



Standards easier than Taylor Swift concert tickets

“TAYLOR SWIFT TICKET SALES CANCELLED amid high demand,” was the headline on BBC’s website, November 18. Three days later, US Senator Richard Blumenthal held a press conference outside the New Haven, CT federal courthouse to push for action against Ticketmaster, who’s online ticket sales platform had crashed. Blumenthal said he had signed a letter with colleagues to the Department of Justice calling for “structural remedies” including a break-up of the Live Nation/Ticketmaster merger approved in 2010.

The ticket sales debacle for Swift’s *The Eras* tour can be amusing for those who have no stake in the event, but the stakes are high for those who do. Besides the thousands of Swift fans angry or disappointed, there’s a lot of money in play. Swift’s *Reputation Stadium* tour in 2018 grossed \$202.3 million in North America, making it the highest-grossing US concert tour ever. The *Reputation Stadium* show was immense; this one will be, too. *The Eras* tour for 2023 is scheduled for a similar run with 52 shows in 20 cities in the US before touring internationally. The seating chart for the Gillette Stadium concert shows a stage the width of the field with a bridge running two-thirds the length connecting smaller stages to the main stage. It will require a lot of gear and a lot of people to plan the show, set it up, and run it.

I’m leading with Taylor Swift’s *The Eras* tour for two reasons. One, ESTA’s American National Standards—and standards written by a lot of other organizations (we are not alone)—help to make gigantic concert tours like hers safe and profitable. Two, I both wish our Technical Standards Program web pages had as much traffic as Ticketmaster’s and am thankful they don’t. No queuing for hours to download *ANSI E1.11, Entertainment Technology – USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard*

for Controlling Lighting Equipment and Accessories! And when you do get it from our website, the price you pay is \$0.00—infinite less than any Taylor Swift concert ticket. As of December 6th, 122,929 documents have been downloaded with a total retail value of \$3,896,735 by 20,184 users. That’s a lot of people, but only about a third the size of the crowd that will see one Taylor Swift show at Gillette Stadium.

We’ve had no working group meetings since the last edition of “TSP News,” but projects are moving forward. We’ve had five standards approved as American National Standards by ANSI’s Board of Standards Review (four of them published as of this writing) and posted nine standards for public review. Some received lots of comments; a few received none. Deciding what to do with the comments or lack of them will be on meeting agendas when we meet via WebEx in mid-January 2023.

Standards approved

The following documents have been approved as American National Standards since the last issue of *Protocol*.

ANSI E1.4-1 – 2022, Entertainment Technology – Manual Counterweight Rigging Systems, is a revision of the previous 2016 version. It applies to permanently installed, manually operated counterweight systems of stage rigging hardware for the raising, lowering, and suspension of scenery, lighting, and similar loads. The standard has been updated to reflect current technology; it no longer includes or recommends wire-guided systems for new installations. It’s published. You can download it for free at <http://tsp.esta.org/freestandards> or buy it for \$40 from ANSI and IHS.

ANSI E1.6-4 – 2022, Design, Inspection, and Maintenance of Portable Fixed Speed Electric Chain Hoist Control Systems in the Entertainment Industry, is a revision of *ANSI E1.6-4 – 2013*, splitting its scope into two parts (see *E1.6-5*, following) for ease of future development of the standard’s controls advice. It establishes the minimum requirements for the design, inspection, and maintenance of hoist control systems in the entertainment industry (not for hoists in shipyards, factories, or warehouses). This standard is focused on control systems using discrete signals that have a direct effect on the controlling relays, contactors, and indicators, without the aid of a programmable electronic system. It is a companion document to *ANSI E1.6-5*. The two standards work together to address different aspects of hoist control systems.

ANSI E1.6-5 – 2022, Selection and Use of Portable Fixed Speed Electric Chain Hoist Control Systems in the Entertainment Industry, is the companion document to *ANSI E1.6-4*. It and *E1.6-4* are available for free on the TSP website. “Free” means the whole two-part package costs you as much as one part—or you can buy *E1.6-5* from ANSI and IHS. Purchases from ANSI or IHS help support them and generate a royalty for ESTA.

