

APRIL 2016



Physiological Effects of Noise



Making Height safe Today



Yoga For Brain Power



Health Benefit of Almond



HSE Statistics



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Safety Awards and Trainings



Safety Alert

Physiological Effects of Noise

Workers Hearing Conservation

Noise affects hundreds of workers per year and in this article we shall consider the effects of high noise level exposure and review the various types of noise induced hearing loss that may occur. Finally we will then consider the general crime of noise exposure and health and what the approach to hearing conservation should be.

Noise exposure and health Noise dose

The damaging effects of noise are related to the total amount of energy or "dose" which the ear receives. The dose/energy depends on two factors: the level of noise and the duration of exposure. It is commonly accepted that equal amounts of noise energy entering the ear cause the same deafness to exposed workers irrespective of the noise and exposure profiles. Thus a short exposure to a high level of noise is considered to cause comparable hearing damage to a long exposure to a low level noise.

Exposure to high noise levels over a wide range of frequencies results in both auditory and non-auditory effects. The auditory effects are dominant, but as research findings become known the importance of occupational noise control in reducing non-auditory effects will become established.

Hearing loss

Hearing loss, i.e. the process of losing auditory sensitivity, can be classified under two broad headings:

- ✓ **Conductive Hearing Loss:** Occurs due to a physical breakdown of the conducting mechanism of the ear resulting from an acoustic trauma, e.g. an explosion or gunfire. The eardrum, ossicles or the cochlea could be damaged, often beyond repair. There is no cure, although for the eardrum surgery may reduce the damage. It is important to note that acute acoustic trauma is a very rare occupational trauma.
- ✓ **Sensorineural Hearing Loss:** Occurs when the cochlea or the hair cells in the Organ of Corti are damaged. Harm may result from natural causes, e.g. an infection or by physical injury. In an occupational setting, sensorineural hearing loss occurs mainly from exposure to excessive noise, resulting in varying levels of acoustic trauma. This is the main problem which, we as safety practitioners have to control.

Tinnitus

Tinnitus is a subjective condition where "noises in the head" or "ringing in the ear" are the descriptive symptoms. There are no observable external symptoms.

Tinnitus can occur after exposure to excessive noise levels as an acute condition which recedes with time. The recovery period could be 12 or more hours where high level exposure levels occur. People who have chronic noise induced hearing impairment can also suffer from the condition. The symptoms of tinnitus suggest that damage to the structure of the Organ of Corti or the auditory nerve has occurred. or possibly both.



Threshold shift

A Threshold shift is a reduction in a person's ability to hear, i.e. they need more sound intensity to stimulate their hearing. The condition can be temporary or permanent.

Temporary Threshold Shift (TTS)

A temporary threshold shift occurs after exposure to a high noise level; hearing acuity returns with time. The condition has been described as a fatigue of the hair cells in the Organ of Corti. The level of shift is expressed in terms of the raising sound intensity required to hear a given sound level, e.g. a 20dB shift means the sound pressure level has been increased by a value of 20dB. If a person is subjected to a high sound level, say 85 dB or over for a short period, and then has an audiometer test, a dip in hearing acuity occurs at 4000Hz. It is often described as the "4kHz dip" for acoustic trauma. The amount of "dip" from the 0dB average level is used to specify the amount of threshold shift. For TTS, the amount of 4kHz dip lessens with time as recovery from exposure occurs.

Physiological Effects of Noise (Continued...)

Permanent Threshold Shift (PTS)

Permanent threshold shift is the term used to describe the condition where there is a permanent 4 kHz dip in a person's audiogram. It is a nonreversible condition where the threshold shift does not return to the accepted norm as in TTS. It is generally accepted that PTS is a condition which follows from continual TTS exposures. PTS is not a social disability while the dip does not interfere with the speech range. Unfortunately, if further high noise exposures take place, the shift worsens until the condition described as noise induced hearing loss occurs.

Presbycusis

Presbycusis is a term used to describe a reduction in hearing acuity with frequencies at the higher end of the audio range which occurs naturally with age. An audiogram would show a smooth hearing loss beginning usually at about 1 kHz and falling to varying levels at about 8 kHz. The amount of hearing loss will vary with age. Between about 30 and 60 years of age the hearing loss can increase from about 5 dB to about 20 dB. Excessive noise can accelerate the onset of natural hearing loss.

Noise Induced Hearing Loss (NIHL)

Noise induced hearing loss is a condition which results from failure of the hair cells in the Organ of Corti to respond fully to sound intensities having frequencies within the speech range. The person does not necessarily lose the ability to hear sound, but is not able to distinguish the spoken word clearly, even if presented with a raised voice.

Noise exposure and health Noise immission level

Research suggests that the amount of threshold shift is related to the total noise exposure, i.e. the noise dose (level and duration). This enables the definition of an indicator termed the noise immission level, which is a function of the level of noise exposure (or Leq if noise fluctuates) and the number of years exposure.

Consequently the noise Immission level (NIL) is defined as:

$$NIL = L_a + 10 \log 10t$$

Where L_a is the level of noise in dB(A) [Leq]
And t is the number of year's duration

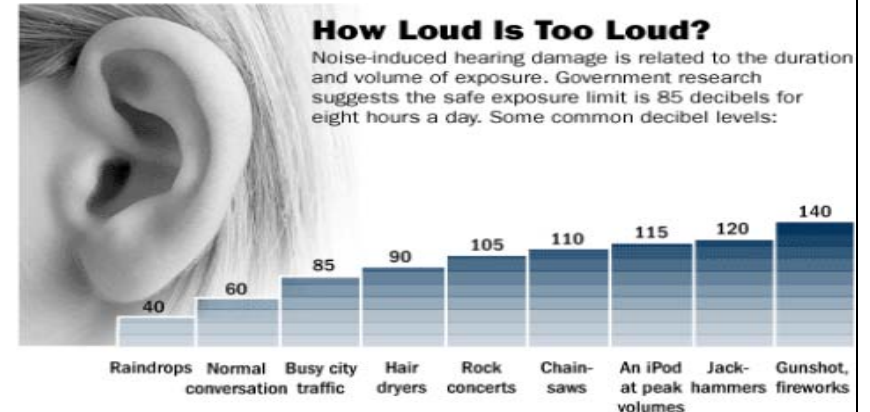
We have already seen that the maximum threshold shift occurs at 4 kHz which is characteristic of noise induced hearing loss. In the early stages of exposure the threshold shift diminishes after a few hours rest. Increased exposure leads to increasing threshold shift of which only part is recoverable after rest. The amount remaining after 40 hours is termed permanent threshold shift (PTS) and that recovered temporary threshold shift (TTS). Over many years of noise exposure the total loss increases with more of it being permanent.

