

Working at height - questions



The engine is 2.85 metres tall meaning this worker is over 4 metres off the ground.



Note that both the worker, his hammer and the bolts being removed are unsecured.



Can you see the orange safety harness on the floor of the elevating basket?



Notice that the workers have now swapped places.



Following repeated complaints, this worker eventually put on the safety harness. Is it secured to an anchor point?

Overview

These pictures were taken by one of our employees from the window of a Boeing 777 aircraft about 20 minutes prior to scheduled take off from Houston International Airport. The two workers exposed themselves to serious danger over a period of about 15 minutes. Repeated demands were made by our employee to have the work stopped prior to the job being made safe. Risk Tool Box has written to the EHS Managers of both the airline and the ground engineering company concerned.

Questions

What is the main hazard?

Identify any secondary hazards?

What "people" triggers exist?

What "plant" triggers exist?

What "place of work" triggers exist?

What "planning" triggers exist?

Identify potential incidents

Identify potential consequences

Identify a prevention control

Identify an escalation control

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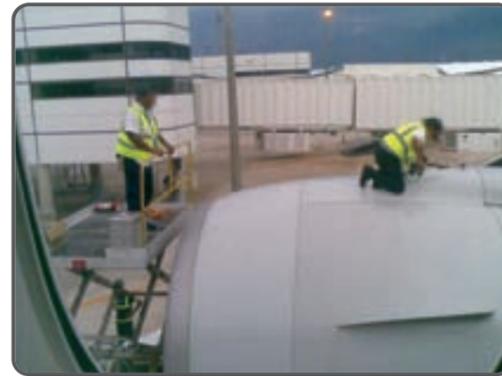
Working at height - answers



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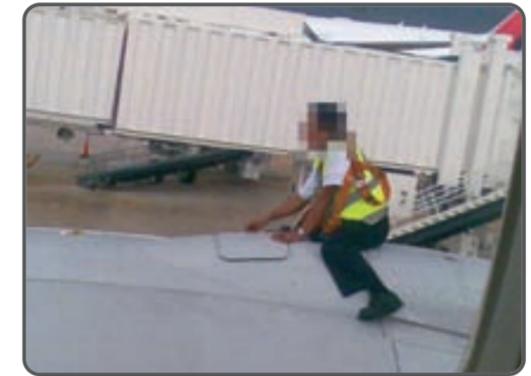
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Answers

Main Hazard

Kinetic energy - movement potential of the workers and the tools being used

Secondary hazards

Natural hazards - windy condition, high noise level

People trigger

Nobody stopping the job, high risk taking behaviour

Plant trigger

Unsecured tools, sudden movement of the aircraft

Place of work trigger

Wind gusts

Planning trigger

Rushing, no supervision, inadequate implemented JSA

Identify an incident

Dropping tools, falling people

Identify a consequence

Fatality, equipment damage, delay aircraft take off (cost)

Identify a prevention control

Speak out and stop the job before it starts

Identify an escalation control

Wear a harness attached to suitable anchor point

01/ Hazards



KINETIC

Uncontrolled falling of people and dropping objects, and uncontrolled movement of equipment



NATURAL

Natural hazards in the form of high winds, lightning, and extreme temperatures



BIOMECHANICAL

Biomechanical hazard associated with posture and body positioning



PSYCHO-SOCIAL

Fear of heights



ELECTRICAL

Electricity if live cables close-by



SUBSTANCES

Hazardous substances if working with these



RADIATION

Radiation sources from sunlight and also microwaves on communications towers



BIO-HAZARDS

Birds and insects

02/ Triggers

People

- » Lack of competence in use of Elevated Work Platform (EWP)
- » Fatigue
- » Rushing
- » Physically unfit
- » Loose clothing

- » Unauthorised access
- » Wearing jewellery
- » Fear of heights
- » Approaching too close to edge
- » Unsecured to anchor points
- » Unstable work posture (e.g., reaching, stretching)

Plant/equipment

- » Faulty equipment
- » Wrong type of scaffold/ Elevated Work Platform (EWP) or other high platform
- » Uneven/unstable ground
- » Lack of barriers
- » Lack of signage
- » Unsecured tools
- » Inadequate PPE
- » Lack of edge protection
- » Unsecured scaffold
- » Fragile flooring materials
- » Missing flooring materials

