

Context matters



John Bull on display at the World Columbian Exposition in Chicago, 1893.

THIS STORY IS DUE SEPTEMBER 15. On this day in 1831, the John Bull, reassembled from parts shipped from Newcastle, England, became the first steam locomotive operated in the United States. On this same day 150 years later, the National Museum of American History put the locomotive back on the rails of a branch line near the Potomac River in Washington, DC and ran it under steam. You can see a video of the John Bull's 1981 run on YouTube at www.youtube.com/watch?v=FxcdY2Cj5nQ.

The narrator of "John Bull: Riding the Rails" notes the steam locomotive's "transforming effect in bringing new civilization into the wilderness" and calls it "a symbol of the Industrial Revolution." For the modern YouTube viewer, the regular motion of the engine's valve linkage is beautifully simple, and the wood-fired boiler's whistle has a warm, wet sound. However, the new locomotive whistles were unwelcome to Henry David Thoreau's ears. In "The Ponds" chapter of *Walden* he wrote:

"That devilish Iron Horse, whose ear-rending neigh is heard throughout the town, has muddied the Boiling Spring with his foot, and he it is that has browsed off all the woods on Walden shore . . . Where is the country's champion, the Moore of Moore-Hall, to meet him at the Deep Cut and thrust an avenging lance between the ribs of the bloated pest?"

Civilizing or demonic? It depends on the

context . . . and that brings me to my buried lede.

With standards, the context of the standard—who is going to use it, where, how, for what purpose—makes a tremendous difference.

The Floors Working Group is working on a revision to *ANSI E1.46 – 2016, Standard for the Prevention of Falls from Theatrical Stages and Raised Performance Platforms*. The revision was triggered by OSHA rewriting *29 CFR 1910.23*, which our standard quotes extensively in an informative annex. Some people had advised that we not quote any OSHA material, since it is all available on the Web, but it was included because it had some rules that could be applied in some instances to help prevent falls. Furthermore, people who might actually need this information said that they wanted it in the standard. However, shortly after we published the standard, OSHA changed the referenced text. *Section 1910.23* used to be entitled "Guarding floor and wall openings and holes" but now it is called "Ladders" and that's what it is about. There is no "Guarding floor and wall openings and holes" section anywhere in the current OSHA regulations. Most of the information that had been in *29 CFR 1910.23* is now in *29 CFR 1910.28*, "Duty to have fall protection and falling object protection."

For our industry, the interesting bits of *29*

CFR 1910.28 are clauses 1910.28(a)(2) and 1910.28(a)(2)(iii) which together exempt "fall hazards presented by the exposed perimeters of entertainment stages . . ." from the "Duty to have fall protection and falling object protection." So, don't worry about that open orchestra pit!

No, that's not quite right. It's helpful to remember that "CFR" in "*29 CFR 1910.28*" means "Code of Federal Regulations." OSHA may call these "standards," but they are regulations—rules by which an authority having jurisdiction (AHJ) judges whether someone else is doing what needs to be done. They are written primarily for the regulators and secondarily for the regulated so they see what the regulators will be checking. With this exemption, the manager of a stage doesn't have to worry about being cited by an OSHA inspector seeing an unguarded edge on a walk-through, but the manager still has a problem if the inspector is following up on the death of someone falling into the pit. Under the General Duty Clause, Section 5(a)(1) of the *Occupational Safety and Health Act of 1970*, employers are required to provide their employees with a place of employment that is "free from recognized hazards that are causing or are likely to cause death or serious harm," and that still applies, even if some specific regulations for how to provide a safe workplace don't. There is still a lot of useful fall protection information in *29*

CFR 1910.28, so, for the purpose of offering guidance to people needing to devise fall protection plans, parts of it will continue to be included in an informative annex to *E1.47*—unless the Floors Working Group changes its collective mind and removes it, instead telling people to look it up.

