

Editorial

Editors:

Murray Pollok
Ph: +44 (0)1505 850043
E-mail: murray.pollok@khl.com
D. Ann Slayton Shiffler
Ph: 512-869-8838
E-mail: d.annshiffler@khl.com

Deputy Editor:

John Wyatt
Ph: 313-894-2303
E-mail: john.wyatt@khl.com

Staff writers:

Lindsay Gale, Richard High,
Patrick Hill, Chris Sleight, Euan Youdale
Editorial director: Paul Marsden
E-mail: paul.marsden@khl.com

Production

Production director:

Saara Rootes
E-mail: saara.rootes@khl.com

Production manager:

Ross Dickson
E-mail: ross.dickson@khl.com

Display production assistants:

Philippa Douglas
E-mail: philippa.douglas@khl.com
Louise Stevens
E-mail: louise.stevens@khl.com

Design manager: Jeff Gilbert

Designer: Gary Brinklow

Digital production assistant:

Jamie Melville

Circulation

Circulation manager:

Siobhan Hanley
E-mail: siobhan.hanley@khl.com

Circulation executive:

Hayley Gent
E-mail: hayley.gent@khl.com

Business development director:

Peter Watkinson
E-mail: peter.watkinson@khl.com

Office and bookshop manager:

Katy Storkvik-Clay
E-mail: kathy.storkvik@khl.com

Publisher

James King

Vice president

TREVOR PEASE
KHL Group USA LLC
27992 N 115th Place,
Scottsdale, AZ 85262.
Ph: 480-659-0578
E-mail: trevor.pease@khl.com

Sales

National sales manager

PAT SHARKEY
1902 15th Avenue North,
Fort Dodge, Iowa 50501.
Ph: 515-573-8684
Fax: 515-573-4991
Cell: 515-570-8763
E-mail: pat.sharkey@khl.com

Deputy sales manager

BEV O'DELL
105 L Street, Lake Lotawana,
MO 64086.
Ph: 816-578-5689
Fax: 816-578-5368
E-mail: bev.odell@khl.com

National account executive

MATT BURK
Tel: 708-383-3755
Fax: 708-383-3760
Cell: 773-610-9467
E-mail: matthew.burk@khl.com

Harnesses and scissors

The debate over whether scissor lift operators should wear harnesses begins to heat up ...

If you are accustomed to looking at the "big picture" in your business, sometimes you can overlook what may seem like a mere detail. A good example is the issue of harnesses. It's a "detail" topic that safety specialists can talk about for hours (and hours), but it merits your attention just as much as interest rates or your banking arrangements.

Put simply, there is a keen debate ongoing about whether operators of scissor lifts should wear restraint harnesses. A large number of training specialists, including AWPT, the US training arm of the International Powered Access Federation (IPAF), think they are unnecessary and may actually increase the risks of having an accident.

As we report in this issue (see page 21), many argue that harnesses increase the tripping risk in a scissor and lead to a false sense of security (operators leaning out over guardrails, etc.). In addition, they are actually not required under ANSI/SIA, CSA or OSHA regulations. AWPT's Tony Groat puts this case powerfully in our article.

That might be the end of it if it were not for the fact that there is no consensus among the manufacturers about whether harnesses are needed in scissors. JLG says harnesses should be worn at all times in all circumstances, and the issue has become so tied up in legal liability issues that Genie was unable to get an official response to us in time for publication.

In an interview with *ALH* just a week after his appointment, JLG's new President Craig Paylor probably spoke for many when he expressed the straightforward view, "Why wouldn't you wear a harness in a scissor?"

In fact, this ambivalence among the manufacturers has led AWPT to adopt slightly different advice in North America than its parent IPAF is giving in the rest of the world. IPAF says no harnesses need to be used when working in scissors; AWPT, on the other hand, says harnesses are not normally required, but adds that you should follow the manufacturers' guidelines.

It is worth noting that there is no such uncertainty with boom-type platforms, where the obvious "catapult effect" means that everybody sees the need to wear a harness.

