Ladders & Fall Protection

Disclaimer: I am not a Certified Fall Protection Expert. I am not a Lawyer. I don't work for OSHA. I have no authority to 'shut you down' or 'cite' you. This author has, however, been providing Theatre Consulting services for over 30 years and have completed the OSHA 10-Hour program.

Many theatres have ladders that extend higher than 6' above the floor. OHSA requires that Fall Protection be worn whenever you are working in a situation that you could fall more than four feet (29 CFR 1910 Subpart D - General Industry) or six feet (29 CFR 1926.500 - Construction). That 15' ladder to the raised Locking gallery, or 50' ladder to the Gridiron, easily fall into that category. Other spaces that may not be so clear are boom tormentors lighting pipes that rise up maybe 6-8' above a balcony railing. On the balcony side you might fall 5-6' feet into the side aisle, on the other side, however, you might fall 20-30 feet into some seating.

Do you have one of those beam lighting pipes that span over the seating area? Need to straddle the seats with an extension ladder to get to them? Or maybe a beam lighting catwalk where the ceiling opening is rather far from the catwalk, so you lean-out to fit gel frames and do that last little bit of focusing?

Unfortunately, these are a common scenario in many theatres. It is likely that that facility was designed before the OSHA standards for fall protection were implemented, and it may be possible that your facility is not regulated by the OSH Act. You are correct to be concerned, as many accidents in the theatre are fall related.

What to consider as you seek a resolution to this issue:

The first issue you may encounter is that the management / administration may not want to do anything about the situation. This may stem from a variety of reasons / rationalizations:

- ∇ Your facility does not fall under OSHA regulation
- ∇ Your facility has a 'Blanket' exemption (aka 'sovereign immunity') from Liability (Texas Public Schools fall in this category)
- ∇ They don't want to spend the money to fix the problem
- ∇ They don't think that any body actually gets injured or killed due to falls in theatres

Of course, these are all misguided or uninformed perceptions.

- ∇ Even though your facility may not fall under OSHA regulation, many other nearby facilities like private theatres, commercial theatres (theme parks, night clubs, Vegas/Broadway shows), and private school theatres may well be subject to those regulations. And many theatres that your students may visit or progress to in the course of their studies or performances may well be operating under OSHA regulations. Why then, should they not be expected to understand the rules and regulations of that work environment? Why should they work in non-OSHA compliant spaces when there may be an OSHA compliant space across the street? Ignorance of safe working practices can endanger both themselves *and* those working around them.

- ∇ Schools may have some broad exemptions from being sued, but that should not be the driving force behind not fixing something that is clearly a know hazard. Willfully permitting or encouraging the students to perform tasks in an unsafe work environment would be largely indefensible in a court of law. In some jurisdictions you could even be personally sued for this.
- ∇ The cost of the fall protection system and (recurrent) training is miniscule to the cost of doctors, lawyers, accident investigators, and lives.
- ∇ The fact is: Many students, staff, performers, and even guests in the performing arts are injured and killed each year in fall-related accidents. People fall from catwalks, building steel, ceilings, balconies, stage aprons, platforms, scenery, and ladders all too frequently. Some incidents result in twisted ankles and sprained wrists – and some result in fatalities (citations are available if needed).

Many facilities that have "Emergency Plans" mistakenly believe that they have a "Safety Plan." An Emergency Plan is usually a plan to deal with an accident AFTER it has happened. The objective of any Safety Program is to prevent accidents from occurring. Recognizing that you have a hazard is the first step in preventing an accident.

Additional steps prescribed to deal with a hazardous situation are as follows:

1. Remove the Hazard. This may not be practical since you require the ladder to access the Catwalk, Gridiron, Box Boom, etc.
2. Install Administrative Controls. These would be guards to prevent access except by authorized personnel. This is commonly done for ladders. It usually involves installing a hinged metal cover over the lower 10' or so of the ladder so that it cannot be accessed without first being unlocked. If a ladder cage is installed (see next item), then a hinged locking cover over the lower cage portal is also common. Other related administrative controls may include making sure that climbers have the proper shoes, gloves, and hard hats; that pockets are emptied ALL loose items (phones, coins, pens, etc.); and that ALL tools and eyeglasses are secured with lanyards.
3. Implement Engineering Changes (i.e.: Install Safety Hardware). This may involve more than one solution. Common solutions are ANSI standard cages around ladders to reduce the fall-back potential. More robust solutions involve climbing harnesses with either ratcheting ascenders that track along a pole or cable, or a retractable fall arrestor that tracks the climber's position (this author's personal favorite – easiest to use and install).
4. Training and Administration. You must be trained on how to properly don the climbing harness, how to secure yourself to the safety system, and how to inspect the equipment before each use. If students are going to be using the equipment, then thorough records of their training and parental permission must (not should, MUST) be kept.

To get your facility set-up with the correct type of fall protection equipment your management / administration should employ a 'Certified Fall Protection Consultant' (just plug that term into Google). Some salesmen for companies that sell fall protection equipment are certified, some are not. Some consultants are 'independent', in so much as they do not sell any equipment — they only specify it. This keeps their financial interests in the solution clear.

With something as important as this, it is imperative that you have a clean paper trail that shows due diligence on your part. Record keeping should begin now. Also important is that the solution be conducive to the theatre working environment. If it is impractical or uncomfortable, it will be disregarded. Your fall protection system designer must understand the (theatre) work environment and visit your site to observe the existing conditions – this cannot be done via faxes, phone calls, and e-mails.

More subtle things involve colors:

- A black climbing harness may be appropriate for a technician on a truss-spot during a show where they might be seen by the audience; whereas a yellow harness for general operations makes the worker MORE visible and easier to keep track of.
- If a ladder is up-stage and may not be masked by the draperies, then it may be painted black; but an off-stage or downstage ladder will not be seen by the audience and should be painted white or yellow. Ideally, the climbing rungs should be painted with photo-luminescent paint so workers can find their way down from the upper areas of the theatre during a total power failure.

This article is to provide you with a basic outline of the tasks before you. From this author's experience, if you have fall protection issues in your theatre, then you may well have many more personnel safety issues. Please feel free to contact **Teqniqal Systems** at any time if you would like to explore a more comprehensive assessment of your facility. Safety involves everyone – performers, technicians, managers, and audience.

A final note:

OSHA, ANSI, NFPA, and NEC standards and rules are minimum requirements, *not* maximum requirements – you can*, and are encouraged* to do more than just the bare minimum that the law allows.

Additional Resources:

OSHA (www.OSHA.gov) Fall Protection 29 CFR 1910 Subpart D

OSHA (www.OSHA.gov) Fall Protection 29 CFR 1926 Subpart M, also see 1926.500

OSHA (http://www.osha.gov/SLTC/fallprotection/index.html)

OSHA (http://www.osha.gov/SLTC/etools/construction/falls/fallarrest.html)

OSHA (http://www.osha.gov/SLTC/etools/construction/falls/ladders.html)

NIOSH (www.cdc.gov/niosh)

NIOSH http://www.cdc.gov/niosh/docs/video/2009-108d/default.html (video about fall protection)

NIOSH http://www.cdc.gov/niosh/docs/2004-101/chklists/r271a~1.htm (self-inspection checklist part 1)

NIOSH http://www.cdc.gov/niosh/docs/2004-101/chklists/r271b~1.htm (self-inspection checklist part 2)

NIOSH http://www.cdc.gov/niosh/docs/2004-101/chklists/r271c~1.htm (self inspection checklist part 3)