Hearing conservation

The overall aim of noise control programmes is to reduce the amount of noise induced hearing loss which, as we have seen, depends on both level and duration of exposure. However, like other exposures to occupational agents noise induced hearing loss can also occur as a result of leisure or other non-occupational causes (concerts, nightclubs, etc.).

There is therefore a background level of non-occupational noise exposure below which it is non-productive to try and reduce occupational exposure. It is thus necessary to decide upon a level of exposure which affords sufficient reduction for hearing conservation whilst being realistic. If this level is set too low it will not prevent non-occupational noise induced hearing loss and will require difficult and expensive engineering solutions.

Noise induced hearing loss affects the frequencies that are required for good speech reception. Small losses at these frequencies can be tolerated towards the end of working life and the standard NIL of 104 dB over 40 years is deemed to be an acceptable compromise. Using the definition given above, this is equivalent to 88dB(A) at home and at work. Consequently if noise levels at work are controlled to <88dB(A) then the conservation criteria will not be exceeded.



Physiological Effects of Noise (Continued....)

Non-Auditory Physiological Effects

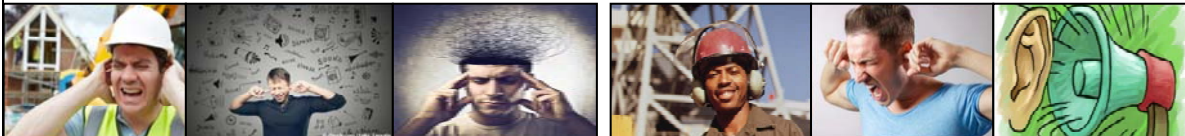
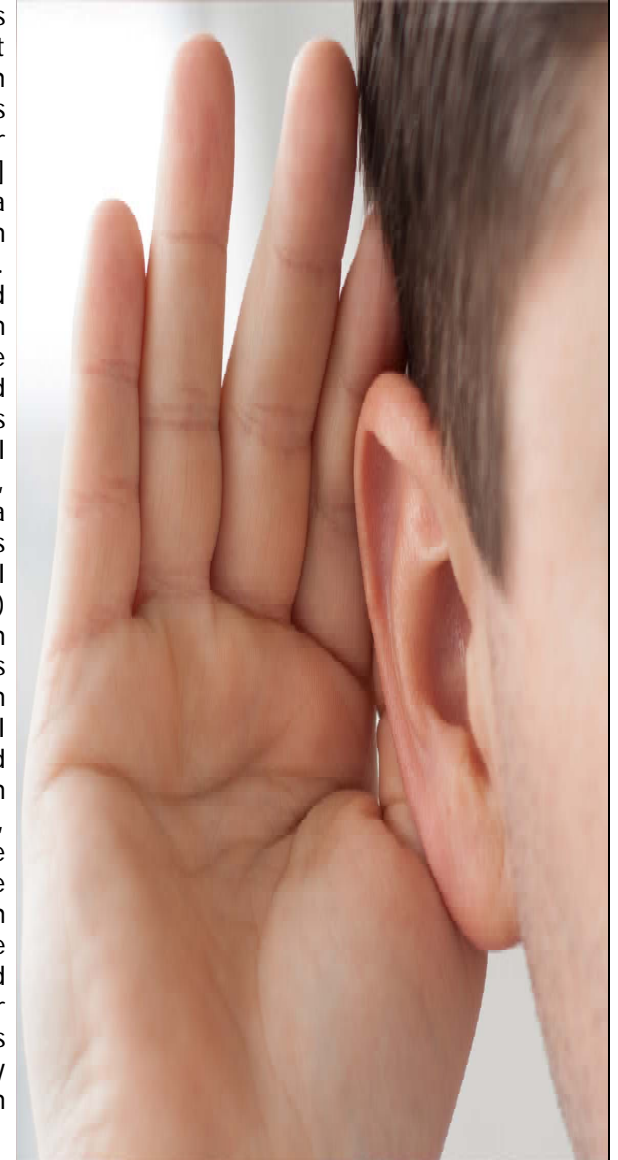
In addition to its effects on hearing, noise has also been implicated as having other physiological effects. Indeed, according to Ruback, Pandey, and Begum (1997), "individuals who complain about environmental stressors are probably also more likely to complain about other aspects of their life, including their health" (p. 29). Specifically, non-auditory physiological effects of noise pollution that have been identified thus far include cardiovascular, autonomic, and gastric effects. Further, it appears that noise can exert its non-auditory effects independent of hearing loss. For example, Peterson et al. (1981) effectively raised the blood pressure of rhesus monkeys by exposing them to elevated noise levels that did not decrease their auditory sensitivity.

The first category of non-auditory physiological effects includes effects on the cardiovascular system. In 1977, Knipschild and Oudshoorn indirectly demonstrated this effect by noting an increase in antihypertensive medication consumption in a village near an airport that correlated with an increase in aircraft traffic. A control village that was not near the airport did not demonstrate an increase in cardiovascular medication consumption during the same period.

The cardiovascular effects of noise have been the most abundantly researched non-auditory noise effects. According to Abel (1990), "loud noise is purported to cause vasoconstriction with a consequent increase in blood pressure. This leads in turn to smooth muscle hypertrophy, narrower lumen in small vessels, and increased resistance to blood flow. The end result is hypertension". To investigate this effect, both laboratory and field studies have been conducted.