So, if you don't know already, maybe it is time to find out what your own staff are doing and what they are recommending to your customers. It's a detail that might have quite important consequences.

Co-Editors

**Murray Pollok
D. Ann Shiffler**

Correspondence or comments should be sent to:
American Lift & Handlers,
KHL Group USA LLC,
30325 Oak Tree Drive
Georgetown, TX 78628, USA
Or contact the editors direct using the details in the *who's who at KHL* panel on the left.



Tie-off or not?

Should operators use a harness and lanyard when working in a scissor lift? It seems that manufacturers, rental yards and training specialists are divided on the issue. ALH reports



When multiple workers are on a scissor platform working, it is essential that all adhere to safety regulations to ensure the safety of the entire team.

Those in the industry might think it would be easy for everyone to agree on whether a scissor operator should wear a harness. Unfortunately, the issue is not that simple.

The appropriate OSHA regulations for scissors (which are actually contained in the Subpart L Scaffold section of regulation 1926.451 (g)) require that workers raised above 10 feet have to be protected by a restraint system, fall arrest system or guardrail. Tying off is not required where there are guardrails, as on a scissor lift.

Similarly, the ANSI standard that covers scissor lifts - A92.6-1999 - does not require the use of a harness because the primary fall protection is the midrail and guardrail.

However, in practice, some major manufacturers and rental companies - JLG Industries and Sunbelt Rentals being the two most prominent - do require the use of harnesses in scissors. Others, meanwhile, think there should be a case by case approach, with a risk assessment taken before making a decision.

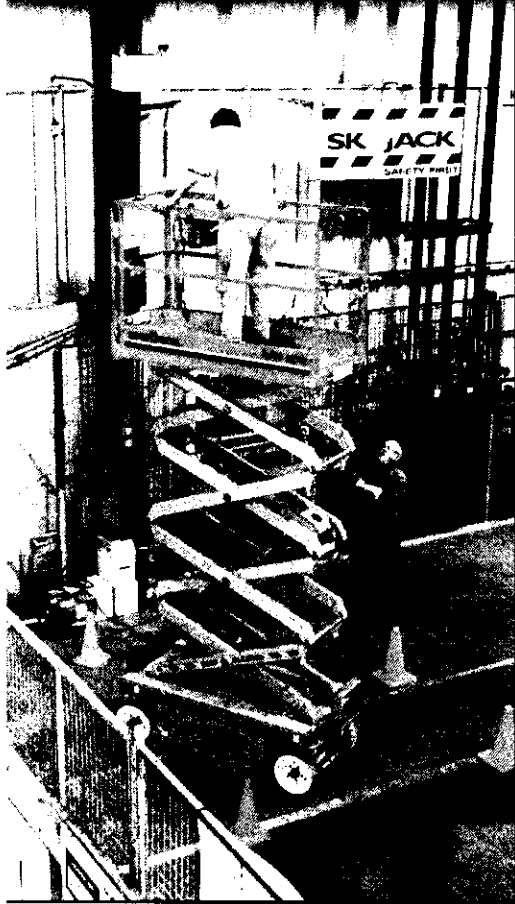
It is a debate that has recently been in focus because the International Powered Access Federation (IPAF) has launched a worldwide campaign to encourage the use of harnesses in boom-type platforms. Its recommendation in Europe and most of the world, however, is that harnesses are not required when operating a scissor lift.

However, IPAF's US subsidiary, AWPT, is providing slightly different advice for the US. Its recommendation for boom type platforms is the same - and is widely supported. But for scissor lifts, after saying that "it is not normally necessary" to wear a harness, it adds the caveat "except when the manufacturer recommends the use of, or requires the use of, personal fall protection equipment."

This qualification to its US advice follows inevitably from the different positions taken in the matter by North American aerial manufacturers.

