



## Welcome to the Year of the Rat!

I'M WRITING THIS shortly after the end of the Lunar New Year celebration, a celebration ushering in the Year of the Rat—the Metal Rat. The Rat is considered the first animal of the Chinese zodiac, although the zodiac is a cycle with no beginning and no end. Never the less, as the first year in the rotation of the 12 zodiac signs, a Rat year is a year of renewal. The Rat is known for being inquisitive, shrewd, and resourceful. The Metal element adds to these qualities with strength, determination, and resolution. Rats are quick thinkers, but they are content with living a peaceful life. Rats also have many, many children.

Some readers may not like rats—although Christopher in *The Curious Incident of the Dog in the Night-Time* says this is due to misunderstanding (“... rats are very clean”). However, the Chinese zodiac Rat works as a metaphor for ESTA's Technical Standards Program and its participants: inquisitive, shrewd, resourceful, strong, determined, and resolute—with many, many children, which are the many standards and projects. Here is a summary of some of the active projects. If I leave out a project, it's not because it's unimportant; it's simply that I couldn't fit it into my word-count.

### Control Protocols Working Group

Several projects are related to existing standards. One is a revision of *ANSI E1.20, RDM*, while two more are for doing firmware updates using RDM and adding about 19 more general purpose RDM messages. The working group also has voted to reaffirm *ANSI E1.17, ACN*. It was offered for public review at the end

of 2019, and no one commented—but that's not unusual for a mature standard that works.

New projects include working on creating standards for luminaire parameter libraries (a.k.a. “fixture libraries”) and a protocol for communicating color. The latter project ties into a Photometrics Working Group project, BSR E1.54, *ESTA Standard for Color Communication in Entertainment Lighting*. Out of the many possible ways to state a color, E1.54 would specify one; the CPWG project would define that specification as a machine-readable message.

As I write this, one CPWG document is in public review: BSR E1.59, *Entertainment Technology – Object Transform Protocol (OTP)*. The draft standard describes a mechanism to transfer object transform information such as position, orientation, and velocity over an IP network using a subset of the ACN protocol suite. The data transmitted is intended to coordinate visual and audio elements of a production. Ways exist to do this, but they are proprietary, which makes linking systems difficult.

### Electrical Power Working Group

The EPWG did not meet at NAMM, but it has work to do. *ANSI E1.19, Recommended Practice for the Use of Class A Ground-Fault Circuit Interrupters (GFCIs) Intended for Personnel Protection in the Entertainment Industry*, was last reaffirmed five years ago, so it was offered for public review with a concurrent working group vote at the end of 2019. No public review comments were received, but one

## ESTA's Technical Standards Program 2020 Above & Beyond Award Recipients

Standards are consensus documents. They need the work and cooperation of a host of people, all working together with respect and a sense of shared goals. However, sometimes a person or two will stand out as being exceptionally hard-working on the shared task. The Above & Beyond Awards were created to allow people within the Technical Standards Program to recognize these extraordinary contributions by their peers—people who go above and beyond. These awards are peer to peer; they are Technical Standards Program volunteers celebrating the contributions by other outstanding volunteers.

Three Above & Beyond Awards were presented to TSP members at the January working group meetings held at the Wyndham Garden Anaheim in conjunction with The NAMM Show 2020 in Anaheim. The awards went to:

**Joseph Jeremy**, the Co-Chair of the Stage Machinery Working Group, who was cited for having been the principal



Above and Beyond Award recipient Joseph Jeremy, nominator Bruce Darden, and Stage Machinery Working Group Co-Chair Dan Culhane. Stage Machinery Working Group behind at the Wyndham Garden Anaheim.

author of the controls section of *ANSI E1.42 – Entertainment Technology – Design, Installation, and Use of Orchestra Pit Lifts* as well as significant contributions to a new standard currently in development: BSR E1.64 – Stage Machinery Motion Control. He was nominated by Bruce Darden, who presented the award to Jeremy at the Stage Machinery Working Group meeting.