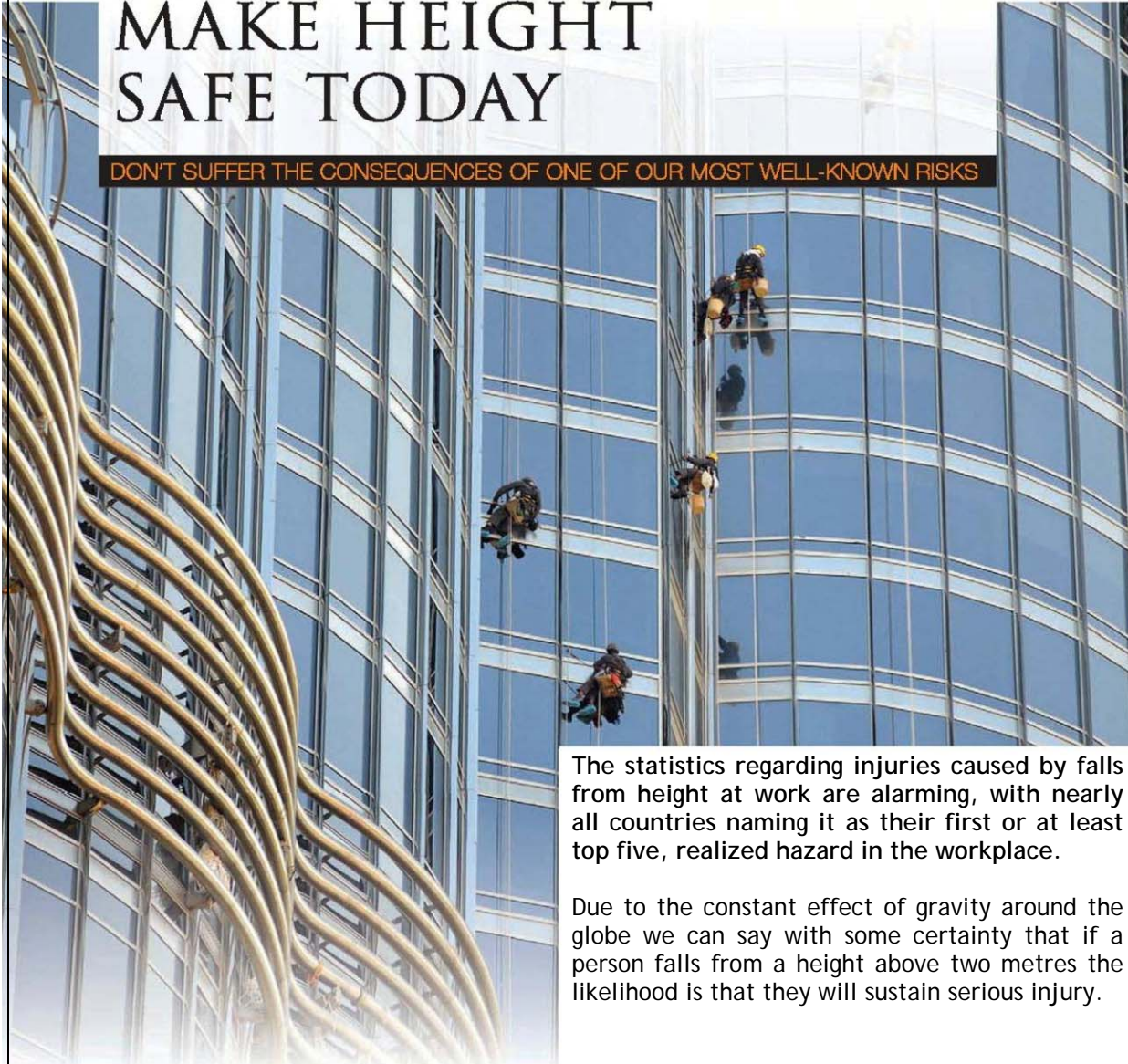
First, field studies have often been utilized to study the hypertensive effects of noise. These field studies can take place in either a community setting or an occupational setting. In an example of an occupational field study, Melamed and colleagues (1997) "studied the association between industrial noise exposure, noise annoyance, and serum lipid/lipoprotein levels in male and female blue-collar workers".

The researchers concluded that "exposure to high industrial noise levels may be a risk factor for [cardiovascular disease] via increased plasma lipids", especially in younger male workers. Van Dijk, Verbeek, and de Fries (1987) and van Dijk, Souman, and de Vries (1987) also studied the non-auditory effects of noise in industrial occupational settings, but in neither case was a relationship found. In his review of occupational studies, van Dijk (1990) then concludes that "in about half of the studies a positive relation [between occupational noise levels and blood pressure] has been found. Unfortunately, still no definite conclusions can be drawn". Thus, although occupational noise appears to be involved with cardiovascular disease, more research is needed before any definite conclusions can be drawn.



MAKE HEIGHT SAFE TODAY

DON'T SUFFER THE CONSEQUENCES OF ONE OF OUR MOST WELL-KNOWN RISKS



The statistics regarding injuries caused by falls from height at work are alarming, with nearly all countries naming it as their first or at least top five, realized hazard in the workplace.

Due to the constant effect of gravity around the globe we can say with some certainty that if a person falls from a height above two metres the likelihood is that they will sustain serious injury.

Many work activities involve working at height. Working from ladders, scaffolds and platforms are obvious examples, but there are many more activities where people are required to work at height. Examples include working on rooftops, over tanks and pits, at the edges of elevated structures, or on the tops of vehicles or trailers.

The main hazards associated with working at height are people falling and objects falling onto people below. These may occur as a result of inadequate edge protection, or from objects in storage being poorly secured.

Workers in maintenance and construction and many other people in a variety of jobs could be at risk of falling from height at work. Examples include: painters, decorators, window cleaners, exhibition erectors and those who undertake one-off jobs without proper training, planning and equipment. Another area of concern is the road transport industry.

