

MINUTES
RIGGING WORKING GROUP

March 24, 1999
Royal York Hotel
Toronto, Ontario
Canada

Chairman: Mike Garl; James Thomas Engineering; Principal; Producer

Recording Secretary: Karl G. Ruling, ESTA

Members in attendance: Steve Butner; Aerial Rigging & Leasing, Inc.; Principal; Producer
Brad Dittmer; Associated Theatrical Contractors; Principal; User
Diane Summers; ATM Group, Inc.; Alternate; Producer (joined at this meeting)
Lee J. Bloch; Bloch Design Group Inc.; Observer; General interest (joined at this meeting)
Ted Jones; Chicago Spotlight, Inc.; Observer; User
Wally Blount; CM Lodestar; Principal; Producer
Jim Krull; CM Lodestar; Alternate; Producer
Ron Fogel; Creative Realities, Inc.; Principal; General interest
Reid Neslage; H & H Specialties Inc.; Principal; Producer
Edwin S. Kramer; IATSE, Local 1; Principal; User
Rodney F. Kaiser; J.R. Clancy Inc.; Principal; Producer
Thomas S. Young; J.R. Clancy Inc.; Alternate; Producer (joined at this meeting)
Jay O. Glerum; Jay O. Glerum & Associates, Inc.; Principal; User
Andrew Smith; Jeamar Winches Inc.; Principal; Producer
George Stingel; Kleege Industries; Principal; User
Tim Hansen; Oasis Stage Werks; Principal; User
Frederick L. Smith; Olaf Sööt Associates; Principal; Producer (joined at this meeting)
Tim Cox; PLASA; Principal; General interest
Teddy Van Bommel; PRG Lighting Division; Principal; User
Richard Nix; Sacramento Theatrical Lighting; Principal; General interest
Bill Sapsis; Sapsis Rigging, Inc.; Principal; User
Jon Lagerquist; South Coast Repertory; Observer; User
Rocky Paulson; Stage Rigging, Inc.; Principal; User
Jerry Gorrell; Theatre Safety Programs; Principal; General interest

1 Opening Remarks

Mike Garl called the meeting to order at 7:02 p.m.

2. Attendance and Membership

2.1 Introduction of Those Present

Those present introduced themselves.

2.2 Call for Quorum 8 needed.

Mike Garl noted that we clearly had a quorum.

2.3 Requirements for Membership

Mike Garl reminded the group that, in addition to the attendance requirement stated below, voting members have a duty to respond to letter ballots. If a voting member misses two ballots in a row, he or she will be warned. If they miss a third ballot they will be changed to observer.

Attendance requirement: Every principal member of the working group is required to attend meetings. Any principal member or voting alternate who misses 3 consecutive meetings will have their membership status changed from principal member to observer. This action will be taken as the last item of business at each meeting and recorded in the minutes of that meeting.

3 Processing of New Membership Requests

The following people applied to join at this meeting:

Lee Bloch; Bloch Design Group Inc.; Observer; General interest
Fred Smith; Olaf Sööt Associates; Principal; Producer
Thomas Young; J.R. Clancy Inc.; Alternate; Producer
Diane Summers; ATM Group, Inc.; Alternate; Producer
Michael Akrep; Polar Focus, Inc.; Observer; Producer

Bill Sapsis moved that the applications be accepted. Brad Dittmer seconded. Unanimous by show of hands.

4 Approval of Minutes from the Previous Meeting

Jay Glerum moved that the minutes be accepted as written. Ron Fogel seconded. Unanimous by show of hands.

5 ESTA Declarations

Mike Garl directed group to read the statements reprinted below in 5.1 and 5.2. He briefly explained the statements to the group.

5.1 Anti-Trust Statement:

The ESTA Board of Directors, the Technical Standards Committee, and the leadership of this Working Group will reject or nullify any actions that restrain trade. Anyone who feels that an action restraining trade is being or has been taken is requested to bring the matter to the attention of the chair immediately. Anyone who feels that actions in restraint of trade have been taken and not properly annulled is requested to notify the TSC chair or ESTA president immediately.

ESTA legal counsel has informed us that any member of this working group maybe found individually liable for any action that restrains trade taken by this working group. An individual convicted of a violation of the Sherman Act may be fined as much as \$100,000 and be imprisoned for up to three years. An easy to read pamphlet describing restraint of trade is available from the Technical Standards Committee.