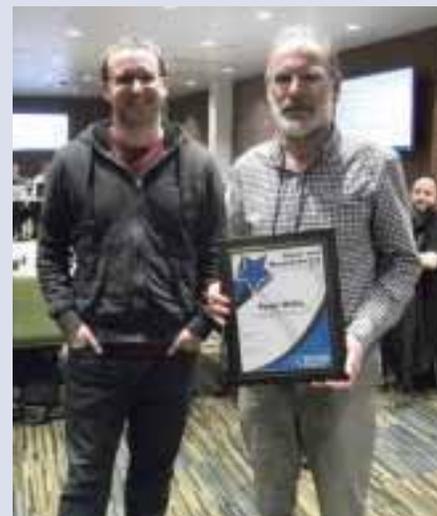
**Chris Schmidt** was lauded for having kept the Event Safety Rigging Task Group on track through many challenging tasks. Event Safety Rigging is a complicated subject that needs to distill down numerous technical requirements to the widest variety of Event Safety standard readers. The subject is elusive to many event promoters and planners and it has been the daunting task of the group to find the precise wording in order to assure the reader's comprehension of this most important subject. Don Earl nominated Chris and presented the award to him at the Event Safety Working Group meeting.

**Peter Willis** has been an active member of the Control Protocols Working Group for almost 20 years and has contributed significantly to many of its control standards. Peter also has provided exceptional leadership in gathering various manufacturers equipment that

use CPWG control standards to demonstrate the compatibility and usefulness of these protocols to the attendees of various conferences, trade shows, and Plugfests in the United States and Europe. Jon Hole nominated Peter and presented the award to him at the Control Protocols meeting.



Above and Beyond recipient Chris Schmidt and nominator Don Earl. Event Safety Working Group.



Nominator Jon Hole and Above and Beyond Award recipient Peter Willis. The Control Protocols Working Group.

person voted No on the ballot, suggesting we consider proposals that were set aside at the last reaffirmation five years ago. A No vote on a letter ballot needs a discussion of the objections and further voting, so there will be work to do at the EPWG meeting in Houston during the USITT Conference.

The EPWG also has a proposal to consider asking for a recommended practice for avoiding shock and electrocution in live performance venues. There are NFPA and other standards for electrical safety, but this would take a risk assessment approach aimed specifically at entertainment venues and practices. It also would recommend developing procedures for when someone has received a severe shock, including having appropriate first aid materials and lifesaving equipment on-site. The question at the meeting will be simply to take up the project or not; the hard work of writing would be for later, if the project is accepted.

## Event Safety Working Group

The Event Safety Working Group has oodles of projects—essentially a project in the works or in the queue for every chapter in the Event Safety Alliance’s *Event Safety Guide*. I’ll highlight three here.

BSR ES1.9, Event Safety – Crowd Management, was offered for public review at the end of 2019 and received one comment—a comment about the DIM-ICE model used in the standard—and this

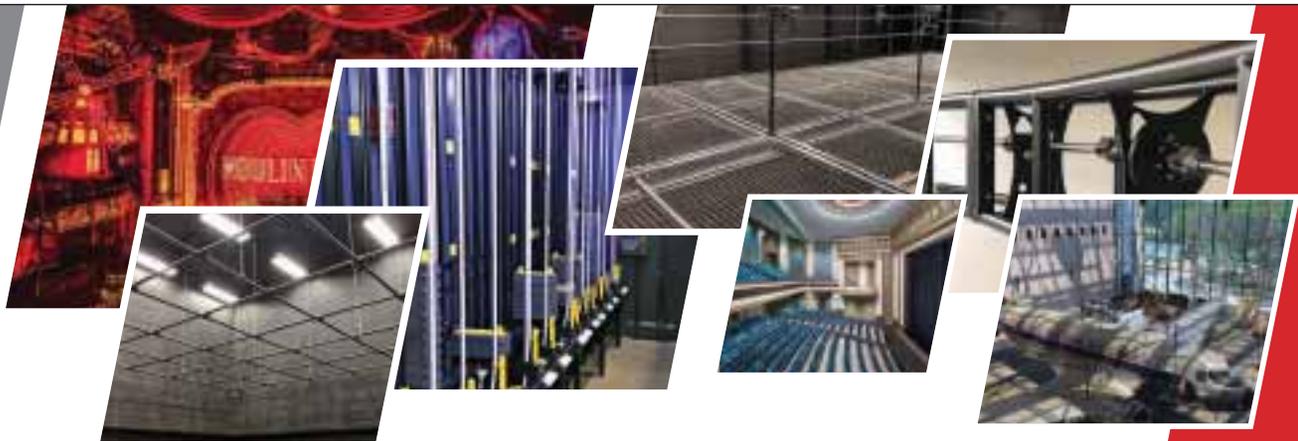
has generated lots of discussion and work. ES1.9 is shaping up to be a document providing an overview of crowd management theory and vocabulary, with application of the concepts to reasonably foreseeable risks at live events.