Falls from height can be the result of:

- ✓ *Working at height without appropriate equipment*
- ✓ *Using equipment or practices not suitable for the task*
- ✓ *Using work at height equipment incorrectly, e.g. not in accordance with manufacturer's instructions, design or load capabilities*
- ✓ *The failure of equipment or anchor points*
- ✓ *Collapse of structure*
- ✓ *Poor planning, supervision, training or lack of competency*
- ✓ *Adverse weather conditions*
- ✓ *Complex natural environmental conditions*
- ✓ *Rough and uneven ground*
- ✓ *Complex built environmental conditions*
- ✓ *Fatigue*
- ✓ *Unpredictable behaviour of persons*

The nature and extent of an injury resulting from a fall from height may be influenced by the:

- ✓ *Height from which the person fell*
- ✓ *Angle of impact*

The nature and extent of an injury resulting from a fall from height may be influenced by the:

- ✓ *Height from which the person fell*
- ✓ *Angle of impact*
- ✓ *Suitability/weight of personal protective equipment (PPE)*
- ✓ *Any equipment carried*
- ✓ *Landing surface*
- ✓ *Impact with protrusions/objects during a fall*

Significant injuries can occur if persons are struck by falling objects. Due to the risk from falling objects, persons working at height or in areas below such work need to be aware of their surroundings at all times. Inclement weather, especially high winds, can cause overloading and damage that result in objects becoming dislodged and falling. It can also cause sheet materials such as glass and plywood to plane a considerable distance.

Fragile surfaces are another major area of concern. A fragile surface is one that will not support the weight of an imposed load. Typical examples of fragile materials are:

- ✓ *Plastic / perspex roof light sheets*
- ✓ *Asbestos / fibre cement sheets*
- ✓ *Metal sheets - particularly if corroded*
- ✓ *Glass*
- ✓ *Woodwool slabs and stramit board*
- ✓ *Fire damaged roofs*
- ✓ *Materials weakened by structural collapse, the effects of heat or water.*

Suspension trauma

With the increased use of harnesses and rope systems for recreation and in the workplace, a medical condition associated with prolonged suspension has been identified. Known as suspension syncope, orthostatic shock or suspension trauma, the condition occurs where an immobile person is suspended from a rope system restricting normal blood flow.

There has been well conducted research (with a low risk of bias) to support the following statements:

- ✓ *Motionless head-up suspension trauma can lead to presyncope in most normal subjects within one hour, and within 10 minutes in a fifth of subjects.*
- ✓ *Factors that may affect casualties in suspension and lead to presyncope, syncope and/or unconsciousness include dehydration, alcohol and prescribed medication.*

Outside the scope of this review, other research has concluded that the following factors may also affect casualties in suspension and lead to presyncope, syncope and/or unconsciousness, including: exhaustion, hypothermia, hypoglycemia, head trauma, shock, inclination of the body, hypovolemia and time delays in rescuing the casualty.

Hierarchy of controls

The most effective risk control measure to prevent falls is to avoid working at height in the first instance. This principle needs to be built into the planning processes at all levels. Where working at height cannot be avoided, consideration must be given to the following hierarchy of controls:

- ✓ *Carrying out the task from an existing place of work that does not need additional controls e.g. ground level, mezzanine floors, staircases*
- ✓ *Carrying out the task from a safe working platform*
- ✓ *Collective fall prevention - barriers and guard rails*
- ✓ *Collective fall protection - nets, air bags and soft landing systems*
- ✓ *Individual fall prevention - work restraint (sometimes known as travel restrictor) is a system consisting of the equipment used to keep a person from reaching a fall point such as the edge of a roof, or the edge of an elevated work platform*
- ✓ *Individual fall protection - full body harnesses and fall arrest systems are used to reduce the consequences should a fall occur; the entire system must be capable of withstanding the impact forces involved in a fall (including any additional weight being carried) and must be capable of minimising those forces to an acceptable level*



"known as suspension syncope, orthostatic shock or suspension trauma, the condition occurs where an immobile person is suspended from a rope system restricting normal blood flow".



Pre-planning

An essential element of managing risk is pre-planning. The integrated risk management plan will identify standards in terms of equipment and operational personnel required for safe systems of work to be employed.

Information should be collated on the risks in the appropriate area and make site specific risk information available to all relevant personnel, prior to and upon arrival to the task. This approach will help to ensure that work at height activity is planned, supervised and carried out safely.

All managers with a responsibility for organising and planning for work at height must be competent. Specific work at height responsibilities such as training and equipment procurement should be included in health and safety policies, and where appropriate, job descriptions.

All personnel operating at height must receive appropriate training before undertaking those duties. No personnel should work at height without proper equipment or training.

All relevant national guidance should be utilised in the development of work at height training courses.

The training programme should include:

- ✓ *Knowledge, understanding and/or the ability to apply the hierarchy of control measures in respect of working at height*
- ✓ *Knowledge and understanding of the working at height procedures*
- ✓ *Refresher training enabling personnel to achieve and maintain the required levels with the national competency framework*

Training records should be kept to provide an effective audit trail.

The person nominated to take overall management responsibility for work at height activities must receive such training as is necessary to provide the level of knowledge, skills and understanding required by the role.

It is essential that all operational personnel are suitably trained and assessed for competency in the use of their personal fall protection systems and work at height equipment, as well as the pre-checking of that equipment. These personnel must also have an appropriate aptitude for working at height, along with sufficient professional and technical training, knowledge and actual experience to enable them to:

- ✓ *Carry out their assigned duties at the level of responsibility allocated to them*
- ✓ *Understand fully any potential hazards related to the work and the equipment to be used*
- ✓ *Detect any technical defects or omissions in that work and equipment, recognise any implications for health and safety from those defects or omissions, and be able to take remedial action to deal with these*

All equipment must be fit for purpose and all operators should be trained and assessed for competence. All work at height equipment should be subjected to a formal procedure for examination, inspection and maintenance before and after use and at defined periods (in line with legislation). The level of use and any contamination of equipment should inform the frequency of detailed inspections and any interim inspections. Records of use and inspection should be kept throughout the life of the equipment.

It is essential that all load-bearing elements of work at height equipment are given a visual and tactile inspection before each use to ensure they are in a safe condition and operating correctly. Advice should be obtained from the manufacturer. Formal inspection procedures should be put in place to ensure that personal fall protection equipment is given a detailed inspection by a competent person before first use and at intervals not exceeding six months (or three months where the equipment is used in arduous conditions), and after circumstances liable to jeopardise safety have occurred.

