

Granfalloons and karasses



See the cat? See the cradle?

*If you wish to see a granfalloon,
Just remove the skin of a toy balloon.*

“GRANFALLOON” IS A MAJOR THEME in Kurt Vonnegut’s *Cat’s Cradle*. The short quote above is a calypso verse offered by Bokonon, the clandestine religious leader of San Lorenzo. The novel’s narrator, John, explains that a granfalloon is “a false karass . . . a seeming team that is meaningless in terms of the ways God gets things done . . . examples of granfalloons are the Communist party, the Daughters of the American Revolution, the General Electric Company, the International Order of Odd Fellows—and any nation, any time, anywhere.” A meaningless construct is in the book’s title, too. See the cat? See the cradle? They aren’t there.

My wife and I recently had dinner with another couple, one of who is a retired lawyer who had worked for Harley-Davidson and for US aluminum producers. As you might expect with his background, we talked a lot about tariffs, and also about standards and regulation. President Trump has imposed tariffs on imports in the name of US national security, first targeting imported steel and aluminum, and then moving on to a range of products. These tariffs have triggered retaliatory tariffs against US goods. The effects? On September 5 the US Census Bureau and the US Bureau of Economic Analysis announced that US exports dropped 1% in July, while imports increased by 0.9%, a total shift of about \$4.3 billion—small change compared to the \$20 trillion US GDP. However, what usually happens with tariffs is not so much that a nation as a whole is harmed or helped, but that different interests in a nation are affected. Higher steel prices help steel manufacturers, but harm stage rigging hoist manufacturers or their customers when the costs are passed on. As the Editorial Board of the *Wall Street Journal* wrote on August 6, “Tariffs are taxes, which distort investment and limit growth. And like taxes, when tariffs are high they create a political incentive for exemptions and favoritism.” (*Trump’s Political Tariff Bureaucracy*). They noted that the Commerce Department has

granted more than 1,300 steel exemptions, but it has not approved any request challenged by US Steel, Nucor, or AK Steel, the companies that “have the ear of Commerce Secretary Wilbur Ross and US Trade Representative Robert Lighthizer.”

When it comes to business, is a nation a karass, or is it a granfalloon? It is hard to find any business that is truly “national.” The popular press has carried stories about the automobile manufacturing supply lines that criss-cross national borders; the entertainment industry also has cross-border supply lines. Even the ownership of companies ignores national borders. Just about every major company in our industry has subsidiary companies in other nations. Furthermore, if they are publicly traded, their owners may be of different nationalities. The geographical boundaries of a nation make for a simple way to enforce laws and regulations, but don’t necessarily align with people’s business interests.

Our lawyer dinner companion asked how ESTA enforces our standards. My answer was that we don’t. Our standards are essentially offered as good advice, the consensus of the industry on how to solve particular technical problems, or the minimum that should be done to assure a reasonably safe workplace. A person or company could develop their own communications protocol for lighting equipment, but why do it if a standard exists that works? A company could develop its own protocol for using wire rope ladders, but *ANSI E1.1* would make a good starting point. This does not mean that our standards have no legal force. For example, you don’t have to follow *ANSI E1.46* for fall protection from stages, but if you choose not to and someone is injured, you probably will have to explain in court why you thought you had a better idea. “You have them over a barrel,” our lawyer friend said with a smile.

Good advice doesn’t respect national boundaries, but local custom or conditions may make it more useful in some places than others. We try to make ESTA’s standards useful in a wide range of areas by making participation in the program open to anyone with a material interest in what we do, with no national limits. Our

membership is wide. For example, the Event Safety Working Group has members from Australia, Canada, Germany, Switzerland, the United Arab Emirates, the United Kingdom, and the United States. A Control Protocols Working Group meeting via WebEx in late August had participants logging in from as far away as Austria and New Zealand, a time zone span including the United States of 14 hours. Furthermore, anyone can comment on our standards, anyone from anywhere, so a wide range of viewpoints are brought to the discussion.

Of course, there are regulations. Regulations are local because laws and rules are enforced on a regional basis. They may be based on standards, but these can take into account local conditions, local laws, and local cultural norms. Bridgeport, CT has a Building Department that issues permits and inspects work done to all buildings in Bridgeport. It has no authority in Manhattan, where the ESTA offices are. However, the electrical code in Bridgeport is based on the 2014 *National Electrical Code (NFPA 70)*; the electrical code in Manhattan is based on the 2008 edition. Their reasonable requirements come from the standard, modified or not to fit local conditions; their enforcement power comes from local law.

A few of our standards, most notably *ANSI E1.21*, have been adopted into government regulations, but our focus is on developing good advice for our industry, so people can build on them to make safe workplaces and great shows. Below is a sampling of a few of the bits of good advice the volunteers in ESTA's Technical Standards Program have been working on.

Three new standards projects

Since the last installment of TSP News, three new standards-drafting projects have been filed with ANSI. Two are completely new projects, and one is a revision of an existing standard.