Similar considerations of for whom a standard is being written and how will it be used are also part of the Rigging Working Group’s revision of *ANSI E1.1 – 2012, Entertainment Technology – Construction and Use of Wire Rope Ladders*. *E1.1* requires the use of a personal fall arrest system to protect the person on the ladder, and cites *ANSI/ASSE Z359.1-2007, Safety Requirements for Personal Fall Arrest Systems, Subsystems, and Components*, for the requirements of that fall arrest system. That’s clear, but *Z359.1-2007* is ten years old; *Z359* has been rewritten and restructured into a multi-part “Fall Protection Code.” The Rigging Working Group has a lot of smart rigging people, but the ASSE is the organization with the recognized experts on fall protection, and they are the people who have written the American National Standard on it. In *ANSI E1.1*, we describe the wire rope ladder and require a personal fall arrest system, but we point to the ASSE experts for information on how to provide a PFAS that will do the job. Should we cite a particular edition and part of the *Z359 Fall Protection Code*—and update our standard as they update their code—or do we simply tell users of *E1.1* to use the current edition of *Z359*?

There are arguments for both approaches, and the arguments rest on how we think a standard will be used. There are many people who feel that a standard must have “enforceable” requirements—requirements that an AHJ can easily and unambiguously see are met or not met. If this yes/no determination isn’t clear, then the standard is unenforceable, and the enforcement advocates say it will not be followed. There is some evidence for this argument. For example, I often hear stories of a building owner not installing ADA-required accommodations, dismissing the Americans with Disabilities Act as “unenforceable.” Unless there is someone with a clipboard

or briefcase threatening to cost him a lot of money, he’s not going to do anything for the person in the wheelchair.

That’s the enforcement argument: we have to write standards for AHJs. If we give AHJs clear yes-or-no criteria, they will be more likely to enforce the standard, and so more people will comply with it. In this model, citing a particular edition of a standard helps clarity. Was *Z359.1-2007*

followed? Yes or no? Never mind that the standard has been revised because the ASSE’s experts felt that the old version doesn’t serve current conditions. If we don’t update *E1.1* regularly to point to the latest version of *Z359* we could be seriously out of date, but we will always be clear on what the rules are for the fall arrest system.

However, things change if we decide that the best way to achieve the goal of

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Since April 15, 2013, all of the standards published by ESTA's Technical Standards Program are available to download free of charge at <http://www.tsp.esta.org/freestandards>, thanks to the sponsorship of ProSight Specialty Insurance. At present, 61,711 standards have been downloaded with a retail value of \$1,937,350 by 10,765 users (as of September 24, 2017). The ProSight sponsorship has been invaluable in making ESTA's standards part of the way the entertainment industry does business and talks about our industry with other standards organizations and government. However, this sponsorship is not enough to fund ESTA's TSP by itself. Please join with ProSight and your colleagues to help fund the TSP by visiting <http://tsp.esta.org/invest>, typing in an amount, and clicking on "Donate Now."

safe use of wire rope ladders is to provide guidance to the person buying, installing, or using the wire rope ladder—the user of the standard—rather than creating a check list for an AHJ. In this case, pointing to “the current edition of the ANSI/ASSE Z359, *Fall Protection Code*,” does the job. It's not

specific, and it requires the reader of the standard to determine what the current edition is. That's an extra step, but maybe that's a benefit. The installer will have to learn about the *Fall Protection Code*, which is a living document, rather than checking a specific edition that is called out in *E1.1*.

Which approach is the right approach? How will the standard be used—or be the most useful? How does it fit into the entertainment industry? That is, what's its context? The Rigging Working Group will decide.

But this column is called “TSP News,” so there should be some news in it.

New ANS projects

Besides the *E1.1* and *E1.46* revision projects mentioned above, ESTA recently has filed three other projects with ANSI. Contact me or Assistant Technical Standards Manager, Erin Grabe, if you want to become involved.