Interim inspections of work at height might be needed between programmed, detailed inspections. For example, where the risk assessment has identified that work at height equipment has, or may have been exposed to a hazard that could cause significant deterioration in the equipment, it should be inspected and appropriate records made.



Examples of such hazards include paint, chemicals, acidic or alkaline environment. The need for and frequency of interim inspections will depend on the particular circumstances in which the equipment is to be used.

A record should be kept of all inspections of work at height equipment, with the exception of the pre-use inspection carried out prior to use at operational incidents or during training.

All equipment that is being hauled aloft or being lowered is to be adequately secured. Where equipment is being used to cut or dismantle plant or machinery at height, suitable precautions must be taken to prevent injury from any material that falls.

Hazard zones

For the purpose of this article and to afford clarification over the term 'hazard zone', this can be defined in two distinct ways.

A hazard zone is one which is established:

- ✓ Above or below any area where work at height is being undertaken, this would include acts such as hauling equipment aloft
- ✓ When working near any unprotected edge or slope leading to any unprotected edge within three metres, which is also known as the danger area
- ✓ To minimise the risk of injury to personnel, hazard zones must be established, cordoned off and operated using strict control procedures where the following occurs:
 - ✓ Individuals are working at height and there is a risk of a fall likely to cause injury
 - ✓ Individuals are at risk of being struck by falling objects
 - ✓ There is a risk of dislodging unstable materials

The stability of a surface must be determined before work begins. It can be difficult to distinguish between roof lights, roofing sheets and metal sheets particularly under certain environmental conditions; this has been a significant factor in past major accidents. All roofing sheets should be treated as fragile and should not be directly walked upon unless it can be determined that they are of adequate strength to support the load. Work must be arranged to ensure that personnel do not walk on or work near fragile surfaces.

Conclusion

With a measure of competence, good planning and proactive safety management, employees can work at height safely. Here are 10 tips to safe working at height:

- 1) *Identify all working at height activities undertaken by your employees and others, such as contractors, within your business.*
- 2) *Make an initial assessment of all these working at height activities to determine if there is a risk of injury to those who are working at height, or who may be affected by those working at height, e.g. potential to be struck by falling objects.*
- 3) *Remove the need for working at height activities wherever possible.*
- 4) *Where work at height cannot be avoided, undertake a full risk assessment of those remaining activities that have a significant level of risk.*
- 5) *Consider possible control measures based upon the hierarchy to minimise the risk as far as is reasonably practicable. Consult widely on proposed control measures.*
- 6) *Implement the necessary control measures.*
- 7) *Develop and implement a monitoring and maintenance strategy, i.e. how will you check to see that the control measures are being used and maintained?*
- 8) *Make sure you keep a record.*

As has been outlined above there remains a clear set of principles and standards that can be utilised for the management of working at height. However, it still remains one of our largest injury creators and even killers within all industries worldwide. This indicates that not only should we continue with standards and approaches such as those outlined above, but we must also continue to innovate different approaches to managing safety in this regard.



Yoga For Brain Power: Mindfulness Exercises Reduce Effects Of Cognitive Impairment By Improving Memory, Mood.

Forgetting names, faces, and important dates or events are all tell-tale signs of poor memory. This slow decline in our memory, thinking, and reasoning skills leaves us susceptible to age-related neurodegenerative diseases, including mild cognitive impairment and Alzheimer's disease, but researchers suggest this could potentially be reversed. A recent [study](#) published in the *Journal of Alzheimer's Disease* found [yoga and meditation](#) could reduce the cognitive and emotional problems linked to Alzheimer's and other forms of dementia compared to memory training exercises like crossword puzzles.

"Memory training was comparable to yoga with meditation in terms of improving memory, but yoga provided a broader benefit than memory training because it also helped with mood, anxiety and coping skills," said Helen Lavretsky, study author and a professor in residence in UCLA's department of psychiatry, and a researcher at UCLA's Semel Institute for Neuroscience and Human Behavior, [in a statement](#).

"Brain fitness" exercises, like the commercially available memory training program [Luminosity](#), have been touted for helping stave off age-related cognitive decline. The Luminosity program is made up of more than 40 games designed to improve cognitive abilities, including memory, attention and problem solving. Members are encouraged to play the games for 15 minutes, three to five times a week.

However, this game and other memory training programs have not been proven by the Federal Trade Commission to work the way they say they do. Rather, they take away from the real antidote that protects cognitive health in old age — a healthy, engaged lifestyle.

Lavretsky and her colleagues sought to compare the effects of yoga and meditation with memory training exercises on brain function in a small cohort of 25 participants over the age of 55 who reported issues with their memory. These issues included the tendency to forget names, faces or appointments, or to misplace things. The participants underwent memory tests and brain scans at the beginning and end of the study.



The participants were divided into two groups: 11 participants received one hour a week of memory enhancement training and spent 20 minutes a day performing memory exercises, like verbal and visual association to remember faces, names, and lists, and other strategies for improving memory, based on scientifically-proven techniques. The other 14 participants took a one-hour class once a week in Kundalini yoga — yoga that places emphasis on consciousness that activates energy centers throughout the body — and practiced Kirtan Kriya meditation — chanting, hand movements and visualization of light — at home for 20 minutes each day.

According to Lavretsky, Kirtan Kriya has been practiced for hundreds of years in India as a way to prevent cognitive decline in older adults.

The findings revealed that after 12 weeks the researchers saw similar improvements among both groups in verbal memory skills, which is useful for recalling locations and navigating while walking or driving. However, the yoga-meditation group fared better when it came to reducing feelings of depression and anxiety, and improving coping skills and resilience to stress. This is important since [cognitive impairment](#) can be an emotionally difficult condition to manage in old age.

Yoga For Brain Power: Mindfulness Exercises Reduce Effects Of Cognitive Impairment By Improving Memory, Mood.

"When you have memory loss, you can get quite anxious about that and it can lead to depression," Lavretsky said.