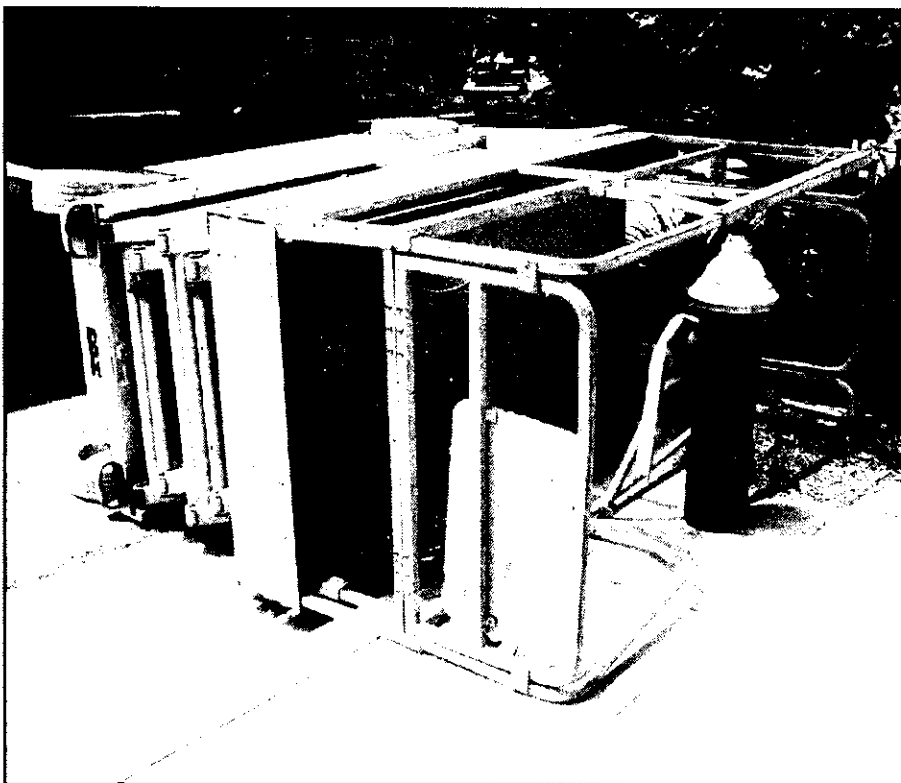
First of all, let's rehearse the arguments against wearing a harness in a scissor lift. Some suggest that the use of a harness and lanyard on a scissor can actually increase the risk of

AERIALS



Skyjack training under way. The manufacturer recommends not wearing a harness when operating a scissor.

Would it have been a good recommendation tying off on this machine? Picture supplied by Midwest Aerials.



an accident. There are several elements to this argument:

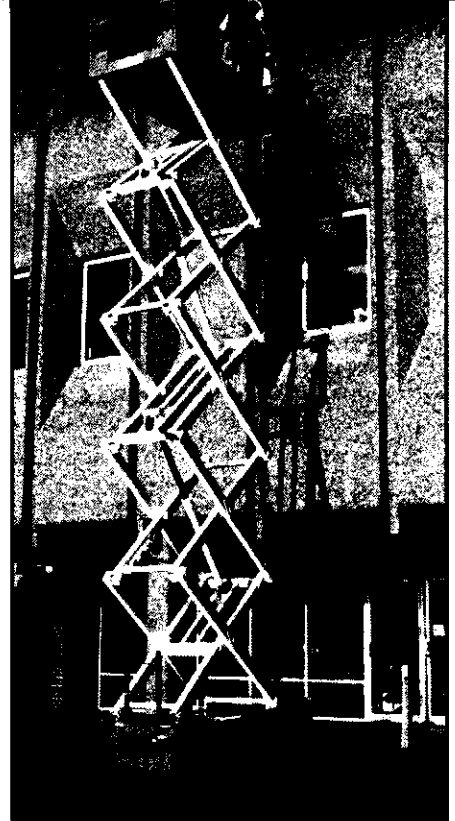
- A harness presents a false sense of security, especially for untrained users;
- It inhibits maneuverability and mobility of occupants;
- When more than one worker is on the platform, lanyards can be tangled or cause tripping hazards;
- The lack of mobility on the platform can restrict the operator from seeing all points around the platform when driving.