5.2 Call for Patents:

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

In keeping with the open disclosure policy, I ask if anyone present wishes to notify the working group of the existence of a patent that might protect material in a standard being developed by the working group. You need not be the holder of the patent in order to notify the working group of its existence.

6 Approval of Agenda

Eddie Kramer moved that the agenda be approved as written. Ron Fogel seconded. Unanimous by show of hands.

7 Old Business

7.1 E1.1 - Wire Rope Ladder Standard – Comment Resolution

The comment resolutions Rocky Paulson offered to the group were sent to the group fewer than two weeks before the meeting. Because of the lack of advance reading time, per the P&P, the working group could vote to table discussion of the resolutions, take action on the resolutions by letter ballot, or agree to discuss the resolutions and take action as long as there were no objections. Jay Glerum moved that we discuss the document at this meeting. Ron Fogel seconded. Unanimous.

Bill Sapsis moved that we accept the resolutions as written. Steve Butner seconded. [The resolutions, Rig/99-2007, are appended to these minutes.]

By roll call:

Company	Name	Voting status	Accept	Accept in principle	Accept in part	Reject	Abstain	Comments
Aerial Rigging & Leasing, Inc.	Steve Butner	P	X					
Associated Theatrical Contractors	Brad Dittmer	P	X					
ATM Group, Inc.	Diane Summers	A	X					
BML Inc.	Eric Todd	P						
CM Lodestar	Wally Blount	P	X					
Creative Realities, Inc.	Ron Fogel	P	X					
H & H Specialties Inc.	Reid Neslage	P	X					
IATSE, Local 1	Edwin S. Kramer	P	X					
J.R. Clancy Inc.	Rodney F. Kaiser	P	X					
James Thomas Engineering, Inc.	Mike Garl	P	X					
Jay O. Glerum & Associates, Inc.	Jay O. Glerum	P	X					
Jeamar Winches Inc.	Andrew Smith	P	X					
John R. Burgess	John R. Burgess	P						
Kleege Industries	George Stingel	P	X					
Lift-All Co., Inc.	Mark Herman	P						
Oasis Stage Werks	Tim Hansen	P	X					
Olaf Sööt Associates	Frederick L. Smith	P	X					
PLASA	Tim Cox	P	X					
PRG Lighting Division	Teddy Van Bommel	P	X					
Sacramento Theatrical Lighting	Richard Nix	P	X					
Sapsis Rigging, Inc.	Bill Sapsis	P	X					
Stage Rigging, Inc.	Rocky Paulson	P	X					
Theatre Safety Programs	Jerry Gorrell	P	X					
Tomcat USA, Inc.	Keith Bohn	P						
Total Fabrications Ltd.	Peter Hind	P						
			20	0	0	0	0	

Twenty "accept" and no negative votes. (Five voting members were not present at the meeting, and are shown in gray.) The motion passed unanimously with a clear super-majority.

Mike Garl noted that none of the resolutions require making substantive changes to the document. The changes are all editorial.

Jerry Gorrell moved that the document, with the editorial changes noted in the resolutions, be sent to ANSI for approval as an American National Standard. Eddie Kramer seconded. By roll call ballot:

Company	Name	Voting status	Accept	Accept in principle	Accept in part	Reject	Abstain	Comments
Aerial Rigging & Leasing, Inc.	Steve Butner	P	X					
Associated Theatrical Contractors	Brad Dittmer	P	X					
ATM Group, Inc.	Diane Summers	A	X					
BML Inc.	Eric Todd	P						
CM Lodestar	Wally Blount	P	X					
Creative Realities, Inc.	Ron Fogel	P	X					
H & H Specialties Inc.	Reid Neslage	P	X					
IATSE, Local 1	Edwin S. Kramer	P	X					
J.R. Clancy Inc.	Rodney F. Kaiser	P	X					
James Thomas Engineering, Inc.	Mike Garl	P	X					
Jay O. Glerum & Associates, Inc.	Jay O. Glerum	P	X					
Jeamar Winches Inc.	Andrew Smith	P	X					
John R. Burgess	John R. Burgess	P						
Kleege Industries	George Stingel	P	X					
Lift-All Co., Inc.	Mark Herman	P						
Oasis Stage Werks	Tim Hansen	P	X					
Olaf Sööt Associates	Frederick L. Smith	P	X					
PLASA	Tim Cox	P	X					
PRG Lighting Division	Teddy Van Bommel	P	X					
Sacramento Theatrical Lighting	Richard Nix	P	X					
Sapsis Rigging, Inc.	Bill Sapsis	P	X					
Stage Rigging, Inc.	Rocky Paulson	P	X					
Theatre Safety Programs	Jerry Gorrell	P	X					
Tomcat USA, Inc.	Keith Bohn	P						
Total Fabrications Ltd.	Peter Hind	P						
			20	0	0	0	0	

Twenty "accept" and no negative votes. (Five voting members were not present at the meeting, and are shown in gray.) The motion passed unanimously with a clear super-majority.

