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Job Hazard Analysis--Prevention Is Better Than a Cure...and an Accident, and a Citation, and a Lawsuit

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I recently conducted a webinar for owners and users of mast climbing work platforms (MCWP), and aerial work platforms (AWP) dealing with ways to reduce liability.

One of the terms I used was the Job Hazard Analysis (JHA), and, after the webinar, there were a number of questions about the JHA: 'When should I do one'? 'Do I have to do one'? 'I thought the GC did that'? 'How do I do one'?

Everyone had heard of the term, but for most that was the end of the conversation.

It was obvious from the questions that there was an element of confusion about the JHA, and that confusion could be costly. There are extremely good and important reasons why you have to complete a JHA, least of which is to protect you from liability post-accident, and the most important of which is to prevent the accident in the first place.

Increasingly on projects the requirement for a JHA arises. Contractors and owners of AWP's and MCWP's have a tough time with this request because, they say, 'it has never traditionally been a requirement', and even if it was they 'wouldn't really know how to go about it'.

The answer to those questions is:

It has always been a requirement and,
You really need to find out quickly how to compile one.

Most contractors and equipment owners can tell about some of the OSHA requirements which affect the equipment's use. They know about Subpart M (Fall Protection) and probably know about 1926.454 (Training), and there are regular citations written for non-compliance to these sections. However, most don't see the relevance of the 5(A)1 'General Duty Clause' to AWP and MCWP use.



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There are many citations written every month for non-compliance to the General Duty Clause which involve the use of AWP's or MCWP's.

The General Duty Clause says:

Each employer shall furnish to his/her employee(s) employment and a place of employment which are free from **recognized hazards** that are causing or are likely to cause death or serious physical harm.

The phrase "recognized hazards" is key. So, what's a "recognized hazard"? A hazard is recognized if the employer's INDUSTRY recognizes it. So, if the AWP or MCWP industry "recognizes a hazard" the employer has to protect the employee from it.

Where are these "recognized hazards"? Recognized hazards can be found in the relevant ANSI Standard for the equipment, manufacturer's manuals, and by conducting a Job Hazard Analysis.

ANSI A92.5 – Boom-Supported Elevating Work Platforms, as with other ANSI standards contains language to this effect. For example, in section "7.8 Work Place Inspection," ANSI lists a number of "recognized hazards" that one should be looking for during the work place inspection.

The final item on the ANSI Recognized Hazards list is "Other possible unsafe conditions." This is where the JHA is vital. The "Qualified" (OSHA definition) person should conduct a pre-use inspection of the job site, looking for evidence of "recognized" and "other possible" hazards. Recognized hazards are usually a result of previous incidents which have prompted the industry to include them in the ANSI list. "Recognized Hazards and Other Possible Unsafe Conditions" refers to job-specific hazards which will require some form of control and/or training to reduce them to a safe level. An example of this might be the presence of overhead steel beams which the platform of the machine has to maneuver in between. Extra Operator training and the use of an "involuntary operation prevention system," to prevent the Operator from being crushed between the platform guardrails and the steel beams, would be among the "control measures" used to ensure that this type of maneuver was safely done. The responsibility for the identification of these hazards falls to the Employer.

ANSI A92.5 – Recognized Hazards

- Drop-offs or holes, including those concealed by water, ice, mud etc.
- Slopes
- Bumps and floor obstructions
- Debris
- Overhead obstructions and electrical conductors
- Hazardous locations and atmospheres (reference ANSI/NFPA 505-1996)
- Inadequate surface and support to withstand all load forces imposed by the aerial platform in all operating configurations
- Wind and weather conditions
- Presence of unauthorized persons
- Other possible unsafe conditions.



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JOB SURVEY FORM - AERIAL WORK PLATFORMS

The example here shows a "job survey" for the proposed provision of boom lifts for a glass job. The "qualified person," having completed a comprehensive survey, has identified a potential hazard where overhead power lines may be in close proximity to the AWP equipment.

The risk needs to be assessed in order to determine if it is a danger and, if so, what action should be taken to eliminate the risk.

Use of a simple risk analysis matrix is a good way to consistently assess and identified hazards.