BSR E1.2-201x, Design, Manufacture, and Use of Aluminum Trusses and Towers (revision of *ANSI E1.2-2012*) – *E1.2* describes the design, manufacture, and use of aluminum trusses, towers, and associated aluminum structural components, such as head blocks, sleeve blocks, and bases, in the live entertainment industry. It also offers advice on applying and removing coatings and painted finishes.

BSR E1.8-201x, Loudspeaker Enclosures Intended for Overhead Suspension – Classification, Manufacture, and Structural Testing (revision of *ANSI E1.8-2012*) – This standard addresses the requirements for speaker enclosures intended for overhead suspension so they don't break in the air. The standard is being revised to clarify the requirements of the standard and to revisit them in light of current manufacturing technology.

BSR E1.54-201x, ESTA Standard for Color Communication in Entertainment Lighting (revision of *ANSI E1.54-2015*) – The standard specifies a standardized color space and the locations of the RGB primaries and the White Point. Its purpose is to facilitate the communication between lighting controllers and color-changing luminaires by specifying a standardized way of specifying color, so you can get the same colors (or at least close) when you change luminaires or desks. The standard as written works, but it is not often used; revisions are needed to make the standard more popular.

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Recently published

ANSI E1.50-1 – 2017, Requirements for the Structural Support of Temporary LED, Video and Display Systems, was approved by ANSI's Board of Standards Review on Monday, August 14. It's a new standard, and is now published. *ANSI E1.50-1* covers the support of temporary installations of large format modular display systems, LED, video, and other self-illuminating display structures not otherwise addressed by existing standards. The scope of this standard includes planning and site preparedness, assembly and erection, suspension and safety of components, special access requirements, use, and dismantling of these systems.

On September 15—this story's due-date—ANSI's Board of Standards Review approved the reaffirmation of *ANSI E1.32, Guide for the Inspection of Entertainment Industry Incandescent Lamp Luminaires*. *ANSI E1.32* provides guidance in the inspection of stage and studio luminaires used in the entertainment industry to evaluate their safety and any needed maintenance. The information contained in the document is intended to supplement the information contained in manufacturers' maintenance instructions.

ANSI E1.50-1 and *ANSI E1.32* are available on the ESTA website at <http://estalink.us/freestandards> for download at no cost, thanks to the sponsorship of ProSight Specialty Insurance. The standards also may be purchased from ANSI (<https://webstore.ansi.org/>) and IHS (<https://global.ihs.com/>) for the list prices of \$40 and \$15 respectively.

Call for members

ESTA's TSP works to maintain a balance of interest on the working groups to help ensure that the standards developed are for the benefit of everyone: the people who make equipment, the people who sell or rent it, the people who specify it, and the people who use it. To do this, periodically the TSP issues a call for new members in particular interest categories. At this time,

the following working groups are looking for voting members in the noted interest categories to help balance the interests in the working group.

- **Control Protocols:** General interest, dealer-rental companies
- **Electrical Power:** Designers, dealer-rental companies
- **Event Safety:** Performing artists, event insurance companies, event equipment manufacturers
- **Floors:** Custom-market producers, dealer/rental companies
- **Fog and Smoke:** Custom-market and mass-market producers, dealer/rental companies, designers, general interest, *not* users.
- **Followspot Position:** Custom-market producers, dealer/rental companies
- **Photometrics:** Dealer/rental companies, designers, general interest, users
- **Rigging:** Custom-market producers, designers
- **Stage Lifts:** Users, mass-market producers

Voters in the Technical Standards Program are required to attend meetings and to vote on letter ballots. Membership in ESTA or any other organization is not a requirement for participation in ESTA's Technical Standards Program, but there is a \$100 a year per person participation fee—a flat rate, regardless of voting status or the number of working groups a person joins. The fee is levied to help defray the costs of running the TSP, which has always run at a deficit. More information about becoming involved in the Technical Standards Program and links to blank application forms are available at <http://estalink.us/wg>. ■



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