

2011 Year in Review: THE IMPORTANCE OF INSPECTIONS

If you rent, own or use temporary outdoor roof structures, then this ESG Report edition is targeting you. Please read it with an open mind.

It's December, winter is here, and the past year's summertime outdoor events are far behind you by now. It's time to start planning for next year, with equipment and staffing projections lurking underneath those piles of project documents you have to review for a bid that's due next week. "I'll get to it"... you say, but right now you have a standing appointment to address those regular daily business matters, while equally pressing project fires ignite with their usual flare, sure to interrupt at any time. That's business. That's entertainment.

Wake up. Look around. Several roof system collapses occurred this past season - one of them deadly - so our industry suffered a few black eyes along with those reminders that bad things can happen to really good people. Please take a moment to evaluate your current state of preparedness, and consider the following questions.

How many incidents did you experience this year, beyond what everyone's heard about?

Many incidents go unreported. These are land mines of avoidance; classic examples of why you should reassess your procedures to implement and enforce proactive measures so incidents don't happen (again).

How many near-misses did you have this year?

I think we've all seen things, overlooked or avoided things that in retrospect made us breathe a sigh of relief for the fact that it wasn't us...knowing it could have been. Reality check: those things we saw happened to someone.

When was the last time your system was inspected?

I don't mean the frequent inspection that might have happened last time someone looked at the end of a truss because they were bolting it together while assembling your most recent event. I mean when was the last time your system was inspected?

Section 6 of ANSI E1.21-2006 requires both frequent and periodic inspections. *Frequent* inspections are required prior to each use and immediately after an incident that may have caused damage. *Periodic* inspections are required at least annually and the system must be removed from service for this inspection. These inspections must be documented.

If your system is Aluminum, then ANSI E1.2-2006 also requires inspections. The requirements of both standards are consistent with each other in that they intend for the user to establish routine, regularly scheduled inspection and documentation procedures. Do you agree with that intent? It's an industry standard, whether you agree or not.

Do you have an Operations Management Plan (OMP)?

If the answer is no then you're being called out...right here, right now. In our opinion, there's no reason for not having a response plan to address foreseeable hazards. Repeat: foreseeable hazards. I think a lot of people consider these issues only to respond by thinking "that'll never happen to me."

It could happen to you. Consider that an operations management plan is nothing more than a choreographed script, to which our industry is inherently accustomed. As an industry we pride ourselves on being capable of reacting to the most adverse conditions under the most restrictive time constraints. That's entertainment.



Here at ESG, we've written several articles about Operations Management Plans, about preparedness, and about planning. If you read this article, then you're notified: work with the rest of the industry to keep our industry safe. In this respect nothing is as important to us as keeping the public and our readers aware of safety.

Do you have engineering documentation?

E1.21 also has extensive engineering requirements, from design through manufacturing. Analysis of the system is necessary for proof-of-design, to verify such critical information as payload capacity, and to determine the lateral force resisting system criteria. This analysis produces engineering controls which in turn support the administrative controls required to be detailed in the Operations Management Plan. Engineering analysis is required for compliance with ANSI E1.21. If you do not have this documentation, start with your system manufacturer. Most manufacturers maintain information on standardized system configurations, but if it's not readily available there, ask a structural engineer who specializes in these systems for assistance. If your system is customized in any way, that's all the more reason to get it. And, let's face it: engineering isn't cheap, but the alternative risk exposure costs far more, especially when lives are at stake.

Your engineering documentation must also contain detailed drawings of the system (its components and connections), especially critical load path elements and the lateral stability system – all are important detailing requirements.

Did you know that one engineering review cannot consider all possible load cases?

Each installation is different; each show has different production requirements and therefore different load cases placed on the system. Granted, uniformly distributed load (UDL) cases are generally easy to analyze, but are frequently challenging to replicate in an actual show condition. When UDL's are supplemented with point loads, each point load location changes the truss behavior. However, the real culprit in these load cases is the interaction between gravity loads and lateral loads, and this culprit lurks in the midst of all load cases, hiding in the member interactions. If you didn't understand this, ask someone to explain it to you, and then make sure you have your engineering processes in order, so you can in turn make sure your OMP is up-to-date.

Do you assign an on-site designated person to your shows?

The designated person is one who understands the system, its engineering and administrative controls, and is the person who will implement the OMP requirements when it's time. Section 5 of E1.21 requires a designated person on site at all times when systems are in use.



Have you noticed that many of these requirements come straight from ANSI E1.21? That's a good reason to get a copy from the ESTA Foundation, found here: <http://www.estafoundation.org/pubs.htm>

Go get them, read them, embrace them, and help promote them throughout the industry.



About the author: Richard Nix is ESG's division project coordinator. His diverse range of expertise includes that of stagehand and staff rigging supervisor in addition to rigging system design and installation. He is the author of many published technical articles relating to entertainment technology and has participated in PLASA-NA's standards development effort for over 16 years.

Have comments or suggestions? Send them to us.

We're listening.

On a related note, Entertainment Structures Group (ESG) recently participated in a round-table discussion with government regulatory officials and local industry stakeholders in Frankfort, KY on December 12, 2011. This meeting was organized through collaborative efforts of government officials, special events producers and event managers in order to evaluate key points of the Commonwealth of Kentucky's pending implementation of permit review, inspection and enforcement guidelines for special events, platforms, stages, tents and other temporary structures.

ESG's knowledge of code requirements and entertainment industry standards meant they had valuable insight to this discussion, from both a code compliance and a practical application perspective. Our own entertainment industry expert, (yours truly) Richard Nix, was invited to participate because of his experience and his ongoing contributions to PLASA standards development efforts on behalf of ESG.

Richard comments, "This is exactly the kind of collaboration we as an industry need to ensure our standards are publicized where they will make the most impact. It is a rare opportunity when enforcement officials proactively reach out in this way. This kind of teamwork will help establish a permitting review process that is easy to understand, yet considerate of both time and production enforcement considerations for special events hosted in Kentucky."

ESG is privileged to have this opportunity to contribute, but we also encourage our readers to stay proactive in these efforts too. Look for ways to voice your opinions locally, and remember to support the efforts we as an industry have worked so hard to develop and communicate over these past several years. Find ways to remind your local jurisdictions that our industry already follows existing standards, which have been developed on a consensus basis to exemplify the very best in our field.

We regularly promote that our industry sets and follows the highest standards of safety. We hope you're part of that industry. Thanks for reading.