss Systems	P	CP
Ken Tilson	Columbus McKinnon Corp.	Columbus McKinnon Corp.	P	MP
Will Todd	Tomcat USA, Inc.	Milos Group	P	MP
James Tomlinson	Team Tomlinson	Team Tomlinson	O	G
Stephen Vanciel	IATSE Local 631	IATSE Local 631	O	U
Elmer Veith	Total Structures - Eastern US Sales Office	Total Structures, Inc.	A	MP
Steve Walker	Steve A. Walker & Associates	Steve A. Walker & Associates	P	G
Patrick Wallace	PSAV Presentation Services	PSAV Presentation Services	O	U
Mike Webb	Motion Laboratories, Inc.	Motion Laboratories, Inc.	A	MP
Charlie Weiner	Tomcat USA, Inc.	Milos Group	A	MP

Name	Company	Representing	Voting status	Int cat
Michael Wells	Xtreme Structures and Fabrication	Xtreme Structures and Fabrication	P	MP
Drew Wending	PSAV Presentation Services	PSAV Presentation Services	O	DR
Marty Wesstrom	Mountain Productions Inc.	Mountain Productions Inc.	P	DR
Jeff Wilkowski	Them, Inc.	Them, Inc.	A	MP
Greg Williams	PSAV Presentation Services	PSAV Presentation Services	O	G
R. Duane Wilson	George C. Izenour Associates	Amer. Society of Theatre Consultants	P	DE
Max A. Wilson	Applied Electronics	Applied Electronics	P	MP
Stephan Jon Wood	Stage Technologies	Tait Towers Manufacturing LLC	P	CP
Nicholas Gill Wright	I.A.T.S.E. Local 16	I.A.T.S.E. Local 16	O	G
Jeong Sik Yoo	Ghost LX	Ghost LX	O	DE
Paul Zagajeski	J.R. Clancy, Inc.	Wenger Corp.	A	CP

**Voting Status Key:** P = Principal voter, A = Alternate voter, I = Individual voter, O = Observer member, exf = Ex Officio member (staff)

**Interest Category Key:** CP = Custom-market producer, DE = Designer, DR = Dealer or rental company, G = General interest, MP = Mass-market producer, U = User