

Minutes
Rigging Working Group
Friday, 03 June 2022
19:00 – 21:00 PDT
Wyndham Anaheim

Chairpersons:

Bill Sapsis; Sapsis Rigging, Inc; P; U (presiding)
Chris Kaiser; Syracuse Scenery & Stage Lighting Co., Inc.

Recording secretaries:

Karl Ruling and Richard Nix (ESTA)

Attendees:

Jesse Adams; Rose Brand Wipers, Inc; P; DR
Dana Bartholomew; Silver State Wire Rope and Rigging; P; DR
Peter W. Batt; Mainstage Theatrical Supply, Inc; P; DR
Drew Becker; InterAmerica Stage, Inc.; A; CP
Ian Bevan; Walt Disney Company; P; DE
David Boevers; Carnegie Mellon University; P; DE
Bennett Brian; Reed Rigging Inc.; P; DR
Lee Chuong; Walt Disney Company; A; DE
Jay Cid; R&M Materials Handling / Stagemaker; P; MP
Thomas Cowdery; Thomas Cowdery; I; U
Dan Culhane; Wenger Corp.; A; CP
Bruce Darden; InterAmerica Stage, Inc.; P; CP
Robert Dean; ZFX, Inc.; P; CP
Tyler DeLong; DeLong Rigging Solutions; P; U
Jonathan Deull; JSD Projects LLC; P; U
Don Earl; Earl Girls, Inc.; P; DR
Siobhan Gee; Siobhan Gee; I; G
Ethan W Gilson; Entertainment Rigging Services, LLC; P; U
Sanford P. Gilzow; Shur-Rig LLC; P; G
Joe Golden; Gallagher Staging & Productions; P; DR
William B. Gorlin; M.G. McLaren, P.C.; P; G
Jerry Gorrell; Theatre Safety Programs; P; G
Rod Haney; I.A.T.S.E. Local 891; P; U
Tim Hansen; Oasis Stage Werks; P; DR
Jeremy Hodgson; Jeremy Hodgson; I; G
Quinten James; Flying By Troy; O; U
Joseph Jeremy; Show Distribution Group, Inc.; P; CP
Zhou Jianzhao; Guangzhou Haoyang Electronic Co., Ltd.; P; CP
Shane Kelly; Shane Kelly; I; U
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U
Ryan Kunkel; Tait Towers Manufacturing LLC; A; CP
Kyle Kusmer; Steven Schaefer Associates, Inc; P; DE
Daniel H. Louis; Theta Consulting LLC; P; G
Cole Muth; Electronic Theatre Controls, Inc.; A; MP
Reid Neslage; Texas Scenic Company; A; MP
Tracy Nunnally; Vertigo; P; CP
Stefan Pries; NEP Live Events; P; DR
John Ringelman; Freeman Companies; P; DR
Eric Rouse; Entertainment Project Services, LLC; P; CP
Mike Skinner; Contract Services Administration Trust Fund; P; U
Todd Spencer; Ventana Capital Investments LLC; P; G
Troy Trinkle; Troy Trinkle, LLC; P; CP
Elmer Veith; Reliable Design Services; P; CP
Nathan Villines; Tyler Truss Systems; P; MP
Steve Walker; Steve A. Walker & Associates; P; G
Charlie Weiner; Eurotruss; O; MP
Mike Weston; Encore; P; U
R. Duane Wilson; Amer. Society of Theatre Consultants; P; DE

Allen Winzler; Entertainment and Rigging Engineering; P; DE
Stephan Jon Wood; Tait Towers Manufacturing LLC; P; CP
Andrew Young; Andrew Young; O; U

Visitors:

Ben Adams
Miguel Guillen; Reliable Design Services

1 Opening Remarks

Bill Sapsis called the meeting to order at 19:05, welcoming everyone to the meeting and thanking them for their time.

2 Patent and anti-trust statements

2.1 Reading of the anti-trust statement

Bill Sapsis read the following statement aloud to the assembly:

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 an ESTA meeting, please bring your concern to ESTA management. An easy to read pamphlet describing the antitrust laws is available from the ESTA staff.

2.2 Reading of the call for patents

Bill Sapsis read the following statement aloud to the assembly:

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 protected 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.