Eddie Kramer moved that we withdraw the existing ESTA wire rope ladder standard (Rig/95-2050r8) when the new E1.1 standard is approved by ANSI. Rod Kaiser seconded. By roll call ballot:

Company	Name	Voting status	Accept	Accept in principle	Accept in part	Reject	Abstain	Comments
Aerial Rigging & Leasing, Inc.	Steve Butner	P	X					
Associated Theatrical Contractors	Brad Dittmer	P	X					
ATM Group, Inc.	Diane Summers	A	X					
BML Inc.	Eric Todd	P						
CM Lodestar	Wally Blount	P	X					
Creative Realities, Inc.	Ron Fogel	P	X					
H & H Specialties Inc.	Reid Neslage	P	X					
IATSE, Local 1	Edwin S. Kramer	P	X					
J.R. Clancy Inc.	Rodney F. Kaiser	P	X					
James Thomas Engineering, Inc.	Mike Garl	P	X					
Jay O. Glerum & Associates, Inc.	Jay O. Glerum	P	X					
Jeamar Winches Inc.	Andrew Smith	P	X					
John R. Burgess	John R. Burgess	P						
Kleege Industries	George Stingel	P	X					
Lift-All Co., Inc.	Mark Herman	P						
Oasis Stage Werks	Tim Hansen	P	X					
Olaf Sööt Associates	Frederick L. Smith	P	X					
PLASA	Tim Cox	P	X					
PRG Lighting Division	Teddy Van Bommel	P	X					
Sacramento Theatrical Lighting	Richard Nix	P	X					
Sapsis Rigging, Inc.	Bill Sapsis	P	X					
Stage Rigging, Inc.	Rocky Paulson	P	X					
Theatre Safety Programs	Jerry Gorrell	P	X					
Tomcat USA, Inc.	Keith Bohn	P						
Total Fabrications Ltd.	Peter Hind	P						
			20	0	0	0	0	

Twenty "accept" and no negative votes. (Five voting members were not present at the meeting, and are shown in gray.) The motion passed unanimously with a clear super-majority.

7.2 E1.2 - Aluminum Truss Standard – Status report

Ruling reported that the document is still in public review, and will be until April 27.

7.3 E1.4 - Manual Counterweight Flying Systems Standard - Status Report

Rodney Kaiser reported that the task group had received lots of comments on the resolutions from its informal reviewers. Kaiser reported that the task group would work some more that evening on resolving the comments on the resolutions to the public review comments and revising the draft standard. The final set of resolutions should be ready for the July meeting.

There was a discussion of how to expedite the acceptance of the resolutions if they are ready before the July meeting. Bill Sapsis moved that we vote on accepting the resolutions by letter ballot when the resolutions are available. Tim Hansen seconded. Unanimous by show of hands. Ruling will circulate the resolutions and a letter ballot calling for their acceptance when the resolutions become available.

7.4 E1.6 – Powered Flying Systems

7.4.1 Lack of Comment Resolution

There have been no comment resolutions because there is no functioning task group.

7.4.2 Task Group Chair

Tom Young volunteered to work on E1.6. Mike Garl appointed him as task group chair. Several people at the meeting expressed an interest in working on E1.6, including Jay Glerum, Ed Kramer, Jon Lagerquist, Fred Smith, and -- of course -- Tom Young.

7.5 E1.7 - Recommended Practice for Flying Performers - Comment Resolution

Delbert Hall not present. No report.

7.6 E1.8 - Speaker Enclosures Rigging Standard – Status Report – Karl Ruling

Ruling reported that the working group had approved sending the revised document to public review. The TSC will vote on this by letter ballot.

7.7 E1.10 - Building Structural Requirements - Comment Resolution

Rod Kaiser moved that the SI loading units shall be changed to kilograms per meter or per square meter in the draft standard, and the edited draft E1.10 shall then be sent to a second public review. Jay Glerum seconded.