BSR E1.53, Overhead Mounting of Luminaires, Lighting Accessories, and Other Portable Devices: Specification and Practice—This is a project to revise the existing standard, which covers specifications for the primary and secondary mounting devices (C-clamps and safety cables) for portable stage and studio luminaires and accessories. The existing standard is being revised because the "safe working load" and "working load limit" marking requirements need clarification. The current mandatory language cannot fit legibly on most safety cables. This is an Electrical Power Working Group project.

BSR E1.65, Recommended Practice for the Periodic Inspection, Testing, and Maintenance of Electrical and Electronic Equipment Used in the Entertainment and Live Event Industries—This standard will establish the minimum requirements for periodic inspection and maintenance of electrical systems and equipment used in the entertainment and live event industries. It is intended to complement, not replace, the guidance offered in *NFPA 70E*, *NFPA 70B*, *NFPA 78*, and equipment manufacturers' instructions. This is a

A call for members

ESTA's TSP works to maintain a balance of interest represented by the volunteers 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, designers
- **Electrical Power:** Designers, custom-market producers
- **Event Safety:** Performing artists, insurance companies
- **Floors:** Custom-market producers, designers, dealer/rental companies
- **Fog and Smoke:** All categories except users
- **Followspot Position:** Custom-market producers, dealer/rental companies, general interest
- **Photometrics:** Dealer/rental companies, designers, general interest, users
- **Rigging:** Designers
- **Stage Machinery:** Users, dealer/rental companies

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 a deficit. There is a scholarship fund, with an initial endowment from Chris Kaiser, to help those who would like to participate for whom the participation fee would be a hardship. More information about becoming involved in the Technical Standards Program and links to application forms are available at <http://estalink.us/wg>.

new Electrical Power Working Group project.

BSR E1.66, Safety Standard for Followspot Positions Erected for Short-term Use in Outdoor Entertainment Venues—The standard will provide minimum specifications for followspot positions erected for short-term use in entertainment venues in outdoor locations. The standard will specify provisions for safe worker access, fall protection, protection from weather, protection from falling objects for workers and members of the public, and power supply requirements. We've avoided using "temporary" in the title because that suggests the temporary electrical installations covered in Article 590 of the *National Electrical Code*, and these followspot installations are not those. This is a new Followspot Position Working Group project.

People who might be materially affected by these projects are invited to be involved in the work, either by joining the appropriate working group or by commenting on the documents in forthcoming public reviews. We are particularly interested in new members in designated interest categories. See this column's sidebar for a listing of needed members for all of our working groups.

Two standards published

Two standards have been accepted by ANSI and published since my last report.

ANSI E1.46 – 2018, Standard for the Prevention of Falls from Theatrical Stages and Raised Performance Platforms—Falling into an orchestra pit or open trap can ruin your whole day. Health and safety

regulations require action to prevent these falls, but offer little guidance that is suitable for theatrical environments. This document provides that guidance. This revised edition addresses recent changes to 29 CFR 1910 subpart D. Those changes mean that OSHA regulators won't cite you for not having a guardrail across the front of a stage, but they do not remove your responsibility to keep people from falling off the front.

ANSI E1.11 – 2008 (R2018), Entertainment Technology – USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories—The ancient and venerable DMX512 protocol still works and is still widely used in our industry, 32 years after it was first adopted and published by USITT. This is a reaffirmation of the 2008 edition.

These two standards—all our standards—can be purchased from ANSI and IHS at <https://webstore.ansi.org/> and <https://global.ihs.com/> respectively, or they can be downloaded at no cost from the TSP website at tsp.esta.org/freestandards. The no-cost download is made possible by the sponsorship of Pro-Sight Specialty Insurance.

Standards in public review

As I am writing this, there are four standards in public review. Our reviews are officially 45 days long, but the documents are posted on our website usually for about two months. We post them as soon as they are ready, but the ANSI announcement in *Standards Action*, which starts the official review, is usually two weeks later. In any case, they probably will have timed-out by the time you read this, but this listing will give you an idea of what people in ESTA's TSP have been doing.

BSR E1.5, Theatrical Fog Made with Aqueous Solutions of Di- and Trihydric Alcohols—This is being put forward as a reaffirmation of *ANSI E1.5 – 2009*. This standard describes the composition of theatrical fogs or artificial mists that are not likely to be harmful to healthy performers, technicians, or audience members of normal working age. It is limited to those fogs and mists made from a solution of water and one or more dihydric or trihydric alcohols—that is, fog fluid made of water and glycol or glycerin.

BSR E1.6-1, Powered Hoist Systems—This is a revision of the 2012 edition of *ANSI E1.6-1*. This document establishes requirements for the design, manufacture,

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Image 1: Digital Painting Miami City Ballet
Image 2: San Theatre, St. Louis, MO
Image 3: Kings Theatre Brooklyn, NY
Image 4: University of Wyoming Laramie, WY
Image 5: Custom Rigging FFB Hornet, Quinlan
Image 6: Radio City Music Hall

installation, inspection, and maintenance of powered hoist systems for lifting and suspension of loads for performance, presentation, and theatrical production. The revision is not major, but it is to address some murky bits in the existing standard and to make the language be more consistent with the language in other ESTA standards.