Improvement in memory coincided with changes in brain activity. Participants in both groups had changes in their brain connectivity, but the changes among the yoga group were more profound. Mindful exercise reduced stress and inflammation, improved mood and resilience, and enhanced the production of brain-derived neurotrophic growth factor – a protein that stimulates connections between neurons and kick-start telomerase activity. This is a process that replaces lost or damaged genetic material.

A similar 2013 study found mindfulness meditation has led to less shrinking in the hippocampus – the brain region that forms part of the limbic system and is mainly associated with memory and spatial navigation. Moreover, the researchers found older adult meditators had greater brain connectivity than those who didn't meditate in the "default mode network," an area of the brain involved in activities like daydreaming and thinking about the past and the future. This has been shown to improve memory.

Sarah Vaynerman, founder of Work From Om, a company that brings yoga, meditation and stress management to the workplace, and a yoga teacher, affirms the mental health benefits of yoga.

"Yoga also regulates the vagus nerve, one of the most important but least-known parts of our body that deals with our mood and stress levels," she told *Medical Daily*.

Yoga does this by stimulating and increasing the activity of stress-blocking neurotransmitters.

In addition, the relaxation breathing in yoga stimulates the parasympathetic nervous system – the rest-and-digest system that slows down heart rate and relaxes the muscles – to lower blood pressure and decrease heart rate when used to intervene on acute stress and anxiety, according to Vaynerman. This is particularly useful for older patients who can suffer emotional problems because of their mental struggles.

The research team proposes doctors look at alternative therapies like yoga to address common cognitive and emotional problems that come with neurodegenerative diseases.

"We're converting historical wisdom into the high level of evidence required for doctors to recommend therapy to their patients," said Harris Eyre, lead author of the study, a doctoral candidate at Australia's University of Adelaide, and a former Fulbright scholar at UCLA's Semel Institute for Neuroscience and Human Behavior, in a statement.

Alzheimer's is the most common form of dementia and the sixth leading cause of death in the U.S. Currently, there is no cure for Alzheimer's, but past and present research suggests yoga and meditation could play a vital role in preventing and improving symptoms of the disease.

"If you or your relatives are trying to improve your memory or offset the risk for developing memory loss or dementia, a regular practice of yoga and meditation could be a simple, safe and low-cost solution to improving your brain fitness," Lavretsky said.

Taking 20 minutes out of the day to catch our breath and meditate could preserve or keep our mind agile later in life.



Alfar Health & Safety

The health benefits of almonds are extensive, and they are frequently used as a healthy solution for relief from constipation, respiratory disorders, coughs, heart disorders, anemia, impotency, and diabetes. It also helps in maintenance of healthy hair, skin care (psoriasis), and dental care.

Almonds are found in places like Iran, Saudi Arabia, Lebanon, Turkey, Syria, Jordan and Israel. This highly nutritional nut is a rich source of vitamin E, calcium, phosphorous, iron and magnesium. It also contains zinc, selenium, copper and niacin. Compared to all other nuts, almonds are the most packed with nutrients and beneficial components.

Both sweet and bitter almonds are readily available. Traditionally, sweet almonds are edible, while bitter almonds are used to make almond oil, a common oil that is used to add flavor to food. Almonds are usually eaten raw, but many people also add them as ingredients in salads, casseroles, and other dishes. Almond milk is also a delicious beverage, and an alternative to less nutritious cow's milk. You can eat almonds directly, preferably on an empty stomach to increase and speed up the absorption of their nutrients. You can soak them in water overnight so you can eat them the morning. Crushed almonds are also a wonderful garnish for a number of dishes.

Almonds are known to have great medicinal value, which, along with their good taste, is the main reason that so many people proactively add almonds to their diet. Some of the researched and verified benefits of almonds are given below.

Good for your brain: Almonds are a source of many nutrients which help in the development and health of the human brain. Almonds have been connected to a higher intellectual level and they have long been considered an essential food item for growing children. Almonds also contain two vital brain nutrients, riboflavin and L-carnitine, which have been shown to increase brain activity, resulting in new neural pathways and a decreased occurrence of Alzheimer's disease. Studies have shown that almonds in the diet, as well as almond oil, is nutritive to the overall health and functioning of the nervous system.

Many mothers give almonds soaked in water to their children every morning. Two or three pieces of soaked almonds are enough, and you can also remove the outer shell if it causes allergic reactions, as the majority of the nutrients are not held in the shell.

Regulation of cholesterol: Regular consumption of almonds helps to increase the level of high density lipoproteins (HDL) and they reduce the level of low density lipoproteins (LDL). This balance is vital to a healthy cholesterol level, and a reduction of LDL (bad cholesterol) is always a good thing.

Newsletter

HEALTH BENEFITS OF ALMONDS

Nutrients
Dietary Fiber 49%, Protein 42%, Calories 29%, Carbohydrate 7%

Minerals
Copper 50%, Phosphorus 48%, Calcium 26%, Iron 21%, Zinc 21%, Manganese 114%, Magnesium 67%

Vitamins
Vitamin E 131%, Riboflavin 60%, Niacin 17%, Thiamin 14%, Folate 12%

- Help develop & maintain brain health
- Maintain a healthy cholesterol level
- Reduce risk of Alzheimer's disease
- Prevent osteoporosis
- Improve skin health & complexion
- Strengthen immune system
- Regulate blood pressure
- Reduce risk of heart diseases
- Help lose weight
- Good during pregnancy
- Prevent colon cancer
- Protect against diabetes

**% Daily Value per 100g. For e.g. 100g of Almonds provide 131% of daily requirement of Vitamin E

Caution! Avoid if you have kidney or gallbladder problems

Bone Health: Almonds are a fantastic source of many vitamins and minerals, and phosphorous is definitely counted among them! Phosphorous can have a considerable impact on the strength and durability of bones and teeth, while also preventing the onset of age-related conditions like osteoporosis.