3 Attendance and Membership

3.1 Requirements for membership

Bill Sapsis read the following statement aloud to the assembly:

Membership is open to all parties who are affected by the work of the group; membership in ESTA is not a requirement, but there is a \$100/person/year participation fee to help fund the costs of running the Technical Standards Program. Voting members are required to attend meetings and vote on letter ballots. Any principal member and alternate that both miss three consecutive meetings or that miss three consecutive letter ballots will have their membership status changed to observer. This action will be taken at the beginning of the first meeting after such inaction and will be recorded in the minutes of that meeting.

3.2 Introduction of attendees

3.3 Determination of a quorum

(There are 73 voting entities. A quorum is 25, a supermajority is 37.)

Richard Nix confirmed that the requirements for both a quorum and a supermajority were met.

3.4 Processing of new membership and status change requests

The following applications or status change requests have been received:

Jerald Kraft; Electronic Theatre Controls, Inc; A; MP (new application) OBSERVER
Reid Neslage; Texas Scenic Company; A; MP (change of representation)
Patrick Stewart; Patrick Stewart; I; U (new application) OBSERVER
Thomas Cowdery; Thomas Cowdery; I; U (change of representation)
Donald Scott; SEI/ASCE; I; DE (new application) OBSERVER

Dan Culhane moved to approve those who are present as applied, and those not present as Observers. The motion was seconded and carried without objection or abstention.

3.5 Changes to observer status due to lack of attendance or missed letter ballots

3.5.1 Attendance notices

The following voters have missed two consecutive meetings, and their status will be changed to that of Observer if this meeting is missed:

William B. Gorlin; M.G. McLaren, P.C.
 Jason Tello; T6 Truss Designs, LLC

Bill Gorlin was present. Jason Tello was not present, so his status was changed accordingly.

3.5.2 Letter ballot notices

The following voters have missed the last two letter ballots and will be moved to Observer status if the next letter ballot is missed.

There are none.

3.5.3 Automatic status changes occurring before this meeting

The following automatic status changes have occurred since the last meeting.

Reid Neslage; H & H Specialties, Inc (see change of representation above)

3.6 Consensus body

The consensus body, after today's working group meeting's actions, is as follows:

Name	Representing	Status	Int Cat
Ryan Riordan	Accurate Staging, Inc.	P	CP
Brent Armstrong	Alpine Rigging & Structural Design	P	CP
R. Duane Wilson	Amer. Society of Theatre Consultants	P	DE
Peter A. Scheu	Amer. Society of Theatre Consultants	A	DE
Max A. Wilson	Applied Electronics	P	MP
Jon Lenard	Applied Electronics	A	MP
Will Todd	Area Four Industries	P	MP
Keith Bohn	Area Four Industries	A	MP
Neil Montour	Atlanta Rigging Systems	P	DR
David Boevers	Carnegie Mellon University	P	DE
Ed Leahy	Chicago Flyhouse, Inc	P	CP
Jeffrey M. Reder	Clark-Reder Engineering, Inc.	P	G
Shawn Nolan	Clark-Reder Engineering, Inc.	A	G
Ken Tilson	Columbus McKinnon Corp.	P	MP
Nick Fleming	Columbus McKinnon Corp.	A	MP
Mike Skinner	Contract Services Administration Trust Fund	P	U
Chris Moulton	Contract Services Administration Trust Fund	A	U
Thomas Cowdery	Thomas Cowdery	I	U
Jordi Van Berkum	Cybermotion North America	P	DR
Tyler DeLong	DeLong Rigging Solutions	P	U