ANSI E1.35 – 2013 (R2022), Standard for Lens Quality Measurements for Pattern Projecting Luminaires Intended for Entertainment Use, is a reaffirmation of what was first published in 2013. It describes a method for measuring stage and studio luminaire lens quality with emphasis on contrast and image

sharpness. It offers a way for presenting these results on a datasheet in a format that is readily understood by a typical end-user and that allows the end-user to compare lenses meaningfully. Without this standard, there is no way to describe how clearly a stage lighting instrument projects an image, other than by showing a person with the actual instrument and gobo. It’s published. The free download from the <http://tsp.esta.org> website include an EPS graphic file of the test pattern in three common gobo sizes. You can also buy the standard from ANSI and IHS, but you get only the standard itself from them.

ANSI E1.37-1-2012 (R2022), Additional Message Sets for ANSI E1.20 (RDM) – Part 1, Dimmer Message Sets, has been approved as an American National Standard. As of this writing, the updated version has not been published on our website, but, since it’s a reaffirmation, the update would only be of its approval date, copyright date, working group membership list, and the listing of “Investors in Innovation”—the people and companies that support the Technical Standards Program with their donations.

Standards offered for public review

The following documents have been posted for public review since the last issue of *Protocol*. The public review period is 45 days after the review notice is published in ANSI’s *Standards Action*, but your TSP staff put the documents on our server as soon as we file a request for the review notice with ANSI, which means they are generally available for 60 days. By the time you read this, these documents will all be out of public review, gone from the web page, but something else might be there. The short-cut is <http://estalink.us/pr>.

BSR E1.5, Medical Preparedness, helps identify the steps necessary to create a reasonable level of protection from medical hazards that can be created by, exacerbated by, or cause effective treatment delay as a result of the unique challenges presented by the special event environment. Its scope includes the assessment of specific medical hazards, and also addresses the potential impact to local medical services, which may be temporarily impacted by the specific needs of the special event. It’s not good to overwhelm the local hospital because you simply figured, “Oh, we’ll just call the hospital.”

BSR E1.20, Entertainment Technology – Remote Device Management over USITT DMX512 Networks, is a revision of the existing *E1.20 – 2010*. The revision is to clarify ambiguities, fix bugs, and incorporate some additional features. *E1.20* is an extension to USITT DMX512 and *ANSI E1.11* that allows for bi-directional communication on the primary data link. This allows a controller to discover RDM-enabled devices on the link, to set starting addresses and other configuration settings, and to request status messages. The project also is to reinstate *E1.20* as an American National Standard. It has lost that status due to being over-age. American National Standards have to be revised or reaffirmed no later than ten years

A call for members

You can become part of the team of people working to make the entertainment industry simpler, safer, and more profitable by joining a working group. The following working groups are looking for new voting members in these particular interest categories to help balance the interests in the working group.

- **Control Protocols:** General interest
- **Electrical Power:** Custom-market producers, designers, dealer/rental companies
- **Event Safety:** Equipment providers, performing artists
- **Floors:** Custom-market producers, dealer/rental companies
- **Fog and Smoke:** Dealer/rental companies and mass-market fog equipment manufacturers
- **Followspot Position:** Dealer/rental companies
- **Photometrics:** General interest, dealer/rental companies
- **Rigging:** Designers
- **Stage Machinery:** Users
- **Weapons Safety:** Equipment producer (weapons or projectiles), dealer/rental companies, insurance providers

“Interest” means how the work of the group affects your livelihood or your health, and not that you find it way-cool. The interest categories are relative to how you are materially affected by 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. The short-cut to those forms is <http://estalink.us/evt6b>. If you see any working groups that fit your interests and expertise, and you are in one of the under-represented categories, please join.

after their approval date by the ANSI Board of Standards Review. The 2010 edition is twelve years old—too old for an American National Standard or a guinea pig.