The AWPT's Membership Development Director Tony Groat says first and foremost, a risk assessment should be taken before the use of a harness and lanyard system.

"I will begin with the position that the use of harness and lanyards began to mitigate the risk on boom type lifts from the risk of catapult effect on operators," says Groat. "This risk does not exist with scissor lifts." He says there are exceptions for use of a harness and lanyard on a boom lift, such as when working over water, but believes a harness should not be used on a scissor type lift.

"As a standard for operation, I would say that I would likely not endorse the use of a harness and lanyard on a scissor type lift," says Groat.

The fact that manufacturers have anchorage points on most aerial lifts, including scissor lifts, despite that fact that some do not require their use on scissor lifts, speaks to the issue of site specific needs. "As a risk assessment, here are some potential issues: The size of a platform for a scissor lift can be exceptionally larger than that of a boom type lift," he says. "If you have a large platform, normally a higher capacity, there



Snorkel states the only time a harness is required on a scissor is when a particular site requires it or if there are specific local regulations.

are two or more individuals operating off this platform and they have on these long lanyards that are crossing one another. [This presents] a tripping or tangling hazard or they become restricted and cannot move. Otherwise they will have a short lanyard that will restrict movement and the use of the platform."

Another example he cites is if a worker is tied off and the lift has a relatively narrow platform with a horizontal side load that is very low (some machines can go as low as 100 pounds capacity) and if he reaches over the guardrail too far, his own weight could tip the machine over. And because that operator is tied off, he could literally go out of the lift and have the machine fall on top of him.

Ultimately, the AWPT would like there to be a uniform standard that the whole industry can abide to. At this time, no state has a specific requirement beyond the ANSI/OSHA regulations regarding the use of a harness and lanyard. Groat says it is within the realm of possibilities that a state mandate its own unique regulations on harness use, especially if perception grows that use with scissor lifts is appropriate.

"The desire is to define what the industry standard is that will best protect the operator of aerial platforms," says Groat.

So what do the manufacturers think? Skyjack's Director of Product Safety Brad Boehler is in agreement with AWPT. "Ultimately, our position is defined by what the standards state and on scissor lifts there is no requirement to wear a harness, as the guardrail is the primary fall protection system."

AERIALS

He does recognize that some rental yards and end users require the use of harness and lanyard. In that case, Skyjack recommends a fall restraint harness rather than a fall arrest system.

What about JLG and Genie? JLG was at least very clear, its spokesperson telling *ALH* that it requires the use of a full body harness and lanyard at all times, including for scissors. When asked if there were ever exceptions, the company says regardless, a harness and full body harness must be worn at all times. It would be fair to say that JLG wasn't too keen on having an expansive discussion on its position.

The sensitivity of the issue was highlighted when Genie told *ALH* that it was unable to provide a response to the question of wearing a harness in a scissor in time for inclusion for the article. We hope to report on Genie's views in our next edition.

Snorkel's position is that it follows OSHA requirements. Richard Hoffmeyer, vice president of engineering, says the only time a harness is required on a scissor is when a particular site requires it or if there are specific local regulations.

Meanwhile, the "Fall Protection Notice" issued by MEC Aerial Platforms in California says that the platform guardrail system on its scissor lifts satisfies the fall protection mandate set by ANSI A92.6-1999.

The document reads that if anchorage points for lanyard attachments are required by site authorities or other regulations, they should be used for work positioning restraint only within the platform.