Place of work

- » Moving machines
- » Concurrent activities
- » Stormy weather
- » Darkness/night time
- » Extreme temperatures
- » Live electricity nearby
- » Slippery surfaces
- » Rain
- » Poor visibility
- » Poor housekeeping/untidy location
- » High platform erected on a moving ship

Planning

- » No JSA
- » No permit to work
- » Heavy tools/weights
- » Overloading high platforms
- » Lack of access control
- » Working in severe weather
- » Poor communications
- » Inappropriate platform for the work

03/ Incidents

- » Falling person
- » Dropping object
- » High platform collapses
- » Contact with live electricity - shock
- » Something collides with the high platform (e.g., car)
- » Person "freezes-up" from fear
- » Exposure to extreme ambient temperatures
- » Bird strike
- » Excessive body straining
- » Exposure to sunlight
- » Person hit by falling object

04/ Consequences

- » Fatalities
- » Permanent disability
- » Injury
- » Illness
- » Medical treatment case
- » First aid treatment case
- » Post-traumatic stress
- » Equipment damage
- » Loss of equipment
- » Pollution
- » Major Reputation impact
- » Minor Reputation impact

05/ Prevention Controls

Eliminate

- » Job is not started if not safe
- » Sources of live electricity are de-energized

Substitute

- » Use a better alternative to a ladder, scaffold or EWP
- » Bring work down to ground level
- » Sources of live electricity are identified and controlled (isolated)

Engineering

- » Provide a purpose -designed scaffold for each job
- » Checked and certified scaffold
- » Scaffold components comply with recognised standards
- » Erect the platform on ground that is even and stable
- » Barriers and signs used to control access
- » Secure anchor points
- » Install load-spreading devices to platforms
- » Build/used in accordance with standards
- » Ensure platform is always horizontal
- » Use mechanical lifting aids to haul materials up/down
- » Provide measures to increase or reduce temperature as appropriate
- » Provide radiant heat shielding

Administration

- » JSA is completed prior to the job
- » All permits in place
- » *Hazard Spotting*
- » People are well-trained
- » Well rested
- » Not drunk/drugged
- » Fitness tested
- » Clothing is tidy
- » Short-hair
- » Minimise distractions
- » Strict access controls
- » Adequate supervision
- » Visually inspect the platform before each use
- » Check for adjacent underground installations or excavations
- » Personnel have three-points of contact
- » Platform is not overloaded
- » Concurrent activities and moving machines are controlled
- » Restrict use until safety tags in place
- » No alteration without approved tagging
- » Restrict operation in severe weather
- » Periodic inspections
- » Do not transfer between high platforms via boards
- » Ensure there is sufficient space to carry out the activity safely
- » Ensure adequate lighting
- » Weather is assessed for storms and other extremes
- » Assess if activity will generate high noise levels
- » Positive housekeeping

06/ Escalation Controls

Engineering

- » Communications equipment available (phone, two-way radio)
- » First Aid kit available
- » Lanyards on tools to prevent dropping
- » Drop net in place to catch falling objects
- » Guardrails and kickboards
- » Shield working area from sun, wind and cold

Administration

- » JSA considers emergency response issues
- » Stand-by person available
- » First Aid trained person available
- » Move work to warmer/cooler locations
- » Plenty of breaks
- » Control extreme temperatures by rescheduling work to cooler/warmer times of day

PPE

- » Enforce adequate rest periods in suitable rest areas
- » Allow workers to pace work accounting for extreme heat and cold
- » Deploy buddy work system
- » Consider contact with hot/cold metal surfaces in extreme climates
- » All people wearing proper PPE
- » Use of restraining PPE

Risk Management Objectives

Your responsibilities when working at height.

Working at heights gives rise to a substantial number of serious and sometimes fatal accidents. There is no "safe height" and anyone working off the ground is at risk of falling or dropping objects onto other people. Potential problems can exist on suspended access platforms, scaffolds, ladders, roofs, open steelwork, excavations and any situation where work is being done in close proximity to edges, holes or fragile flooring materials.

It is the responsibility of everyone working at heights to:

- 01/ Prevent collapse of high platforms;
- 02/ Prevent materials falling from platforms;
- 03/ Prevent falls of people from platforms;
- 04/ Prevent contact with overhead power lines;
- 05/ Restrict use of platforms in inclement weather;
- 06/ Assist in controlling access to the work location;
- 07/ Speak out if concerned about safety; and
- 08/ Stop the job if it becomes unsafe to continue.