By roll call ballot:

Company	Name	Voting status	Accept	Accept in principle	Accept in part	Reject	Abstain	Comments
Aerial Rigging & Leasing, Inc.	Steve Butner	P	X					
Associated Theatrical Contractors	Brad Dittmer	P	X					
ATM Group, Inc.	Diane Summers	A	X					
BML Inc.	Eric Todd	P						
CM Lodestar	Wally Blount	P					X	
Creative Realities, Inc.	Ron Fogel	P	X					
H & H Specialties Inc.	Reid Neslage	P	X					
IATSE, Local 1	Edwin S. Kramer	P	X					
J.R. Clancy Inc.	Rodney F. Kaiser	P	X					
James Thomas Engineering, Inc.	Mike Garl	P	X					
Jay O. Glerum & Associates, Inc.	Jay O. Glerum	P	X					
Jeamar Winches Inc.	Andrew Smith	P					X	
John R. Burgess	John R. Burgess	P						
Kleege Industries	George Stingel	P	X					
Lift-All Co., Inc.	Mark Herman	P						
Oasis Stage Werks	Tim Hansen	P	X					
Olaf Sööt Associates	Frederick L. Smith	P	X					
PLASA	Tim Cox	P	X					
PRG Lighting Division	Teddy Van Bommel	P	X					
Sacramento Theatrical Lighting	Richard Nix	P	X					
Sapsis Rigging, Inc.	Bill Sapsis	P	X					
Stage Rigging, Inc.	Rocky Paulson	P	X					
Theatre Safety Programs	Jerry Gorrell	P	X					
Tomcat USA, Inc.	Keith Bohn	P						
Total Fabrications Ltd.	Peter Hind	P						
			18	0	0	0	2	

Eighteen "accept" with no negative votes and two abstentions. (Five voting members were not present at the meeting, and are shown in gray.) The motion passed with a clear super-majority.

7.8 Update on British Rigging Standards

Mike Garl reported that Peter Hind had submitted the "English version" of the truss standard to the BSI committee last spring. Hind reported to Garl in an e-mail of February 24 that he had successfully argued it should be a separate standard rather than part of an omnibus rigging standard. It is now in text editing at BSI. Peter Hind will watch to see that no substantive changes are made during the text editing. In Hind's message of February 24, Hind said he hopes it will be voted to go to public review on March 19.

7.9 E1.13 - Arena Scoreboards and Speakers Task Group - Update

Wally Blount reported that the scoreboards and speakers task group had a meeting February 25th in Amherst, NY. The vision statement the group is using is:

"This document encompasses the design, manufacture, installation, inspection, and maintenance of permanently installed hoisting equipment for overhead suspension of sound, video, scoreboard, and lighting equipment used in sporting facilities."

The task group has schedule that will result in a draft document being presented to the working group at the July meeting. At that time there will probably be a motion to send the draft document to public review.

8 New Business

Mike Garl asked for comments regarding emailing documents to the working group. The consensus was that it seems to be working.

9 Other Business

Wally Blount mentioned that when we write standards that we can't write in requirements that would arbitrarily show favoritism for one manufacturer or would exclude others. He offered the example of a new DIN hoist standard that requires five-pocket chain wheels on chain hoists. There is no valid safety reason for this, but it is effectively keeping CM equipment out of the German market.

10 Schedule for Future Meetings

Mike Garl announced that the next meeting would be at the Dallas/Ft. Worth Marriott in Irving, Texas at 7:00 p.m. on Friday, July 16, 1999. The meeting following that on will be November 17 at 7:00 p.m. in Orlando, Florida.

11 Changes of membership status resulting from lack of attendance.

None.

12 Adjournment

Bill Sapsis moved the meeting adjourn. Teddy Van Bommel seconded. Unanimous by voice vote. The meeting was adjourned at 8:41 p.m.