Good for your heart: The mono-unsaturated fats, protein and potassium contained in almonds are all instrumental in heart health. Vitamin E is an effective antioxidant and also reduces the risk of heart diseases, while the presence of magnesium in almonds can help avoid heart attacks. Almonds help reduce the presence and impact of C-reactive proteins which causes artery-damaging inflammation. Almonds are also a great source of folic acid. Therefore, they help to reduce the level of homocysteine, which causes fatty plaque buildup in arteries. Furthermore, the flavonoids in the skin of almonds combines with Vitamin E to form a powerful shield against artery wall damage. Research suggests that short-term almond-enriched diet may improve vascular function in asymptomatic healthy men aged between 20 and 70 years without any effect on markers of oxidative stress.

Immune System Strength: Your body has many components that add to overall health, including the alkalinity of the systems. Almonds are great sources for alkali materials, and this is known to benefit the strength of the immune system, as well as increase the ability to stave off diseases and various health conditions. Along with almonds' contribution to alkaline levels, it also has a high content of Vitamin E, which is a powerful antioxidant. It seeks out all the damaging free radicals in the body and eliminates them, because they actually promote chronic diseases and can be horribly hazardous to the body's organ systems. Antioxidants like the Vitamin E found in almonds affect all major diseases, including cancer and heart disease. Research has actually shown that people who ingest high levels of Vitamin E are actually 30-40% less likely to contract heart disease.

Skin care: The benefits of almonds in regards to skin health are well known, and almond oil massages are often recommended for newborn babies. Almond milk is also added to some soaps, because of almonds well-established reputation of improving the complexion of skin.

Anti-Inflammation: Many people think that the word "fat" means something negative, but in fact, certain fatty acids are essential, and can be very beneficial for overall health. The body can't create its own fatty acids, which is why we need to get them from dietary sources. Almonds have two very important fatty acids, both linoleic and linolenic acids. Those fatty acids help to reduce inflammation all around the body, which is a general condition that many people suffer from. The fatty acids also help to reduce the levels of "bad" cholesterol (LDL cholesterol), and they promote healthy skin and hair! All in all, almonds pack a powerful, healthy punch.

Regulation of blood pressure: The potassium present in almonds helps to regulate blood pressure, and almonds are very low in sodium, which helps to control fluctuating blood pressure. The other nutrients also keep the body balanced in terms of other essential needs, which can prevent any other deficiencies. Balanced vitamins and minerals are essential for a healthy lifestyle, but if certain elements are neglected, the entire body can be affected, including anxiety, overall stress, and inevitably, increased blood pressure.

Boosts energy: The presence of manganese, copper and Riboflavin in almonds helps in energy production and metabolic rate. If you are on the go, a handful of almonds can get you through the day without filling you up with calories or fat.

Prevention of cancer: Almonds improve the movement of food through the colon, thereby preventing build-up and subsequent colon cancer. The National Cancer Center has done extensive research on the link between high-fiber diets and a reduced risk of colon cancer.

Protection against diabetes: Almonds also help to reduce the reactionary rise in glucose and insulin levels after meals. This modulation offers protection from the dangerous spikes in blood sugar which diabetics often suffer from following a large meal, or a meal with an unexpectedly high level of sugar in it. Almonds help regulate the absorption and processing of glucose, making the entire process much smoother, and subsequently safer.

Good for pregnancy: Almonds contain folic acid, which helps reduce the incidence of birth defects in newborn babies. It also stimulates healthy cell growth and tissue formation. Neural tube defects are conditions where the neural tube is either underdeveloped or is partially missing in the fetus. Doctors regularly prescribe folic acid supplements to pregnant women to ensure proper development of the tube, and almonds have enough folic acid to keep mothers and their babies healthy.

Weight loss: Unsweetened almond milk can be used if you are attempting to lose weight. The mono-unsaturated fat contained in almonds satisfies appetite and prevents over-eating. The dietary fiber in almonds also contributes to the sensation of being full, despite eating only a small amount. Studies have revealed that an almond-rich, low calorie diet is good for obese people to assist in shedding their excess weight. Studies have shown that those people who regularly consume almonds (at least twice a week) are far more likely to remain at their ideal weight, rather than those who rarely or never consume almonds and suffer from weight fluctuations.

HSE STATISTICS April 2016

No.	Performance Indicators	PROJECT 7067		
		Month	YTD-2016	PTD
1	Total number of employees	175		
2	Manhours worked	46,300	1,93,720	1,145,339
3	Fatalities (Death)	00	00	00
4	Fatal Accident Rate (FAR)	00	00	00
5	Permanent Total Disabilities	00	00	00
6	Permanent Partial Disabilities	00	00	00
7	Lost Workday Cases (LWDC)	00	00	00
8	Total Employees Trained	125	549	7184
9	Total Training Hours	182	786	9436
10	First Aid Cases	00	00	00
11	Near Misses	35	59	264
12	HSE Meetings	01	04	28
13	HSE Inspections	03	12	76
14	Emergency Exercises	00	02	14
15	Number of Vehicles	28		
16	Vehicle Kilometer Driven	92,483	3,46,561	2,791,583

No.	Performance Indicators	PROJECT 7072		
		Month	YTD-2016	PTD
1	Total number of employees	475		
2	Manhours worked	114,600	3,45,158	5,13,968
3	Fatalities (Death)	00	00	00
4	Fatal Accident Rate (FAR)	00	00	00
5	Permanent Total Disabilities	00	00	00
6	Permanent Partial Disabilities	00	00	00
7	Lost Workday Cases (LWDC)	00	00	00
8	Total Employees Trained	78	318	621
9	Total Training Hours(Average)	390	986	2024
10	First Aid Cases	00	00	00
11	Near Misses	56	83	85
12	HSE Meetings	01	05	12
13	HSE Inspections	02	08	14
14	Emergency Exercises	01	03	05
15	Number of Vehicles	62		
16	Vehicle Kilometer Driven	265,796	6,07,633	8,59,788