Name	Representing	Status	Int Cat
Don Earl	Earl Girls, Inc.	P	DR
Steven Ricks	Electronic Theatre Controls, Inc.	P	MP
Michael Lichter	Electronic Theatre Controls, Inc.	A	MP
Cole Muth	Electronic Theatre Controls, Inc.	A	MP
Mike Weston	Encore	P	U
Allen Winzler	Entertainment and Rigging Engineering	P	DE
Eric Rouse	Entertainment Project Services, LLC	P	CP
Joseph Champelli	Entertainment Project Services, LLC	A	CP
Joshua "Fritz" Friedensohn	Entertainment Project Services, LLC	A	CP
Ethan W Gilson	Entertainment Rigging Services, LLC	P	U
John Ringelman	Freeman Companies	P	DR
Chris Schmidt	Freeman Companies	A	DR
Gert Jan Brouwer	Frontline Rigging & Motion B.V.	P	CP
Joe Golden	Gallagher Staging & Productions	P	DR
Miriam Paschetto	Geiger Engineers	P	DE
Ted Jones	Grand Stage	P	U
Zhou Jianzhao	Guangzhou Haoyang Electronic Co., Ltd.	P	CP
Robert Haycock	Robert Haycock	I	U
Pat Grenfell	Hoist Sales & Service	P	DR
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
Rod Haney	I.A.T.S.E. Local 891	P	U
Ross Long	I.A.T.S.E. Local 891	A	U
Patrick Bash	In-House Production	P	DR
Bruce Darden	InterAmerica Stage, Inc.	P	CP
Drew Becker	InterAmerica Stage, Inc.	A	CP
Jeremy Hodgson	Jeremy Hodgson	I	G
Jonathan Deull	JSD Projects LLC	P	U
William B. Gorlin	M.G. McLaren, P.C.	P	G
Peter W. Batt	Mainstage Theatrical Supply, Inc	P	DR
Mike Garl	Mike Garl Consulting LLC	P	DE
Rick Montgomery	Motion Laboratories, Inc.	P	MP
Mike Webb	Motion Laboratories, Inc.	A	MP
Michael Shaw	Motion Laboratories, Inc.	A	MP
Stefan Pries	NEP Live Events	P	DR
Tim Hansen	Oasis Stage Werks	P	DR
Orestes Mihaly	Production Resource Group	P	DR
Troy Atkinson	Production Resource Group	A	DR
Matt Jordan	Production Resource Group	A	DR
Jay Cid	R&M Materials Handling / Stagemaker	P	MP
Bartholomew J. Mueller	Recreation Engineering Inc.	P	DE
Bennett Brian	Reed Rigging Inc.	P	DR
Elmer Veith	Reliable Design Services	P	CP
Matt Panther	Reliable Design Services	A	CP
Richard J. Nix	Richard J. Nix	I	G
Jesse Adams	Rose Brand Wipers, Inc	P	DR
Stewart Stephens	S2 Technologies	P	G
Darren Coats	Safety Factor Training and Consulting	P	U

Name	Representing	Status	Int Cat
Bill Sapsis	Sapsis Rigging, Inc.	P	U
Shane Kelly	Shane Kelly	I	U
Joseph Jeremy	Show Distribution Group, Inc.	P	CP
Bill McIntyre	Show Distribution Group, Inc.	A	CP
Sanford P. Gilzow	Shur-Rig LLC	P	G
Dana Bartholomew	Silver State Wire Rope and Rigging	P	DR
Siobhan Gee	Siobhan Gee	I	G
Steve Walker	Steve A. Walker & Associates	P	G
Kyle Kusmer	Steven Schaefer Associates, Inc	P	DE
Mike Merz	Steven Schaefer Associates, Inc	A	DE
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
David Bond	Tait Towers Manufacturing LLC	A	CP
Ryan Kunkel	Tait Towers Manufacturing LLC	A	CP
Tony Diemont	Texas Scenic Company	P	DR
Russell Solomon	Texas Scenic Company	A	DR
Read Neslage	Texas Scenic Company	A	DR
Steven Serafin	The Hartford Group	P	G
Jim Niesel	Theatre Projects Consultants, Inc.	P	DE
Jerry Gorrell	Theatre Safety Programs	P	G
Sam Michael	Thern, Inc.	P	MP
Jeff Wilkowski	Thern, Inc.	A	MP
Paul Brunner	Thern, Inc.	A	MP
Daniel H. Louis	Theta Consulting LLC	P	G
Troy Trinkle	Troy Trinkle, LLC	P	CP
Nathan Villines	Tyler Truss Systems	P	MP
Bill Edwards	Tyler Truss Systems	A	MP
Josh Conner	Tyler Truss Systems	A	MP
Todd Spencer	Ventana Capital Investments LLC	P	G
Tracy Nunnally	Vertigo	P	CP
John P. Moore	Vertigo	A	CP
Ian Bevan	Walt Disney Company	P	DE
Lee Chuong	Walt Disney Company	A	DE
Peter V. Svitavsky	Wenger Corp.	P	CP
Dan Culhane	Wenger Corp.	A	CP
Paul Zagajeski	Wenger Corp.	A	CP
Michael Wells	Xtreme Structures and Fabrication	P	MP
Mark Newlin	Xtreme Structures and Fabrication	A	MP
Theresa Lovell	Xtreme Structures and Fabrication	A	MP
Robert Dean	ZFX, Inc.	P	CP
Total consensus votes:			73
Votes by interest category	Custom market producers (CP):		14
	Mass market producers (MP):		9
	Designers (DE):		9
	Dealer or rental company (DR):		16
	User (U):		13