Working Group Membership as of the End of the March 24, 1999 Meeting

Name	Company	Vote Stat.	Int. Cat.
Steve Butner	Aerial Rigging & Leasing, Inc. (SB)	P	P
Jim Fletcher	American Sling Company, Inc.	O	P
Brad Dittmer	Associated Theatrical Contractors	P	U
Andrew T. Martin	ATM Group, Inc.	P	P
Diane Summers	ATM Group, Inc.	A	P
Lee J. Bloch	Bloch Design Group Inc.	O	G
Eric Todd	BML Inc.	P	P
Paul Tardue	BML Inc.	A	P
Robert Mullett	Bose Corporation	O	P
Joachim Stoecker	CAMCO GmbH	O	P
Ted Jones	Chicago Spotlight, Inc.	O	U
Marty Lazarus	Chicago Spotlight, Inc.	O	U
Wally Blount	CM Lodestar	P	P
Jim Krull	CM Lodestar	A	P
Ron Fogel	Creative Realities, Inc.	P	G
Jason Friedman	Creative Realities, Inc.	A	G
Harry Donovan	Donovan Rigging, Inc.	O	U
Wes Jenkins	Down Stage Right Industries	O	P
David M. Campbell	Geiger Engineers	O	G
Paul Brady	Grand Stage Company, Inc.	O	U
Reid Neslage	H & H Specialties Inc.	P	P
Delbert Hall	Hall Associates Inc.	O	U

Name	Company	Vote Stat.	Int. Cat.
Edwin S. Kramer	IATSE, Local 1	P	U
Jack Suesse	J.R. Clancy, Inc.	A	P
Rodney F. Kaiser	J.R. Clancy Inc.	P	P
Thomas S. Young	J.R. Clancy Inc.	A	P
Mike Garl	James Thomas Engineering, Inc.	P	P
Tray Allen	James Thomas Engineering, Inc.	A	P
Mervyn Thomas	James Thomas Engineering Ltd.	A	P
Jay O. Glerum	Jay O. Glerum & Associates, Inc.	P	U
Andrew Smith	Jeamar Winches Inc.	P	P
Chuck McClelland	Jeamar Winches Inc.	A	P
John Kaes	John Kaes	O	U
John R. Burgess	John R. Burgess	P	U
George Stingel	Kleege Industries	P	U
Gregory Babinchak	Lift-All Co., Inc.	A	P
Tim Gauss	Lift-All Co., Inc.	O	P
Mark Herman	Lift-All Co., Inc.	P	P
Ian J. Warhurst	Lite Structures (GB) Ltd.	O	P
Bill Webb	Martin Audio Ltd.	O	P
Charles E. Gorgen	Minnesota Crane Corp.	O	P
Ted Hickey	OAP Audio Products	O	P

Name	Company	Vote Stat.	Int. Cat.
Gary Justensen	Oasis Stage Werks	O	P
Tim Hansen	Oasis Stage Werks	P	U
Frederick L. Smith	Olaf Soot Associates	P	P
Joseph Rapier	Parkhill, Smith & Cooper, Inc.	O	P
Patrick Stansfield	Patrick Stansfield Assoc., Inc.	O	U
Peter Letzelter-Smith	Peter Letzelter-Smith	O	U
Billy Phillips	Phillips Rigging	O	P
Tim Cox	PLASA	P	G
Tony Douglas-Beveridge	PLASA Standards Office	A	G
Michael Akrep	Polar Focus, Inc.	O	P
George Sabbi	PRG Lighting Division	A	U
Teddy Van Bommel	PRG Lighting Division	P	U
Scott Mohr	R&R Cases and Cabinets	O	G
Mark Fitch	Renkus-Heinz, Inc.	O	P
Rikki Newman	Rikki Newman	O	U
Randall W. A. Davidson	Risk International & Associates, Inc.	O	U
Heinz Siller	RST Präsentationssysteme	O	G
Richard Nix	Sacramento Theatrical Lighting	P	G
Bill Sapsis	Sapsis Rigging, Inc.	P	U
Luigi Sbalzarini	Selvolina SNC	O	P
Michael Wood	Slick Systems International (UK)	O	P
Jon Lagerquist	South Coast Repertory	O	U

Name	Company	Vote Stat.	Int. Cat.
Jerrold S. Tiers	St. Louis Music Inc.	O	P
Rocky Paulson	Stage Rigging, Inc.	P	U
Julie Shaw	Stage Rigging, Inc.	N	U
Richard C. Mecke	Texas Scenic Company	O	P
Alan Broadhurst	The Broadhurst Partnership	O	P
Jerry Gorrell	Theatre Safety Programs	P	G
Ed Nicholas	Theatrical Lighting Systems, Inc.	O	U
F. Robert Bauer	Theatrix Inc.	O	U
Mitch Clark	Tomcat USA, Inc.	A	P
Mark Newlin	Tomcat USA, Inc.	A	P
John James	Tomcat USA, Inc.	A	P
Keith Bohn	Tomcat USA, Inc.	P	P
Peter Hind	Total Fabrications Ltd.	P	P
Ian Coles	Total Structures, Inc.	A	P
Warren A. Bacon	Warren A. Bacon	O	U