BSR ES1.7, Event Safety Requirements – Weather Preparedness, is a standards project to recommend ways to develop weather planning strategies to mitigate weather-related risks. Its scope includes both indoor and outdoor events. Weather is more likely to have an impact on outdoor events than indoor, but severe storms can put people indoors at risk too—and certainly can ruin the show. The last public review on this ended on Christmas Day, and received useful comments from people at the National Oceanic and Atmospheric Administration, the folks who bring you the National Weather Service and the Weather-Ready Nation program.

BSR ES1.19, Safety Requirements for Special Event Structures, is a revision of the 2018 edition. The public review ending on Christmas Day netted no comments that required substantive changes to the draft standard. The working group is now voting to accept the document as an American National Standard.

## Floors Working Group

The Floors Working Group has five published standards and is working on a sixth: BSR E1.62, Minimum Specifications for



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Mass-Produced Portable Platforms, Ramps, Stairs, and Choral Risers for Live Performance Events. It's a new standard, a product specification, based on *DIN 15921:2015, Veranstaltungstechnik – Podeste und Zargen aus Aluminium – Sicherheitstechnische Anforderungen und Prüfung*. The working group letter ballot to accept it as an American National Standard is open as I write this, although there is one public review commenter who is adamant that the basis should be the *International Building Code*, not the DIN standard for these products.

## Fog & Smoke Working Group

The Fog & Smoke Working Group is voting by letter ballot to accept BSR E1.23, Entertainment Technology – Design, Execution, and Maintenance of Atmospheric Effects, as an American National Standard. It's a revision of the 2015 edition with the scope enlarged to include guidance on developing strategies to maintain an effect over the months or years of a long-running show or an extended motion picture shoot. There is also advice about adjusting TWA limits for long workdays and workweeks. The draft was offered for public review from 8 November through 23 December and received one comment, a comment from a Broadway performer who asked that we consider exposure limits, particularly in regard to particle size, and noted recent studies with e-cigarettes. However, specific

exposure limits are outside the scope of this standard. E1.23 is a standard for planning and doing fog effects, and those effects can be designed to stay within whatever limits are required or desired.

## Followspot Position Working Group

The working group is in the midst of voting to accept BSR E1.66, Safety Standard for Followspot Positions Erected for Short-term Use in Entertainment Venues, as an American National Standard. It's a standard covering the safety requirements for followspot positions in, or on, structures erected for short-term use—positions not covered by *ANSI E1.28*. The draft was offered for public review from 8 November through 23 December 2019, and no one commented. The working group is satisfied with it, no public review objections, so no problems to solve!

## Photometrics Working Group

Besides the BSR E1.54 color specification project mentioned with the Control Protocols Working Group, the Photometrics Working Group is working on BSR E1.69, Reporting the Low-End Dimming Performance of Entertainment Luminaires Using LED Sources. The project is a step in tackling the larger problem of anomalous dimming with LED luminaires. It is in early draft stages; the working group is trying to sort out whether it will only address

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reporting levels at various settings or will attempt to report the light output changes during a dynamic fade. Many LED luminaires behave very differently when doing a 3-second or a 30-minute fade.