Name	Representing	Status	Int Cat
		General Interest (G):	12

4 Approval of the minutes from the last meeting

[See [RWGmin03-2022_DRAFT.pdf](#)]

Dan Culhane moved to approve the minutes. The motion was seconded and carried without objection or abstention.

5 Approval of agenda

Dan Culhane moved to approve the agenda. The motion was seconded and carried without objection or abstention.

6 Old Business

6.1 ANSI E1.1 – 2018, Wire Rope Ladders (Reaffirm, revise, or withdraw by 27 September 2023)

6.2 ANSI E1.2 - 2021, Entertainment Technology - Design, Manufacture and Use of Aluminum Trusses and Towers (Reaffirm, revise, or withdraw by 06 May 2026).

6.3 BSR E1.4-1 - 202x, Entertainment Technology--Manual Counterweight Rigging Systems (Open for revision) *Task group members:* Richard Nix (Leader), Bruce Darden, Dan Culhane, Eric Rouse, Jim Niesel, Pat Grenfell, Peter Batt, Peter Scheu, Reid Neslage, Sam Michael, Ted Jones
[See [BSR_E1.4-1-202x_PR2_Cmmnt_Summry_None.pdf](#)]

It was in public review until 22 March 2022. No comments were received. Anticipate a motion to accept as an American National Standard.

Bruce Darden moved to approve as an ANS. The motion was seconded, and will go to a letter ballot.

6.4 ANSI E1.4-2 - 2021, Entertainment Technology—Statically Suspended Rigging Systems (Reaffirm, revise, or withdraw by 06 May 2026.)

6.5 ANSI E1.4-3 - 2020, Entertainment Technology - Manually Operated Hoist Rigging Systems (Reaffirm, revise, or withdraw before 02 June 2025)

6.6 ANSI E1.6-1 - 2021, Entertainment Technology--Powered Hoist Systems (Reaffirm, revise, or withdraw before 10 May 2024)

6.7 ANSI E1.6-2 - 2020, Entertainment Technology--Design, Inspection, and Maintenance of Electric Chain Hoists for the Entertainment Industry (Reaffirm, revise, or withdraw before 14 August 2025)

6.8 ANSI E1.6-3 - 2019, Selection and Use of Serially Manufactured Chain Hoists in the Entertainment Industry (Reaffirm, revise, or withdraw 07 October 2024)

6.9 BSR E1.6-4 - 202x, Design, Manufacture, and Inspection of Portable Controls for Electric Chain Hoists in the Entertainment Industry (Open for revision) *Task group members:* David Bond, Rod Haney, Rick Montgomery, John Ringelman, Elmer Veith, Jem Hodgson, Stephen Wood, Mike Webb, and Joe Jeremy (leader).
[See [BSR_E1.6-4-202x_PR1_Cmmnt_Summry_None.pdf](#)]

It was in public review until 22 March 2022. No comments were received. Anticipate a motion to accept as an American National Standard.

Joe Golden moved to approve as an ANS. The motion was seconded, and will go to a letter ballot.

6.10 BSR E1.6-5, Selection and Use of Portable Controls for Electric Chain Hoists in the Entertainment Industry *Task group members:* David Bond, Rod Haney, Rick Montgomery, John Ringelman, Elmer Veith, Jem Hodgson, Stephen Wood, Mike Webb, and Joe Jeremy (leader).
[See [BSR_E1.6-5-202x_PR1_Cmmnt_Summry_None.pdf](#)]

It was in public review until 22 March 2022. No comments were received. Anticipate a motion to accept as an American National Standard.

