



**Lighthouse
Safety**

Getting you home.

Eliminating Swing Fall and Providing Maximum Coverage for Overhead Fall Protection in Aviation Applications

There are many different aircrafts today with differing heights from the wings, fuselage, vertical and horizontal stabilizers to the ground. Maintenance of these aircrafts often require people to work at heights. Due to the variations in aircrafts and continual upgrades to aircrafts, it can be a challenge to have a fall protection system that will accommodate these changes. The key to solving this dilemma is to have a completely flexible system which will limit the fall distance regardless of a person's position on the plane.



Figure 1- Traveling Bridge Fall Protection System

Traveling bridge fall protection systems are the systems to remedy this issue. A traveling bridge fall protection system consists of a rigid horizontal rail known as a bridge, which is attached to runways at either end. The bridge has a trolley that allows users to travel the full length of the bridge, while the bridge also travels the full length of the runways. This allows for complete coverage of the hangar floor, eliminating swing falls. The runways and bridge constitute a rigid system that provides some of the lowest fall distances available, especially when combined with a class "A" self-retracting lifeline.

When designed properly the company, with proper training in procedures, will have the ability to move both the bridge and trolley as they change positions around the aircraft. This allows the anchorage point to remain directly overhead at all times, eliminating

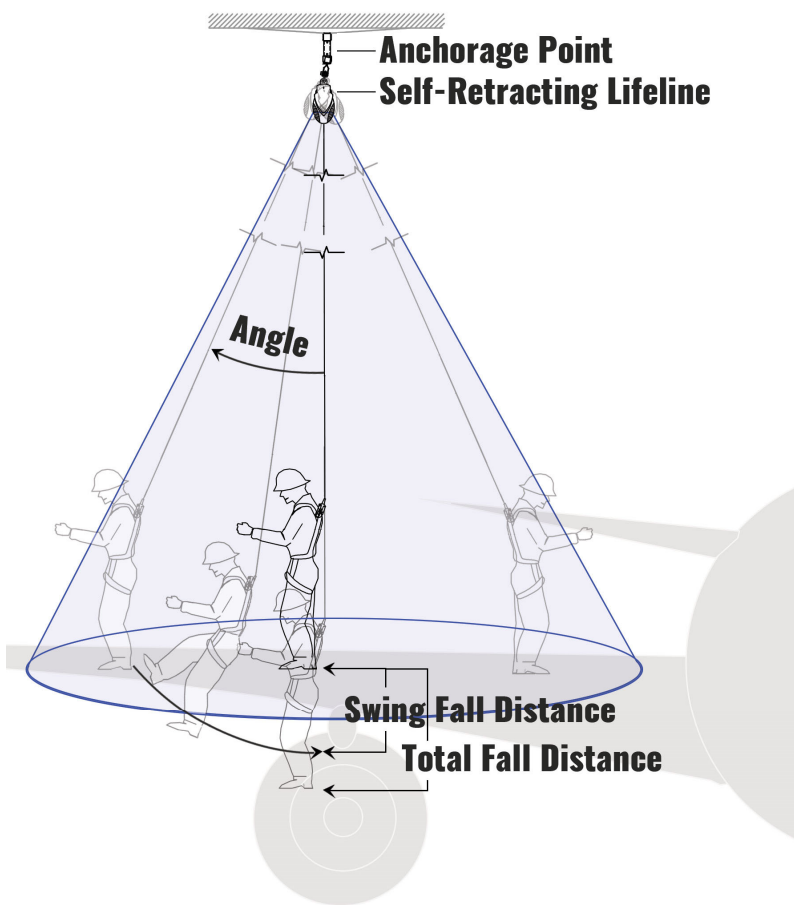


Figure 2- SWING FALL DISTANCE

additional fall distance due to swing falls. ANSI Z359.2 defines swing fall as, “A pendulum-like motion that occurs during and/or after a vertical fall. A swing fall results when an authorized person begins a fall from a position that is located horizontally away from a fixed anchorage”.

Manufacturer’s require you to stay within 30 degrees of your anchorage point. Many aerospace companies have restricted this motion further by reducing the 30 degrees to 15 degrees from their overhead anchorage. Resulting in a reduction of your MRC (minimum required clearance). This is safer for the employee and aircraft they are servicing.

When a user falls while attached to a fixed overhead anchorage, gravity will move the user back directly under the anchorage point. This can create several problems for the user as there may be objects obstructing the swing movement. This pendulum-like effect will allow the user to fall an additional distance, the swing fall distance, causing the user to make contact with any obstruction or with the ground.

ANSI Z359.0 2.191 defines swing fall distance as “The vertical drop in height experienced by the worker using a fall arrest system from the onset of the swinging motion to the lowest point reached during the swing.” When a traveling bridge fall protection system is used the anchorage stays overhead eliminating swing fall making these systems the superior choice, when minimal fall distances and maximum mobility is required.

Collaborated efforts by Kaylie Deering, General Manager for Lighthouse Safety and Michael Bailey, P.E., SECB the director of Engineering and VP of Operations for Flexible Lifeline Systems. Kaylie and Michael have a combined experience of over sixty-five years in designing/consulting of Fall Protection Systems and are voting members on ANSI Z359 Fall Protection and Related Systems Committee.