An Analysis of a Fall Restraint Protection System for an Airport Jet Bridge
for
East Island Aviation & Airport Bridge Co.
Performed by FDRSAFETY

Executive Summary

East Island Aviation (EIAS) & Airport Bridge Company (ABC) have developed a Fall Restraint Protection system to protect employees while performing maintenance on Airport Jet Bridges.

On Friday December 7, 2007 an onsite inspection of the Fall Restraint Protection system demonstration took place at Louis Armstrong New Orleans International Airport. Representatives from East Island (EIAS), Airport Bridge (ABC), and FDRSAFETY were present to evaluate and discuss design, application, and implementation of this system.

The Fall Restraint Protection design demonstration consisted of two horizontal lifelines mounted on each tunnel of the Jet Bridge, a cable lanyard, and a body harness on a 300lb mannequin.

The deflection of line, cable, and harness were within acceptable tolerances. Limits and tolerances of travel were also identified and they will need to be adjusted as design issues arise for various bridges.

Compliance Review per OSHA Standard 29 CFR 1926.500.

The following information refers to fall restraint compliance with OSHA's construction fall protection regulations found in 29 CFR 1926.500 through 29 CFR 1926.503. (OSHA's 29 CFR 1926.500 fall protection regulations DO NOT apply to general industry applications). Maintenance operations in the airline industry are generally covered by the regulations found in 29 CFR 1910. (OSHA's general industry regulations do not contain specific specifications for fall restraint systems.)

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Employers must provide and install fall protection systems for employees who are exposed to falls of more than four feet where standard guardrails cannot be provided.

As is evident by this analysis, the design & manufacturing team of (ABC) and (EIAS) has provided a plan and framework for compliance with fall protection requirements.

FALL RESTRAINT SYSTEM

- Connectors shall be dropped forged, pressed or formed steel, or made of equivalent materials.

- Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

- Dee-rings and snap hooks shall have a minimum tensile strength of 5,000 pounds (22.2 kN).

- Dee-rings and snap hooks shall be proof-tested to a minimum tensile load of 3,600 pounds (16 kN) without cracking, breaking, or taking permanent deformation.

- Snap hooks shall be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snap hook by depression of the snap hook keeper by the connected member, or shall be a locking type snap hook designed and used to prevent disengagement of the snap hook by the contact of the snap hook keeper by the connected member. Only locking-type snap hooks shall be used.

FDRSAFETY

Equipment shown meets all applicable OSHA standards.

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- Horizontal lifelines shall be designed, installed, and used under the supervision of a qualified person, as part of a complete personal fall restraint system, which maintains a safety factor of at least two.

This device is a two cable lifeline with 4 bolt anchors on either end of each tunnel.

- Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds (22.2 kN).

- Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses shall be made from synthetic fibers.

- Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2 kN) per employee attached.

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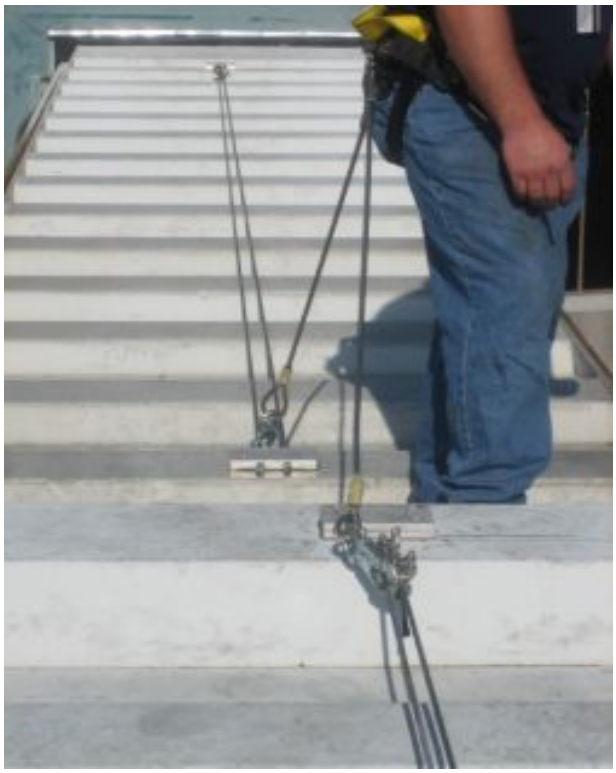

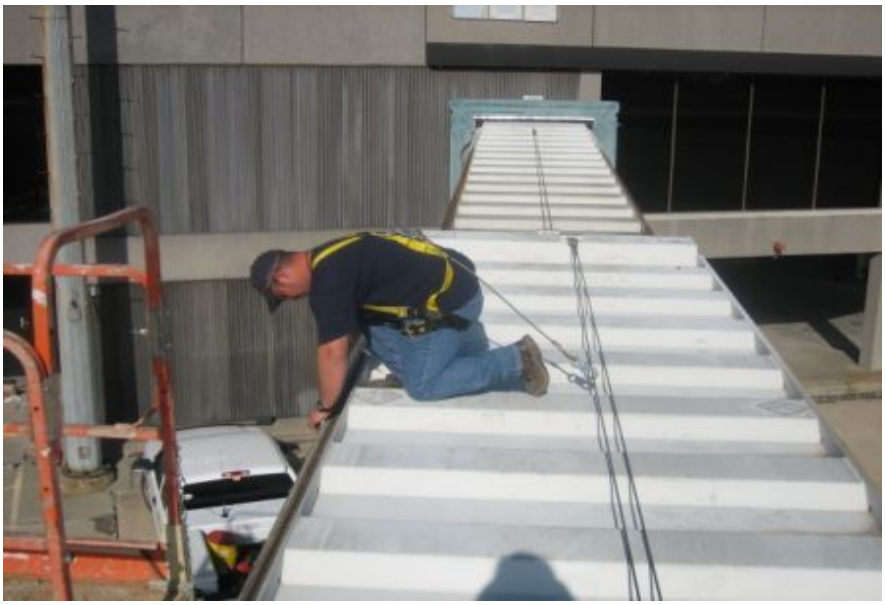

A 300 lbs. rock mannequin was thrown from the jet bridge and the line deflected 15 inches.

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Action item that was identified during the test which was subsequently addressed by the manufacturer:

The horizontal lifelines were slightly off-center on each tunnel. With each tunnel having varying widths, there was a concern about the wire rope lanyard/cable length for each employee.

FDRSAFETY believes these lanyards can be customized for each application with little or no difficulty and no compromise of design strength.

Conclusion:

This Fall Restraint Protection product designed and developed by East Island Aviation & Airport Bridge Co. for application to Airport Jet Bridges ***meets*** the criteria set forth by the applicable OSHA standards (General Duty Clause).

The design factor is based on calculations using the appropriate grade fasteners, hardware, and proper installation to ensure an anchor point that meets the generally recognized industry standards within the safety envelope.

Overall, this is a good, practical system that meets the generally recognized industry safety practice for fall restraint systems and is practical and easy to use. The system requires little maintenance and training.

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