Voting Status

- P Principal voting representative for a company or organization
- A Alternate voting representative for a company or organization
- I Individual representing no organization other than himself or herself
- O Observer; non-voting

Categories of interest

- P Producer (manufacturer) of rigging equipment
- U User of rigging equipment
- G General interest in rigging equipment

**Responses to Second Public Review Comments
on
BSR E1.1, Entertainment Technology — Construction and Use of Wire Rope Ladders (Rig/95-
2050r10)**

Public review comment period closed at 5:00 p.m. EST, February 2, 1999

- 1 General comment:** The word "Standard" appears with a capital letter throughout the text, except in the first and last paragraphs of Section 1 "Scope" on page 1. Is this deliberate? A little "s" is used in other documents.

Tim Cox
PLASA

Response: Capitalizing the "s" in standard appears to be an editorial mistake. All instances of the word standard in the middle of a sentence should begin with a small "s," as follows:

1. Section 2, 1st line. This standard is designed to:
2. Section 3, (a). The effective date of this standard for the purpose of defining new and existing installations shall be one year after its date of issuance.
3. Section 3, (b). Construction, installation, inspection, testing, maintenance, and operation of equipment manufactured after the effective date of this standard shall conform with the mandatory requirements of this volume.
4. Section 3. (C). Inspection, testing, maintenance, and operation of equipment manufactured prior to the effective date of this standard shall be done as applicable, in accordance with the requirements of this standard.
5. Section 3. It is not the intent of this standard to require replacement of existing equipment. However, when an item is being modified, its performance requirements shall be reviewed relative to the current standard.
6. Section 6.1.5. The tag also may make reference to the fact that the ladder conforms with this standard. If a statement of conformance to this standard is made, then the manufacturer shall warrant that the ladder conforms to all requirements set forth in this standard.

- 2 Section 3:** In the last line on the page, after "year" add "of the evaluation" or "of the review". Reason: This will clarify the meaning.

Tim Cox
PLASA

Response: Change last sentence of Section 3. to: Recommended changes shall be made by the owner (user) within one year of the evaluation.

- 3 Section 4:** After "Advisory statements" delete "will". Reason: "will" is redundant here.

Tim Cox
PLASA

Response: We agree, change Section 4. to: "Mandatory rules are characterized by the word 'shall.' Advisory statements use the word 'should'."

- 4 Section 6.1.1 Finish:** Double negative. "Neither the rungs nor the rung/rail shall have no sharp...." Suggest change to, " Neither the rungs nor the rung/rail shall have sharp or...." Remove the word "no."

Ron Fogel
Creative Realities, Inc.

Response: We agree, change first sentence of 6.1.1 Finish to: "Neither rung nor the rung/rail connections shall have sharp or jagged edges that could cause injury during the use of the ladder."

5 Section 6.1.1 Finish: First sentence. This is a double negative.

Ted Jones
Chicago Spotlight

Response: See 4.

6 Section 6.1.1 Finish: There is a grammatical mistake that needs correction. Delete the word "no" in the first sentence after the words "shall have." The sentence should read, "Neither the rungs nor the rung/rail connections shall have sharp or jagged edges that could cause injury during the use of the ladder." As currently written the sentence contains a double negative which is incorrect grammar.

Tim Hansen
Oasis Stage Werks, Inc.

Response: See 4.

7 Section 6.1.1 Material: I think the span should be defined. A tube can hold much more weight on a 3" span than on a 12" span.

Ted Jones
Chicago Spotlight

Response: The span is defined in section 6.2.1. No change is recommended to this section.

8 Section 6.1.2 Ladder rails: Second paragraph - End Fittings, 2nd Line: Change the word "should" to "shall." "...shall be swaged consistent with..."

Richard Nix
Sacramento Stage Lighting

Response: We have addressed this issue once before. We do not feel that following the manufacturer's instructions is imperative as long as the efficiency of the fitting is at least 85%. The strength is mandatory not the manufacturer's instructions. We recommend no change.

9 Section 6.1.4: In the first line, amend "2,000 lbs" to "2000 lbs". Reason: consistency. Commas are not used for such numbers elsewhere.