Bruce Darden moved to approve as an ANS. The motion was seconded, and will go to a letter ballot.

Joe Jeremy extended thanks to all of the task group members for their effort. Elmer Veith extended in-kind thanks to Joe Jeremy for his extraordinary ability at herding cats for a very complex project.

6.11 ANSI E1.8 – 2018, Entertainment Technology—Loudspeaker Enclosures Intended for Overhead Suspension—Classification, Manufacture and Structural Testing (Reaffirm, revise, or withdraw by 29 November 2023)

6.12 ANSI E1.15 - 2006 (R2021), Entertainment Technology--Recommended Practices and Guidelines for the Assembly and Use of Theatrical Boom & Base Assemblies (Reaffirm, revise, or withdraw before 08 March 2026)

6.13 BSR E1.21 - 202x, Entertainment Technology — Temporary Structures Used for Technical Production of Outdoor Entertainment Events (open for revision) *Task group members:* Richard Nix (task group leader), Bill Gorlin, Dan Louis, Sandy Gilzow, Kyle Kusmer, Elmer Veith, Ryan Riordan, Joe Golden, Shawn Nolan, Allen Winzler, and Donald Scott.

Any news or updates?

Richard Nix reported on proposed change to the IBC that would affect this standard. That change would require changes to this standard. It affects design wind loads and seismic loading. He noted that Don Scott, who had applied to the working group today, was a primary proponent of the code change proposal. He asked if Bill Sapsis would please appoint him to the task group. Bill Sapsis did so.

Bill Gorlin said this is actually a good development in that our industry is now being recognized in the code world, and asked if Richard would provide links for commenting on the code change proposal. Richard said he would send links to the working group.

6.14 ANSI E1.22 - 2022, Entertainment Technology - Fire Safety Curtain Systems (Reaffirm, revise, or withdraw by 25 April 2027).

It's published!

6.15 ANSI E1.39 - 202x, Entertainment Technology –Selection and Use of Personal Fall Arrest Systems on Portable Structures Used in the Entertainment Industry (Reaffirm, revise, or withdraw by 06 May 2026).

6.16 BSR E1.43 - 202x, Live performer flying effect standard (Open for revision) *Task group members:* Eric Rouse (task group leader), Jonathan Duell, Ryan Kunkel, Robert Dean, Tracy Nunnally, Bill Gorlin, Fred Caron, and Stewart Stephens.

[See E1.43 Cover Note June 2022.docx and June 1 - E1-43 PerformerFlyingSystems RWG submission DRAFT.pdf]

Any news or updates?

Eric Rouse reported, first thanking the task group for their efforts, then drawing everyone's attention to the updates that were sent the prior day. He said that this revision is significant, and asked everyone to please read the current draft with a critical eye.

Bill Sapsis reminded everyone that this is a high-profile project, and also expressed the importance of having the working group's thorough review.

6.17 Rigging Glossary

Chris Kaiser (leader), David Boevers, Tom Cowdery, Siobhan Gee, Ted Jones, Mike Wells

Any news or updates?

Chris Kaiser reported that the document is currently on hold due to workloads.

6.18 ANSI E1.47 – 2020, Recommended Guidelines for Entertainment Rigging System Inspections
(Reaffirm, revise or withdraw before 18 June 2025)

Any news or updates?

6.19 ANSI E1.50-1 – 2017, Requirements for the Structural Support of Temporary LED, Video & Display Systems (Reaffirm, revise or withdraw by 14 August 2022)

Any news or updates? Something must be done at this meeting.

Bruce Darden moved to change Charlie Weiner's status back to voting. Seconded and carried.

Charlie Weiner moved to open the standard for revision. The motion was seconded and carried without objection or abstention. Bill Sapsis appointed Charlie Weiner (Task group leader), Stefan Pries, Siobhan Ghee, Joe Golden, Sandy Gilzow, Steve Walker, and Richard Nix.

A PINS form will be filed with ANSI.

6.20 ANSI E1.56 - 2018, Rigging Support Points Design, Fabrication, Installation, and Testing (Reaffirm, revise or withdraw by 06 November 2023)

6.21 ANSI E1.67 – 2021, Design, Inspection, Maintenance, Selection, and Use of Hand-operated Chain- and Lever Hoists for the Entertainment Industry (Reaffirm, revise, or withdraw by 06 May 2026).