BSR E1.37-5, General Purpose Messages for E1.20, RDM, is to provide additional Get/Set parameter messages (PIDs) for use with the *E1.20 Remote Device Management* protocol. The public review package offered 128 JSON examples—as examples only. They are not the standard.

BSR E1.40, Event Safety – Security, addresses the various guest services and crowd control aspects that are encompassed by what we call “event security,” all of which serve a common function of establishing the behavioral expectations for the event, ranging from permissible item possession, access control, and behavioral management to crime prevention and an overall sense of safety for event attendees. This standard addresses active and passive security considerations. It distinguishes between private security staff and law enforcement. This standard helps reduce the risk of harm to event attendees and to their property, while helping to improve their on-site experience.

BSR E1.41, Recommendation for the Measurement of Entertainment Luminaires Utilizing Solid State Light Sources, is intended to be used for the presentation of photometric data for luminaires employing solid state light sources used in the entertainment and performance industries. This standard defines photometric data that may be presented on documents purporting to accurately describe the photometric performance of these luminaires when producing white and colored light.

BSR E1.42, Safety Standard for Entertainment Lifts, is a revision of ANSI E1.42 – 2018, *Entertainment Technology – Design, Installation, and Use of Orchestra Pit Lifts*. Stage and orchestra lifts are specifically excluded from ASME A17.1 *Safety Code for Elevators and Escalators*. The previous version provided a reference standard for the design, manufacture, installation, and inspection of orchestra pit lifts. This revision expands its scope to include stage lifts and other similar lifts. These lifts have widely varying requirements and operating conditions. Procedures for risk assessment and risk reduction have been added to accommodate these conditions. As a result, many sections have been reorganized and renumbered. To reflect the increased scope and more closely follow ASME A17.1, the title has also been changed to Safety Standard for Entertainment Lifts.

BSR E1.59, Entertainment Technology – Object Transform Protocol (OTP), 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. It covers data format, data protocol, data addressing, and network management. Data transmitted is intended to coordinate visual and audio elements of a production. The existing standard is being revised to include new modules for camera metadata.

BSR E1.71, Powered Curtain Machines, establishes requirements for the design, manufacture, installation, inspection, and maintenance of machines intended for the movement of

curtains. Curtains operated by these machines may be for scenery, performance, presentation, acoustical damping, museum exhibits, retail displays, and theatrical production. It includes the control systems, mechanical construction, and powertrain components of said machines. It also includes the track components that interact with the operating media, but does not include the curtain fabric construction, track, and load suspension system. It does not include curtain effect machines that require manually resetting or repositioning the curtain before the system may be used again (e.g. a Kabuki drop).

BSR E1.76, Tension Wire Grids, covers design and application criteria including the loading, self-weight considerations, transitions between levels, and suspension from the building structure. It provides deflection criteria for structural elements and the woven mesh. The standard offers guidance on openings, including trap doors and bays similar to loft-wells. It provides requirements for handrails and step units, and considerations for other accessories.

Another pitch for the Weapons Safety Working Group

The Weapons Safety Working Group will have its first meeting in January 2023. The purpose of the group is to create a guidance document or documents for the safe use of weapons or weapon-like props in entertainment event productions. It would cover prop weapons, such as those that look like firearms (whether capable of firing cartridges or not), edged weapons (e.g., swords and knives), and projectiles (e.g. arrows and darts). The standard would only cover weapons and weapon-like props used on stages, in motion picture studios, or on motion picture locations in the production of a staged or filmed event. It would not cover weapons used by security forces or carried by audience members or staff for personal protection. (No threat to the Second Amendment!) It also would not cover weapons used in sporting events, such as bullseye pistol or fencing competitions. The goal is to eliminate injuries and deaths from weapons or weapon-like props used in entertainment productions. The actor playing Hamlet should not actually die on stage.

So far, twelve people have submitted applications to join the Weapons Safety Working Group. Twelve is a good number, but it would be better to have a wider diversity of interests in the working group. See the “Call for Members” sidebar for a link to where you can access a membership application form for this and any of our working groups. ■



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