General Details:		Structure Details:		
Project:	New Office Block	Height:	75'	WALK THE JOB ASSESS ALL THE RISK PLAN FOR SAFE USE ASSESS FOR TRAINING DOCUMENT
Date:	5/4/2010	Length:	4 sides @ 225' each	
Author:	J. Smith	Type of construction:	Concrete structure	
Customer:	Build-It	Duration:	16 weeks	
Type of work:	Glass	# machines:	6	
Hazard Check List				
Check ground conditions for:		Comments/methods for risk reduction		
Holes	<input checked="" type="checkbox"/>	Holes in travel path - GC has agreed to backfill and compact.		
Bumps or depressions	<input type="checkbox"/>			
Debris	<input type="checkbox"/>			
Overhead obstructions	<input type="checkbox"/>			
Electrical lines	<input checked="" type="checkbox"/>	Power lines - Find voltage and determine approach distance from ANSI.		
Limited visibility areas	<input type="checkbox"/>			
Presence of chemicals	<input type="checkbox"/>			
Ground stability	<input type="checkbox"/>			
Underground voids	<input type="checkbox"/>			
Proximity to other equipment	<input type="checkbox"/>			
Potential for unauthorized use	<input type="checkbox"/>			
Any other possible hazards:				
Overhead cutting	<input type="checkbox"/>	Oxy-Acetylene cutting overhead, GC to co-ordinate trades to minimize risk		
Equipment Specification:				
Type:	Articulated booms			
Height:	90 FT			
Power Option:	Gas/Diesel			
Axle:	Oscillating			
Drive Options:	Four wheel drive			
Steer Options:	Two wheel steer			
Number of units:	Four			
Training/Familiarization:				
Is Operator Training Required? Yes - 12-14 people				
Notes: Training and familiarization is required for 12-14 people. Training should include specific approach distance information with regard to the overhead power lines on the job, and co-ordination with the GC to make sure that all backfilled areas are compacted and overhead cutting is not taking place above awp's.				

ANALYSIS MATRIX FOR IDENTIFIED RISK - AERIAL WORK PLATFORMS

		TYPE OF INJURY WHICH IS LIKELY TO OCCUR			
		1	2	3	4
PROBABILITY		MINOR INJURY (e.g. small cut)	SIGNIFICANT INJURY	SERIOUS INJURY	INCAPACITY OR POSSIBLE FATALITY
A	POSSIBLE BUT UNLIKELY	LOW RISK	LOW RISK	MED. RISK	HIGH RISK
B	POSSIBLE	LOW RISK	MED. RISK	MED. RISK	HIGH RISK
C	PROBABLE	MED. RISK	MED. RISK	HIGH RISK	HIGH RISK
D	VERY LIKELY	MED. RISK	MED. RISK	HIGH RISK	HIGH RISK

- LOW RISK** May require warning sign, and/or protective clothing (e.g. gloves)
- MEDIUM RISK** Will require training, or guarding, or both, or other forms of risk reduction. Whatever combination of measures is identified, the result must be LOW RISK
- HIGH RISK** Prevent or discontinue. Revise or replace task to achieve MEDIUM OR LOW risk.

The matrix vertical tab above shows A-D levels of probability that the identified hazard might become a reality. It ranges from 'Possible but unlikely' to 'Very likely'

The horizontal tab showing 1-4 indicates the level of injury likely to occur if the hazard should become an accident. It ranges from 'Minor injury' to 'Incapacity or Possible Fatality'.



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Taking the example of 'Overhead power lines' from the JHA the individual who has conducted the JHA has assessed the probability as A-'Possible' and the level of injury as 4 – Incapacity or possible fatality'.

This translates to a 'High Risk' hazard. The action required is two-fold. The hazard needs to be prevented or discontinued. Alternatively it could be revised or replaced to achieve a 'Medium or Low' rating, from where it can be controlled by training or guarding or other means.

The solution to this hazard might be:

1. Find out voltage of lines.
2. Refer to ANSI Approach Distance Table.
3. If boom lift proximity at any point of use is outside the approach distance, then training, physical barriers and signage could be used as a combined method of acceptable abatement.
4. If boom lift proximity at any point of use is inside the approach distance, then the power will require to be turned off or the use of the boom lift should be restricted through the use of physical barriers and signage from encroachment into the unsafe area.

Points 3 and 4 may restrict the movement of the boom into all areas it needs to get to. This is obviously a productivity problem, and there is the potential for operators, even after training, to try to get "just a bit further" to get the job done quickly. So, for this reason, a solution providing the required access is preferable.

A third option could be the best solution:

- Find out the voltage of the lines
- Co-ordinate with Power Company and GC to install 'sleeves' or 'blankets' over the power lines, to reduce the voltage, therefore decreasing the approach distance.
- Then control this distance with physical barriers, training and signage.

This allows ALL the work to be done safely and under controlled circumstances.

This is the best possible solution, providing a safe working environment, productivity and a process of analysis which will stand up to scrutiny.

Creating your own Job Survey Sheet and Risk Analysis Matrix, which are then used by a "qualified person" to identify and abate all the hazards on the job site, shows that you take your responsibilities seriously, it shows that you take the welfare of your employees seriously and, if the worst still happens, post accident it shows that you took "suitable and sufficient" means to protect your workforce.

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