Stepping Up Ladder Safety

Rules and Best Practices for Rolling Ladders and Work Platforms

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Of all the complex and technical tasks that aircraft maintenance personnel accomplish in a given day, climbing up and down a ladder seems like the simplest of undertakings. However, the World Health Organization (WHO) reports that each year in the United States there are more than 164,000 injuries treated in emergency rooms and 300 deaths that occur as a direct result of falls from ladders. Framed another way, the United States leads the world in total number of ladder related deaths each year, with most falls occurring from heights of ten feet or less. Given these harrowing statistics, it is easy to understand why ladder related citations remain a permanent fixture on the Occupational Safety and Health Administration's (OSHA) "top ten" list of most frequently cited violations (currently occupying the #6 spot on 2018's list).

Faced with these overwhelming statistics, many aviation facilities believe that a cursory internet search for OSHA compliant ladders is all that is needed to protect their personnel and ensure compliance with existing regulation. However, a quick perusal of the more than 64 million results that emerge from this internet search is bound to leave the most voracious speed-reader confused about how to best proceed. In view of the ramifications that can result from non-compliance, it is imperative that aerospace facilities are educated about applicable regulations and best practices.

To begin, in 2017, OSHA issued its final rule on *Walking-Working Surfaces and Personal Fall Protection Systems* (29 CFR part 1910, subpart D). The aim of this final rule was to better protect workers in general industry from hazards by aligning regulation with advancements in best practices and technology. Some of the most significant changes to emerge from this new regulation were the alterations made to the safety requirements for mobile ladder stands and mobile ladder stand platforms, two equipment staples popular with aviation maintenance professionals.

In an effort to establish greater continuity, OSHA took the publication of this new rule as an opportunity to provide clearer and more concise definitions for words that are utilized across multiple industries. More specifically, it defined mobile ladder stands (often referred to as ladder stands or rolling ladders) as a "mobile, fixed-height, self-supporting ladder that usually consists of wheels or casters on a rigid base with steps leading to a top step. A mobile ladder stand also may have

handrails and is designed for use by one employee at a time." The new rule also went on to define mobile ladder stand platforms (often referred to as work platforms) as a "mobile, fixed-height, self-supporting unit having one or more standing platforms that are provided with means of access or egress." Given the fact that the vast majority of aircraft maintenance occurs at elevated levels, it is easy to understand why aerospace facilities rely heavily on these pieces of equipment to get their technicians within arm's reach of the task at hand.

Facilities that choose to utilize mobile ladder stands and/or platforms in the maintenance of their aircraft have an obligation to ensure that the elevated equipment complies with the following OSHA regulations (listed in no specific order):

- The steps of the mobile ladder stand or platform must have: a step width of at least 16 inches (41 centimeters); a rise of not more than 10 inches (25 centimeters); and a depth of not less than 7 inches (18 centimeters). Additionally, steps must be uniformly spaced and arranged.
- The steps and working surfaces on the mobile ladder stand or platform must be slip resistant. Slip resistant surfaces must be either an integral part of the design and construction of the mobile ladder stand or platform or added as a secondary process or operation (i.e. dimpling, knurling, shot blasting, coating, spraying or applying durable slip resistant tapes).
- Mobile ladder stands and platforms must be capable of supporting at least four times their maximum intended load. Additionally, the wheels or casters on the stand or platform must be capable of supporting their proportional share of four times the maximum intended load (in addition to their proportional share of the unit's weight).
- Mobile ladder stands and platforms that have wheels or casters must be equipped with a system to impede horizontal movement when an employee is on the stand or platform. Additionally, mobile ladder stands and platforms cannot move when an employee is on it.
- Mobile ladder stands and platforms with a top step height of four feet (1.2 meters) or more must be equipped with handrails that have a vertical height of 29.5 inches (75 centimeters) to 37 inches (94 centimeters) when measured from the front edge of a step.
- Handrails must be installed on every open side of the mobile ladder stand or platform, excluding entrances. Exceptions to this rule can be made when the ladder or platform is up against another vertical surface.
- Any guardrail system that is protecting a ledge that poses a fall risk (i.e. any instance where a tool or piece of merchandise could fall off the ledge and hit a person or piece of machinery below) is required to have 3.5-inch toe board installed along its base.
- The maximum work-surface height for mobile ladder stands and platforms cannot exceed four times the shortest dimension of the base without additional support.

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Investing in rolling ladders and work platforms that comply with OSHA's regulations is the first step in providing a greater level of safety for the people and property at an aerospace facility. However, optimal levels of safety cannot be achieved through OSHA compliant equipment alone. When left to their own devices, aircraft personnel may unknowingly make choices that place them and the company's equipment in harm's way. For this reason, aerospace facility management should consider investing in educational programs that inform staff about best practices.

While the frequency of educational programs will vary depending upon a facility's needs and available resources, these safety programs should cover a variety of topics, touching on everything from ladder/platform maintenance to proper ascension/descension techniques. For instance, when using a rolling ladder or work platform, it is always best to use a "buddy system." Trying to carry all the equipment for a job to top of the ladder or platform in one trip is dangerous and often results in slips and falls. The likelihood of injury can be greatly reduced by having one person on the facility's ground floor that hands tools and parts to the technician on the ladder or platform. Additionally, this approach drastically reduces the number of trips that an employee needs to make up and down the ladder, increasing task efficiency.

Given all the information that is available about OSHA regulations and best practices, it is easy to become overwhelmed when working to ensure your company's compliance. If you are unsure if your equipment meets OSHA's standards, do not hesitate to consult with an expert. In addition to having a wealth of product knowledge, these ladder and platform specialist can provide insights into the content that should be included in a safety training program. Their expertise can go a long way in helping you create a safer, more productive work environment.

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