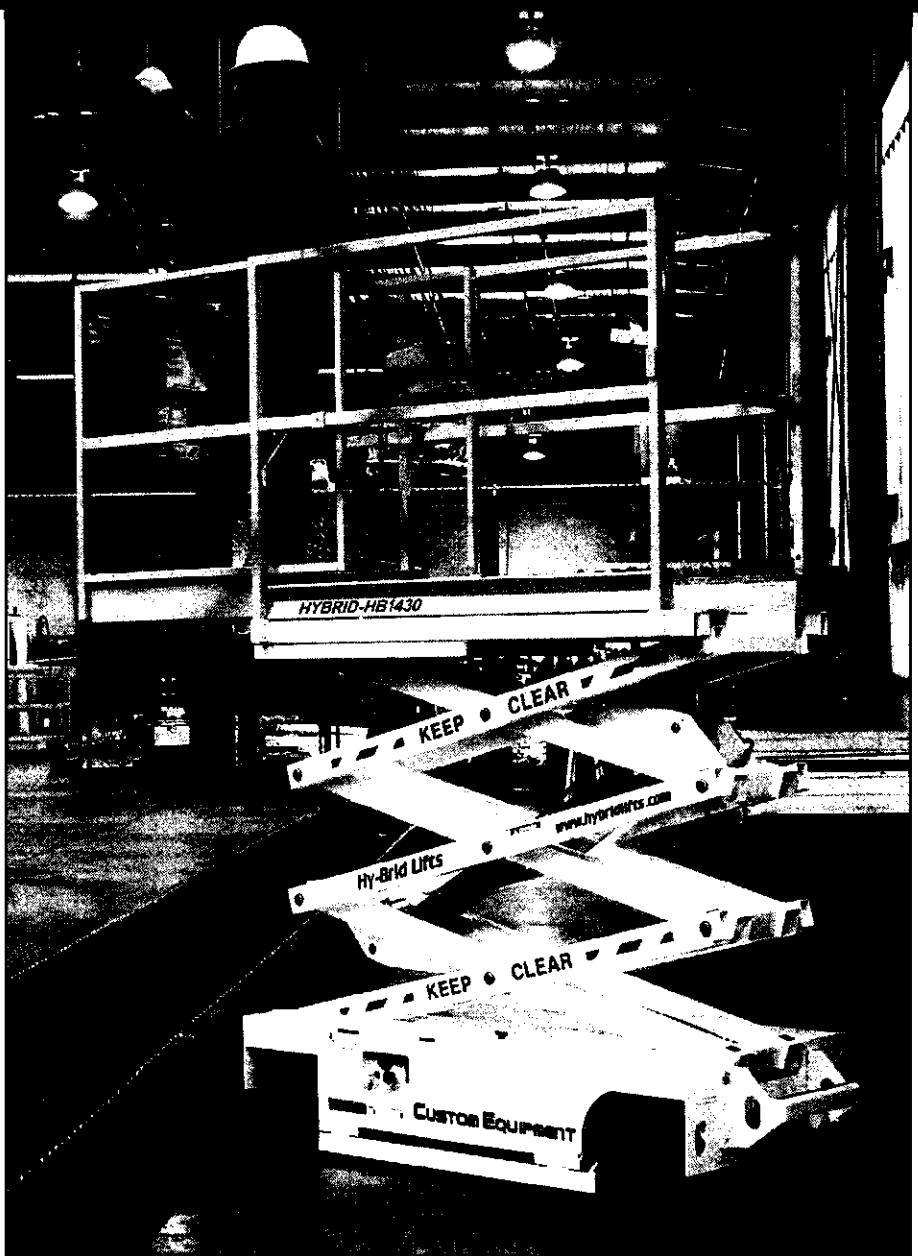
"With my product I recommend not having safety harnesses on," says Steve Kissinger, president and CEO of Custom Equipment. "I think they restrict you. With a fully enclosed cage, I feel the operators are safe."

Kissinger is all in favor of a uniform standard. He says there are a lot of differences in the ANSI, CE, and other regulations and that it would be a benefit to all the manufacturers if the standards were uniform. The company is in the process right now of creating its own safety program.

Rental yards are divided, as well. Sunbelt Rental's National Safety Director Jeff Stachowiak says it is company policy to wear a harness and lanyard with a scissor. "We require all Sunbelt Team Members to use a full body harness and shock absorbing lanyard attached to the manufacturer anchorage point at all times when operating an aerial work platform, including scissor lifts and push-around personnel lifts."

He says Sunbelt as a company feels that hooking to the anchorage point and the use of personal fall protection outweighs other hazards related to the harness and lanyard.