BSR E1.29, Product Safety Standard for Theatrical Fog Generators that Create Aerosols of Water, Aqueous Solutions of Glycol or Glycerin, or Aerosols of Highly Refined Alkane Mineral Oil—ANSI E1.29 – 2009, previously reaffirmed in 2014, is being considered for reaffirmation. The standard is intended to help guide product safety testing laboratories in evaluating fog-making equipment for design or construction defects that might create unacceptable hazards. It is based on *UL 998 - 2006, Humidifiers*, with modifications. The standard was written in response to problems fog machine manufacturers had with testing labs saying, “We don’t know how to evaluate these machines.” Fog machines are an infinitesimally small market for testing labs compared to toasters, not worth a NRTL’s time to develop a standard, so we did the work for them.

BSR E1.62, Minimum Specifications for Mass-Produced Portable Platforms, Ramps, Stairs, and Choral Risers for Live Performance Events—This new standard covers mass-produced portable platforms, stair units and ramps used with those platforms, and choral risers, designed to be used for the presentation of music concerts, dramatic plays, fashion shows, and other entertainment and special events. The units covered by this standard are of a size and weight that allows them to be moved and erected by one or two people. Larger, heavier units are outside the scope of this standard. The scope also covers the railings provided as fall protection accessories, and the legging systems. There are many standards for the use of portable platforms in particular situations, but nothing in the USA that covers the portable units generically as products. This standard could be considered a North American version of *DIN 15921* and *DIN 15920-1*; it is similar to but not the same

as those documents because of different requirements for the use of these platforms in North America.

In public review soon— or maybe now!

The CPWG meeting mentioned near the top of this story approved the public reviews of revised versions of BSR E1.33, (RDMnet) –

Message Transport and Device Management of *ANSI E1.20 (RDM)* over IP Networks, and BSR E1.37-7, Additional Message Sets for *ANSI E1.20 (RDM)* – Gateway and Splitter Messages. They will be posted for public review soon. The first, E1.33, describes a method of implementing *ANSI E1.20 Remote Device Management* messaging over an IP-based network. The second, E1.37-7, provides additional get/set parameter mes-

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Dan Culhane named USITT President



Dan Culhane

Dan Culhane has been appointed to the role of President of USITT, effective immediately. USITT promotes dialogue, research, and learning among practitioners, educators, and students of theatre design and technology. Culhane replaces outgoing President Mark Shanda.

"We are thrilled to have Dan's decades of expertise and commitment in performing arts to help guide us through the next three years," says USITT's Past President, Mark Shanda.

Culhane has 31 years' experience in the theatre and production realm and has worked as Senior Mechanical Engineer for J.R. Clancy since 2016. Prior to that, he spent 16 years at SECOA as the Engineering Manager and Technical Business Development Manager. In both roles, he has converted architectural drawings and consultant's specifications into manufacturing drawings and

facilitated the design of specific solutions for a variety of venues.

He spent 15 years as a technical director working for theatres across the country including the Guthrie Theater and the Children's Theater Company in Minneapolis, MN, as well as StageWest in Springfield, MA, and the Great Lakes Theater Festival in Cleveland, OH.

He serves on the ESTA Technical Standards Program, where he is Co-Chair of the Stage Machinery Working Group and is also a member of the Rigging Working Group. He is a member of the UL Standards Technical Panel for Fire Doors (STP 10) and serves as an alternate committee member to the NFPA Technical Committee on Fire Doors and Windows (NFPA 80).

"As I start my presidency, I am thankful for USITT's strong base of support," Culhane says. "The success of our annual Conference and Stage Expo affords us the opportunity to expand into areas that were not possible just five years ago. I hope to build upon Mark's solid foundation of fundraising, which will provide additional stability to our finances and allow for continued year-round education, training opportunities, and expanded research grants."

Culhane plans to continue to improve USITT's conference programming for all skill levels. He's an advocate for equity, diversity, and inclusion and encourages members to strive to attract and train a new and broader generation of theatre professionals. He hopes to work more with high schools to develop talent and expand the scope of USITT's outreach. Finally, Culhane hopes to expand the organization's knowledge, research, and outreach regarding event safety.

sages for use with the *ANSI E1.20 Remote Device Management* protocol, the messages relating to configuring managed splitters, proxy devices, and RDMnet Devices. It and E1.33 work together, so they will be offered for public review at the same time.

And finally, we have BSR E1.53, *Overhead Mounting of Luminaires, Lighting Accessories, and Other Portable Devices: Specification and Practice*, the project mentioned above. This revision moves a clause and changes perhaps 50 words, so the rewrite is already done, but ANSI requires a 30-day period between the time a project is announced and a first review, so people can

respond before we move on to that public review step. Unless someone objects, it will be in public review in a few weeks. Look for it! TSP documents in public review are always posted at <http://estalink.us/pr>. ■



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