6.22 BSR E1.70 – 202x, Selection and Use of Ground Supported Winch Stands and Towers in the Entertainment Industry *Task group members:* Jacob Abbott, Ethan Gilson (task group leader), Eric Rouse, Will Todd, Elmer Veith, Ryan Riordan, and Max Wilson

Any news or action?

Ethan Gilson reported that Will Todd had reached out to some European constituents regarding a draft DIN standards project to see if they would be willing to share, and did not get a welcome response. Ethan said the CEN/TC 433W1 working group is working on this, and that he will also reach out to them in an effort to harmonize the two efforts.

7 New business

Tracey Nunnally asked a procedural question about why the year version number for E1.6-1 was not on the same 5-year revision cycle as the other standards. Bruce Darden noted that it had been opened for a limited revision a couple of years ago. Richard Nix concurred, and explained that the limited revision did not change the need for the required 5-year action of reaffirmation or revision, from the last date the entire document was approved.

8 Other business and announcements

8.1 Above & Beyond Awards

Information on the Above & Beyond Awards may be found at http://tsp.esta.org/tsp/news/award_recipients.html. The nomination site is open year round, and the award is designed for members to highlight the work of their peers. The deadline for nominations is 01 November.

9 Schedule for future meetings

The meeting schedule is posted at <http://www.esta.org/ESTA/meetings.php>.

The fall meeting is scheduled for Saturday 17 September 2022, returning to the Marriott D/FW Westlake (formerly known as the Marriott Solana), in Westlake, TX.

The Winter meetings will be held online, in January 2023.

10 Adjournment

The agenda being completed, there being no further business brought forth, Bill Sapsis adjourned the meeting at 20:06.

Rigging Working Group members as of 03 June 2022

Name	Representing	Status	Int cat
Jacob Abbott	PSAV Presentation Services	O	U
Jesse Adams	Rose Brand Wipers, Inc	P	DR
Matthew Antonucci	Contract Services Administration Trust Fund	O	U
Brent Armstrong	Alpine Rigging & Structural Design	P	CP
Troy Atkinson	Production Resource Group	A	DR
William Ian Auld	Auld Entertainment	O	U
Robert Barbagallo	Solotech Inc.	O	DR
Dana Bartholomew	Silver State Wire Rope and Rigging	P	DR
Patrick Bash	In-House Production	P	DR
Peter W. Batt	Mainstage Theatrical Supply, Inc	P	DR
William Beautyman	Limelight Productions, Inc.	O	DR
Drew Becker	InterAmerica Stage, Inc.	A	CP
Justin Bennett	University of the Incarnate Word	O	U
Jordi Van Berkum	Cybermotion North America	P	DR
Ian Bevan	Walt Disney Company	P	DE
Roy Bickel	Roy Bickel	O	G
Tyler Bland	Walt Disney Company	O	U
David Boevers	Carnegie Mellon University	P	DE
Keith Bohn	Area Four Industries	A	MP
David Bond	Tait Towers Manufacturing LLC	A	CP
Bennett Brian	Reed Rigging Inc.	P	DR
Gert Jan Brouwer	Frontline Rigging & Motion B.V.	P	CP
Paul Brunner	Thern, Inc.	A	MP
David M. Campbell	Geiger Engineers	O	G
Frederic Caron	Frederic Caron	O	U
Joseph Champelli	Entertainment Project Services, LLC	A	CP
Lee Chuong	Walt Disney Company	A	DE
Jay Cid	R&M Materials Handling / Stagemaker	P	MP
Daniel J. Clark	Clark-Reder Engineering, Inc.	O	G
Darren Coats	Safety Factor Training and Consulting	P	U
Josh Conner	Tyler Truss Systems	A	MP
Thomas Cowdery	Thomas Cowdery	I	U
Brandon Cox	Heavyweight Solutions	O	CP
Dan Culhane	Wenger Corp.	A	CP
Bruce Darden	InterAmerica Stage, Inc.	P	CP
David Darland	PSAV Presentation Services	O	U
Robert Dean	ZFX, Inc.	P	CP
Tyler DeLong	DeLong Rigging Solutions	P	U