St. Louis's Midwest Aerial & Equipment on the other hand follows OSHA and does not require a harness and lanyard. According to its Safety Director Gary Riley, the guardrails offer fall protection and having the worker's feet firmly cemented in the platform ensure stability.



However, he also requires risk assessment before each job. He feels, like AWPT's Groat, that a harness and lanyard oftentimes will give a false sense of security to the uneducated operator.

He "whole-heartedly" supports the AWPT training and is in the process of becoming an approved center through the program.

Custom Equipment says it would be a benefit to all the manufacturers if the standards were uniform.

"There are only a few ways to fall over the top of a properly maintained 42-inch guardrail, and a scissor lift ejection is not one of them," says Riley. "If the operator is wearing fall arrest and is willing to take the unmanaged risk of gaining additional height the real question is, 'What if he falls?' If you want to truly help manage these fall hazards, educate your employees with a qualified instructor - do not train them with a 15 minute video." Midwest's training program hammers home the primary causes of serious accidents: platform stability, electrical risks, smash points, and more.

It is clear that everybody - manufacturers, rental companies and others - shares the same concerns about worker safety. But when it comes to the issue of wearing harnesses in scissors, would the cause of worker safety not be better served if everyone could agree publicly on what was best?

ALH

Yes or no?

We asked manufacturers if scissor operators should wear a harness and lanyard? Here are their responses:

JLG	Yes
MEC	No
Snorkel	No
Custom Equipment	No
Skyjack	No
Genie	Needed more time to comment

ANSI releases a new set of standards for fall protection equipment this Fall. Joseph Feldstein, a fall protection specialist with safety equipment manufacturer MSA, reports on the impact of the standards on the aerial lift industry.



Connector protection

The American National Standards Institute (ANSI) will soon approve for publication a series of new standards that set requirements for fall protection equipment and employer training for workers at height. These standards will directly affect the equipment used by workers in aerial lift devices.

The current national voluntary consensus standard for personal fall arrest equipment used in general industry is ANSI Z359.1-1992(R1999), "Minimum Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components." Around June, a new series of fall protection standards will be released that become effective on October 15, 2007 (see sidebar).

Equipment requirements have been expanded now to include work positioning and restraint, as well as fall arrest. The expanded scope contains specifications for strength and performance that are consistent across the family of standards.

Important changes in equipment design and testing include the following:

- Gate strength for all snaphook and carabiner connectors will increase to 3,600 lbf, a ten-fold increase over current requirements,
- Twin-leg lanyards will be tested to resist a 5,000 lbf static load at the point of connection between the two legs, and
- Full body harnesses with frontal

attachment points will now be rated for limited fall arrest, up to a 2 feet free fall and a 900 lbf maximum arrest force.

The importance of connector gate strength

The first improvement in connector design occurred in the ANSI Z359.1-1992 standard with the requirement for self-closing and self-locking connectors. Current designs of snaphooks on fall protection lanyards greatly reduce the potential for accidental disengagement, or "roll-out." However, the gate of the snaphook or carabiner has traditionally been the weakest point in the fall protection system.

In some applications, including tie-off in aerial lift devices, the compatibility of the snaphook with the anchorage connector must be carefully evaluated to ensure that the gate of the snaphook cannot be loaded in such a way that pressure on the gate could cause the mechanism to be forced open in a fall.

The new standards will require snaphooks and carabiners to withstand a static load of 3,600 lbf, or twice the maximum loads permitted in a fall arrest system. This will ensure that the entire fall protection system will have at least a 2:1 factor of safety at each element in the system exposed to potential fall arrest forces.

The increased strength of the gate mechanism in snaphooks and carabiners will:

- Significantly reduce the potential for accidental disengagement of the fall protection system, and
- Provide greater latitude in making compatible connections.

With the higher gate strength, snaphooks and carabiners can now be attached to a variety of anchorage connecting means that were previously not compatible due to their size or shape. Please note in the picture above that the strength of the anchor and anchorage connector must still meet the requirement for 5,000 lbf tensile strength (or two times the maximum load, when certified) as described in ANSI standards and OSHA regulation.