## Rigging Working Group

As I write this four Rigging Working Group draft standards are being voted on to become American National Standards. BSR E1.2, Entertainment Technology – Design, Manufacture, and Use of Aluminum Trusses and Towers, describes the design, manufacture, and use of aluminum trusses, towers, and associated aluminum structural components such as head blocks, sleeve blocks, bases, and corner blocks in the entertainment industry. This is a revision of the 2012 edition. BSR E1.4-3, Entertainment Technology – Manually Operated Hoist Rigging Systems, is a new standard applying to permanently installed, manually operated hoists—hoists you crank. BSR E1.21, Entertainment Technology – Temporary Structures Used for Technical Production of Outdoor Entertainment Events, is a revision of the 2013 edition, and a companion document to the Event Safety Working Group’s ES1.19. Last is BSR E1.47, Entertainment Technology – Recommended Guidelines for Entertainment Rigging System Inspections, which is a revision of the 2017 edition.

But wait! There’s more . . . Two more Rigging Working Group

standards are in public review, with deadlines a few days after the Vernal Equinox. BSR E1.4-2 - 202x, Entertainment Technology – Statically Suspended Rigging Systems, is a new standard for dead-hung battens and grids. BSR E1.67, Entertainment Technology – Design, Inspection, Maintenance, Selection, and Use of Hand and Lever Chain Hoists in the Entertainment Industry, is another draft standard for things that move by muscle-power.

## Stage Machinery Working Group

The Stage Machinery Working Group has two active projects. The one making the most progress is BSR E1.64, Stage Machinery Motion Control. This would be a general control standard, suitable for application with wagons, turntables, lifts, and a lot of other stage machinery. The less developed project isn’t a formal project yet. It is an ad hoc task group to consider standards for what is being described as “definite-purpose stage machinery.” These are things like curtain traveler machines or small winches used to animate fabric panels or lift and lower light-weight chandeliers and other practical lighting. Do these low-power, relatively low-risk, stage machines need their own standard or standards, or are they already adequately covered by *ANSI E1.6-1, Entertainment Technology – Powered Hoist Systems*? Enquiring minds want to know!

All the standards I have mentioned here as being in public review



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are posted for review on the ESTA TSP website at <http://estalink.us/pr>. They might not be by the time you read this, but you might find something else there that interests you. Rarely is the public review list empty.

If you want to know more about what the working groups in ESTA's Technical Standards Program are doing, you can join any working group that interests you and that covers an area where you have a material interest. Please see the "Call for Members" sidebar for information on joining the working groups.

If your interest is in history, you can find approved working group meeting minutes going back over twenty years on the TSP website. Visit <http://estalink.us/working> for a page of all the working groups, links to their individual pages, and further links to the meeting minutes. ESTA's Technical Standards Program, like the Metal Rat, has been working with strength, determination, and resolution for over two decades to help people in the entertainment industry do exciting shows, but also to have peaceful lives. ■



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## A call for members

ESTA's TSP works to maintain a balance of the interests 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, dealer/rental companies
- **Electrical Power:** Anybody but users. We have too many users!
- **Event Safety:** Performing artists, insurance companies—anybody but general interest
- **Floors:** Designers, dealer/rental companies
- **Fog and Smoke:** Anybody but users. We have too many users!
- **Followspot Position:** Producers of any type, dealer/rental companies
- **Photometrics:** Dealer/rental companies, designers, general interest
- **Rigging:** General interest
- **Stage Machinery:** Dealer/rental companies

"Interest" means how the work of the group affects your livelihood or your health, and not that you find it interesting. The interest categories are relative to this material affect and to the subject matter of the working groups. Definitions for the interest categories can be found on the second page of the working group application forms, which are available at <http://estalink.us/evt6b>. Check them out—and see if any of the working groups fit your interests and expertise.

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