Rigging Working Group members as of 03 June 2022

Name	Representing	Status	Int cat
Jonathan Deull	JSD Projects LLC	P	U
Tony Diemont	Texas Scenic Company	P	DR
Jim Digby	Event Safety Alliance	O	U
Brad Dittmer	Stage Labor of the Ozarks	O	U
Russ Dusek	I Weiss	O	MP
Don Earl	Earl Girls, Inc.	P	DR
Bill Edwards	Tyler Truss Systems	A	MP
Jennifer Ferguson	Kito Group	O	MP
Nick Fleming	Columbus McKinnon Corp.	A	MP
Tim Franklin	Theta Consulting LLC	O	G
Joshua "Fritz" Friedensohn	Entertainment Project Services, LLC	A	CP
Mike Garl	Mike Garl Consulting LLC	P	DE
James M. Garner	Walt Disney Company	O	G
Siobhan Gee	Siobhan Gee	I	G
Ethan W Gilson	Entertainment Rigging Services, LLC	P	U
Sanford P. Gilzow	Shur-Rig LLC	P	G
Joe Golden	Gallagher Staging & Productions	P	DR
Tiny Good	Showtech Australia	O	U
William B. Gorlin	M.G. McLaren, P.C.	P	G
Jerry Gorrell	Theatre Safety Programs	P	G
Michael P. Gosenski	Rigging Systems LLC	O	U
Pat Grenfell	Hoist Sales & Service	P	DR
Phillip R. Hampton	Charcoalblue	O	DE
Rod Haney	I.A.T.S.E. Local 891	P	U
Tim Hansen	Oasis Stage Werks	P	DR
Sean Harding	Port Lighting Systems	O	G
Robert Haycock	Robert Haycock	I	U
Chris Higgs	Total Solutions Group	O	G
Jeremy Hodgson	Jeremy Hodgson	I	G
Donald Hoffend_III	Avista Designs, LLC	O	G
Quinten James	Flying By Troy	O	U
Joseph Jeremy	Show Distribution Group, Inc.	P	CP
Zhou Jianzhao	Guangzhou Haoyang Electronic Co., Ltd.	P	CP
Ted Jones	Grand Stage	P	U
Matt Jordan	Production Resource Group	A	DR
Christine L. Kaiser	Syracuse Scenery & Stage Lighting Co., Inc.	P	DR
Shane Kelly	Shane Kelly	I	U

Rigging Working Group members as of 03 June 2022

Name	Representing	Status	Int cat
Jerald Kraft	Electronic Theatre Controls, Inc	A	MP
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
Ryan Kunkel	Tait Towers Manufacturing LLC	A	CP
Kyle Kusmer	Steven Schaefer Associates, Inc	P	DE
Ed Leahy	Chicago Flyhouse, Inc	P	CP
Jon Lenard	Applied Electronics	A	MP
Phillip Lewis	Tait Towers Manufacturing LLC	O	CP
Paul "Luke" Lewkowicz	Paul E Lewkowicz PC	O	DE
Michael Lichter	Electronic Theatre Controls, Inc.	A	MP
Ross Long	I.A.T.S.E. Local 891	A	U
Jacob E. Loretto	Musson Theatrical Inc.	O	DR
Daniel H. Louis	Theta Consulting LLC	P	G
Theresa Lovell	Xtreme Structures and Fabrication	A	MP
Wendy Manson	Wendy Manson	O	G
Ryan McAlpine	Foy Inventerprises, Inc.	O	DR
Bill McIntyre	Show Distribution Group, Inc.	A	CP
Mike Merz	Steven Schaefer Associates, Inc	A	DE
Sam Michael	Thern, Inc.	P	MP
Steven Michelman	Entertainment Project Services, LLC	O	CP
Orestes Mihaly	Production Resource Group	P	DR
Rick Montgomery	Motion Laboratories, Inc.	P	MP
Neil Montour	Atlanta Rigging Systems	P	DR
John P. Moore	Vertigo	A	CP
Chris Moulton	Contract Services Administration Trust Fund	A	U
Bartholomew J. Mueller	Recreation Engineering Inc.	P	DE
Cole Muth	Electronic Theatre Controls, Inc.	A	MP
John Neal	Rhino Staging	O	G
Reid Neslage	Texas Scenic Company	A	MP
Mark Newlin	Xtreme Structures and Fabrication	A	MP
Jim Niesel	Theatre Projects Consultants, Inc.	P	DE
Richard J. Nix	Richard J. Nix	I	G
Shawn Nolan	Clark-Reder Engineering, Inc.	A	G
Tracy Nunnally	Vertigo	P	CP
Gregory Orth	WNP Services, Inc.	O	DR
Matt Panther	Reliable Design Services	A	CP
Miriam Paschetto	Geiger Engineers	P	DE
Kurt Pragman	Pragman Associates, LLC	O	G
Stefan Pries	NEP Live Events	P	DR