Tim Cox
PLASA

Response: Consistency is important. However, the ANSI Style Manual recommends in section 6.4.3 that numbers such as two-thousand should be written "2 000" with a space used to divide the number left of the decimal point into groups of three. It specifically recommends that commas not be used to make the groups. For consistency, all the numbers over 999 will be written in accordance with this recommended. The following sentences need to be changed as follows:

1. Section 6.1.1. Material The rung material shall be such that a 3" (7.6 cm) wide load of 1 000 lbs (4.45 kN) applied to the center of the rung shall not cause permanent

- deformation of the rung. The connection between the rung and the rail shall resist a load of 1 000 lbs (4.45 kN) without permanent deformation or failure of any component.
2. Section 6.1.2. Material The nominal breaking strength shall be not less than 2 000 lbs (8.9 kN).
 3. Section 6.1.3. Slings used to connect the ladder to the anchorage (anchorage sling) shall be connected in such a fashion so as to have a minimum working load limit of 1 000 lbs (4.45 kN).
 4. Section 6.1.4. If the same anchorage must be used the ultimate strength of the combined anchorage shall be 8 000 lbs (36.6 kN).

10 Section 6.1.5 Ladder identification: The tag should be on the top rung or termination. A ladder could be shortened and lose its tag and this will make it easier to find in the field.

Ted Jones
Chicago Spotlight

Response: There are pluses and minuses to just about every location that a label can be placed. We have not specified the location in this document as there is no clearly best location. The missing tag and the shortened ladder would be caught in the daily inspection of the ladder as per Section 10. Recommend no change.

11 Section 6.1.1: In the first sentence of the second paragraph, after “shall have” delete “no”. Reason: As sentence uses “neither” and “nor”, the use of “no” here introduces an unwanted double negative.

Tim Cox
PLASA

Response: See 4.

12 Section 6.1.1: In the last sentence of the second paragraph, after “hands” amend “or” to “nor”. Reason: “Neither” goes with “nor”, “either” goes with “or”.

Tim Cox
PLASA

Response: We agree. The sentence should read as follows: "The stepping/gripping surface should have a slip resistant treatment that when gripped is neither painful to hands nor likely to cause injury."

13 Section 6.2.1: Amend “width” to “Width”. Reason: Consistency in the use of capitals in the Contents section.

Tim Cox
PLASA

Response: We agree. Both the section title and the contents page should be changed to the following: "Rung Width"

14 Section 6.2.1: Amend “width” to “Width”. Reason: Consistency in use of capital letters in section titles.

Tim Cox
PLASA

Response: See 13.

- 15 Section 6.2.2:** Amend “spacing” to “Spacing”. Reason: Consistency in the use of capitals in the Contents section.
Tim Cox
PLASA

Response: We agree. Both the section title and the contents page should be changed to capitalize “Vertical” and “Spacing”. Both the section title and the contents page should be changed to the following: Rung Vertical Spacing

- 16 Section 6.2.2:** Amend “spacing” to “Spacing”. Reason: Consistency in use of capital letters in section titles.
Tim Cox
PLASA

Response: See 15.

- 17 Section 6.2.2:** Amend “vertical” to “Vertical”. Reason: Consistency in the use of capitals in the Contents section.
Tim Cox
PLASA

Response: See 15.

- 18 Section 6.2.2:** Amend “vertical” to “Vertical”. Reason: Consistency in use of capital letters in section titles.
Tim Cox
PLASA

Response: See 15.

- 19 Section 6.2.2:** In the second line delete “across” and insert “along”. Reason: Suggest that “along” is more appropriate to length, “across” to width.
Tim Cox
PLASA

Response: We agree. The sentence should be changed to the following: "The vertical spacing tolerance shall be 0.25" (0.64 cm) along the entire length of the ladder."

- 20 Section 7:** In the second line of the fifth paragraph, before “ascent” delete “the”. Reason: Redundant word.
Tim Cox
PLASA

Response: We agree. The sentence should be changed to the following: "The bottom of the ladder shall be stabilized by applying a downward force within 24" (61 cm) of the bottom to minimize swinging and therefore minimize the chance of the worker missing a rung during ascent or descent."

- 21 Section 7:** In the second line of the fifth paragraph, before “swinging” delete “the”. Reason: Redundant word.

Tim Cox
PLASA

Response: See 20.