THE AUTHOR: Joseph Feldstein is manager of technical services at MSA North America, a manufacturer of safety products. He has 17 years experience in product design and standards development within the fall protection industry. He currently serves on numerous committees.



Tie-off only to the anchor points identified by the manufacturer of the lift.

IN DETAIL

The new standards will be:

- Z359.0 - Definitions and Nomenclature Used for Fall Protection and Fall Arrest
- Z359.1 - Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
- Z359.2 - Minimum Requirements for a Comprehensive Managed Fall Protection Program
- Z359.3 - Safety Requirements for Positioning and Travel Restraint Systems
- Z359.4 - Safety Requirements for Assisted Rescue and Self-Rescue Systems, Subsystems and Components

Twin-leg lanyards are important safety components that are widely used in aerial lifts with large platforms. The twin-leg lanyard enables workers to maintain 100% tie-off while moving laterally to points of anchor within the platform. The increased testing required for twin-leg lanyards will ensure that the strength of these lanyards will be sufficient to withstand high impact loads at a junction which has been demonstrated to be a potential weak point on some twin-leg designs.

Improvements in the strength and performance of personal protective equipment do not eliminate



Twin-leg lanyards are important safety components that are widely used in aerial lifts with large platforms.

the need to exercise care in making connections in aerial lift devices. Some important guidelines include:

- Tie-off only to the anchor points identified by the manufacturer of the lift
- Read and heed all labels and instructions provided by the manufacturer(s) of the personal fall protection equipment.
- Follow all safety rules and procedures in your employer's program for safe use of aerial lift devices. These generally include the prohibition against standing on the mid-rail or top-rail of the lift and

maintaining approved connection with the fall protection system at all times when working at height.

The release of new standards for fall protection equipment coincides with similar improvements in the design of fall protection anchorages in modern aerial lift devices. The general consensus of best practice in the industry emphasizes fall restraint within the aerial work platform when working aloft. Restraint systems limit the operator's movements to a point where the person's center of mass remains below the top-rail of the lift platform or basket.

Whenever possible, select a fall protection system that enables the operator to perform their duties while tied-off to a suitable anchor within the work platform, but which prevents the person from falling outside the aerial lift device. As a general rule, if the operator must perform work outside the confines of the aerial lift platform, they should be tied-off to a separate fall arrest anchor located on an approved structural member, not to the aerial lift device.

In conclusion, new ANSI safety standards will provide workers in aerial lift devices with fall protection equipment that meets higher strength and performance requirements than ever before. To obtain copies or information about the new ANSI Z359 standards, contact the American Society of Safety Engineers. **ALH**

Do you need to be kept informed of all the latest news and views from the rental industry?



Then subscribe now to the
International Rental News
information package.



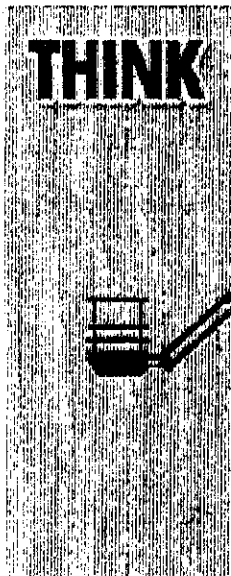
Subscribe & receive
FREE GIFT
worth over US\$200

The only magazine for the global equipment rental sector

TO SUBSCRIBE www.khl.com and click on subscriptions



GUEST COLUMN



"Fall" Protection Gives a Misleading Impression
Operators are more likely to be catapulted or thrown from the platform.



Tim Whiteman

Tim Whiteman is the managing director of the International Powered Access Federation (IPAF) and president of Aerial Work Platform Training, Inc. The following Letter to the Editor is in response to a call for topics and discussion points for the upcoming SAF-T Conference, which will be held July 20 at the Hyatt Regency Long Beach in Long Beach, Calif., immediately following the Scaffold Industry Association's 35th Annual Convention and Exposition.