Rigging Working Group members as of 03 June 2022

Name	Representing	Status	Int cat
Demian Purdy	PSAV Presentation Services	O	U
Jeffrey M. Reder	Clark-Reder Engineering, Inc.	P	G
Luke Ricca	Luke Ricca	O	G
Steven Ricks	Electronic Theatre Controls, Inc.	P	MP
Mark Riddlesperger	LA ProPoint, Inc.	O	CP
John Ringelman	Freeman Companies	P	DR
Ryan Riordan	Accurate Staging, Inc.	P	CP
Ryan Roby	Ryan Roby	O	U
Eric Rouse	Entertainment Project Services, LLC	P	CP
Tim Salamon	PSAV Presentation Services	O	DR
Bill Sapsis	Sapsis Rigging, Inc.	P	U
Peter A. Scheu	Amer. Society of Theatre Consultants	A	DE
Chris Schmidt	Freeman Companies	A	DR
Donald Scott	Structural Engineering Institute of ASCE	O	DE
Ford Sellers	Chauvet Lighting	O	MP
Steven Serafin	The Hartford Group	P	G
Michael Shaw	Motion Laboratories, Inc.	A	MP
Harold Ike Shippers	Syracuse Scenery & Stage Lighting Co., Inc.	A	DR
Mike Skinner	Contract Services Administration Trust Fund	P	U
Monica Skjonberg	Skjonberg Controls, Inc.	O	CP
Knut Skjonberg	Skjonberg Controls, Inc.	O	CP
John C. Snook	Thermotex Industries Inc.	O	CP
Lynn M. Snook	Thermotex Industries Inc.	O	CP
Russell Solomon	Texas Scenic Company	A	DR
Todd Spencer	Ventana Capital Investments LLC	P	G
Stewart Stephens	S2 Technologies	P	G
Patrick Stewart	Patrick Stewart	O	U
Peter V. Svitavsky	Wenger Corp.	P	CP
Ross Taylor	Taylor & Taylor Associates	O	G
Jason Tello	T6 Truss Designs. LLC	O	CP
Ken Tilson	Columbus McKinnon Corp.	P	MP
Will Todd	Area Four Industries	P	MP
Troy Trinkle	Troy Trinkle, LLC	P	CP
Stephen Vanciel	IATSE Local 631	O	U
Elmer Veith	Reliable Design Services	P	CP
Nathan Villines	Tyler Truss Systems	P	MP
Steve Walker	Steve A. Walker & Associates	P	G
Patrick Wallace	PSAV Presentation Services	O	U

Rigging Working Group members as of 03 June 2022

Name	Representing	Status	Int cat
Mike Webb	Motion Laboratories, Inc.	A	MP
Charlie Weiner	Eurotruss	O	MP
Michael Wells	Xtreme Structures and Fabrication	P	MP
Drew Wending	PSAV Presentation Services	O	DR
Marty Wesstrom	Mountain Productions Inc.	O	DR
Mike Weston	Encore	P	U
Jeff Wilkowski	Thern, Inc.	A	MP
Greg Williams	PSAV Presentation Services	O	G
R. Duane Wilson	Amer. Society of Theatre Consultants	P	DE
Max A. Wilson	Applied Electronics	P	MP
Allen Winzler	Entertainment and Rigging Engineering	P	DE
Stephan Jon Wood	Tait Towers Manufacturing LLC	P	CP
Jeong Sik Yoo	Ghost LX	O	DE
Andrew Young	Andrew Young	O	U
Paul Zagajeski	Wenger Corp.	A	CP