June 6, 2007 – "Fall protection" has become the established term associated with the use of harnesses and lanyards on aerial lifts. Over the last few years, the International Powered Access Federation and its North American subsidiary, Aerial Work Platform, Inc., have been running a worldwide campaign related to the proper use of harnesses and the need to prevent operators from being thrown out of the platform. Notice that I did not use the word "fall."

People in our industry often talk about operators falling from platforms, which gives a very misleading impression of what actually occurs. The fact is most aerial lift fatalities are caused by operators being catapulted or thrown from the platform. Using the word "fall" in this context suggests a fairly gentle event in which the operator might even be able to grab hold of a railing that could save his or her life. However, the reality is that if a boom-supported lift is struck by a passing vehicle or tips because of ground subsidence, the whiplash effect will be so dramatic that even if the operator is holding the guardrails at the precise moment of the incident, he or she will not be able to retain a grip.

For this reason, IPAF and AWPT are insistent that operators wear full body harnesses with short lanyards in boom-type platforms. Below is the AWPT Technical Guidance that fully explains our position; it is also endorsed by the Scaffold Industry Association.

As a responsible industry, we should avoid the use of the word "fall" wherever possible, as it is so misleading. Instead, we should talk about the dangers of operators being catapulted or thrown from platforms. The only time people fall from platforms is when they have climbed onto the guardrails, which is something they should never do.

AWPT H1 Technical Guidance Safety Harnesses in Aerial Work Platforms

Boom-Supported Work Platforms (Boom Lifts), ANSI A92.5, and Vehicle-Mounted and Towable Work Platforms, ANSI A92.2

OSHA regulations require the occupants of a boom lift to wear personal fall protection equipment while in the platform. (When working from a boom-type aerial work platform, it is strongly recommended that a full

Subscribe now, for **FREE!**
Lift/Access 260 eMagazine
Lift/Access print publication

SEARCH SITE:
Browse Archive...

Guest Columns

"Fall" Protection Gives a Misleading Impression
Operators are more likely to be catapulted or thrown from the platform. [>more](#)

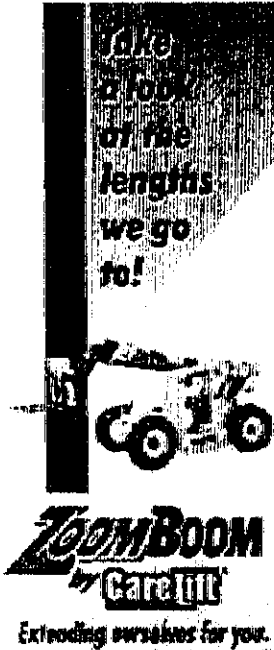
Florida Crane Operator Certification Update
Regional crane owners council advocates legislation [>more](#)

Publisher's Perspective

RFID Takes Industry by Storm Efficiency, safety

and longer component life are the product of the Rigging Industry's RFID embrace. [>More](#)

Having Access to Lifting Equipment Tower contractors face the challenge of leaving home to find work. *By Lucy Perry* [>More](#)



body harness with an adjustable lanyard be used to provide work restraint. The lanyard should be adjusted to be as short as possible (and may have a shock-absorbing section, if permitted by the AWP manufacturer).]

This would include:

- Boom-Supported Elevating Work Platform ANSI A92.5
- Vehicle-Mounted Elevating and Rotating Aerial Devices ANSI A92.2

Self-Propelled and Manually Propelled Elevating Work Platforms (Scissor Lifts and Vertical Lifts), ANSI A92.6 and A92.3

It is not normally necessary for personnel working from self-propelled and manually propelled elevating work platforms to wear personal fall protection equipment, except when the manufacturer recommends the use of, or requires the use of, personal fall protection equipment.

This would include:

- Self-Propelled Elevating Work Platforms ANSI A92.6
- Manually Propelled Elevating Work Platforms ANSI A92.3

The need for a fall protection system will be the result of a job specific risk analysis undertaken prior to work starting and taking into consideration the manufacturer's operator's instructions, as found in the operator's manual.

For more details, go to www.ipaf.org or www.awpt.org.

[Read our Privacy Policy](#)