HSE STATISTICS APRIL 2016

No.	Performance Indicators	PROEJCT 7070		
		Month	YTD-2016	PTD
1	Total number of employees	62		
2	Manhours worked	24,250	1,53,980	4,73,358
3	Fatalities (Death)	00	00	00
4	Fatal Accident Rate (FAR)	00	00	00
5	Permanent Total Disabilities	00	00	00
6	Permanent Partial Disabilities	00	00	00
7	Lost Workday Cases (LWDC)	00	00	00
8	Total Employees Trained	08	74	427
9	Total Training Hours	79	485	1799
10	First Aid Cases	00	00	01
11	Near Misses	00	01	01
12	HSE Meetings	01	04	15
13	HSE Inspections	18	70	92
14	Emergency Exercises	00	00	03
15	Number of Vehicles	09		
16	Vehicle Kilometer Driven	51,119	2,51,440	6,50,211

No.	Performance Indicators	PROJECT 7071		
		Month	YTD-2016	PTD
1	Total number of employees	226		
2	Manhours worked	56,360	245,782	1,187,133
3	Fatalities (Death)	00	00	00
4	Fatal Accident Rate (FAR)	00	00	00
5	Permanent Total Disabilities	00	00	00
6	Permanent Partial Disabilities	00	00	00
7	Lost Workday Cases (LWDC)	00	00	00
8	Total Employees Trained	142	382	2643
9	Total Training Hours	85	451	3016
10	First Aid Cases	00	00	00
11	Near Misses	05	18	66
12	HSE Meetings	02	08	38
13	HSE Inspections	04	14	88
14	Emergency Exercises	01	02	10
15	Number of Vehicles	40		
16	Vehicle Kilometer Driven	112,466	525,314	2,095,839

SAFETY QUIZ FOR APRIL 2016

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>01) You are working on a flat roof. What is the best way to stop yourself falling over the edge?</p> <ul style="list-style-type: none"> a) Put a large warning sign at the edge of the roof b) Ask someone to watch you and shout when you get too close to the edge c) Protect the edge with a guard-rail and toe-board d) Use red and white tape to mark the edge <p>02) How many people should be on a ladder at the same time?</p> <ul style="list-style-type: none"> a) 2 b) 1 c) 1 on each section of an extension ladder d) 3 if it is long enough <p>03) What is the best way to make sure that a ladder is secure and won't slip?</p> <ul style="list-style-type: none"> a) Tie at the top b) Ask someone to stand with their foot on the bottom rung c) Tie it at the bottom d) Wedge the bottom of the ladder with blocks of wood <p>04) You need to use a ladder to get to a scaffold platform. Which of the statements is true?</p> <ul style="list-style-type: none"> a) It must be tied and extend about five rungs above the platform b) All broken rungs must be clearly marked c) It must be wedged at the bottom to stop it slipping d) Two people must be on the ladder at all times <p>05) When you climb a ladder, you must:</p> <ul style="list-style-type: none"> a) Have three points of contact with the ladder at all times b) Have two points of contact with the ladder at all times c) Use a safety harness d) Have two people on the ladder at all times | <p>06) A mobile tower scaffold must not be used on:</p> <ul style="list-style-type: none"> a) A paved patio b) Soft or uneven ground c) An asphalt road d) A smooth concrete path <p>07) You need to stack materials on a scaffold platform. What is the best way to stop them falling over the toe-board?</p> <ul style="list-style-type: none"> a) Put up warning signs on the stack b) Build the stack so that it leans away from the edge c) Fit brick guards d) Cover the stack with netting <p>08) It is safe to cross a fragile roof if you:</p> <ul style="list-style-type: none"> a) Don't walk on any plastic panels b) Use crawling boards c) Walk along the line of bolts d) Can see fragile roof signs <p>09) You need to work at height. It is not possible to install edge protection or a soft landing system. What should you do?</p> <ul style="list-style-type: none"> a) Hold onto something while you use your other hand to do the work b) Ask someone to hold you while you work c) Wear a harness and lanyard and fix it to an anchor point d) Tie a rope around your waist and tie the other end to an anchor point <p>10) You need to reach the working platform of a mobile tower scaffold. What is the right way to do this?</p> <ul style="list-style-type: none"> a) Climb up the tower frame on the outside of the tower b) Lean a ladder against the tower and climb up that c) Climb up the ladder built into the tower d) Jump from the rigid structure on which you are working |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



PICTURE OF THE MONTH



PARTICIPATE AND WIN **EXCITING PRIZES**

Send your Caption for Picture of the Month. We will select the Best Safety Caption and mention the name of the person in next month issue.

Send your Safety Quiz Answers. We will select the Winner and mention the name of the person in next month issue with right answers.

ratheeshrl@galfaremirates.com



SAFE MAN OF THE MONTH: APRIL 2016

Project 7067: Construction of Flow lines & Wellhead Installation of Typical Works in ADCO's Fields. (Package "C" - BuHasa/ Huwaila/ Bida Al Qemzan Fields)



Mr. Ramkyas Ram
Civil Helper
GEC NO. 275449
Certificate & Cash Award
of AED 500



Mr. Parimal Mandal
Civil Helper
GEC NO. 271699
Certificate & Cash Award
of AED 500

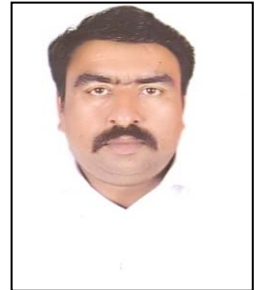


SAFE DRIVER OF THE MONTH: APRIL 2016

Project 7067: Construction of Flow lines & Wellhead Installation of Typical Works in ADCO's Fields. (Package "C" - BuHasa/ Huwaila/ Bida Al Qemzan Fields)



Mr. Noor Badshah
HD Driver
GEC- 272086
Certificate & Cash Award
of AED 500



Mr. Aveesh .T
LD Driver
GEC- 275554
Certificate & Cash Award
of AED 500



SAFE MAN OF THE MONTH: APRIL 2016

Project 7071: Construction of Flowlines & Wellhead Installation of Typical Works in ADCO's Field (Package "A" - SE Abu Dhabi (ASAB, Sahil, Shah, Qusahwira & Mender Fields)



Mr. ChandraSekhar Prasad
Pipe Fitter
GEC NO. 270521

Certificate & Cash Award of AED 250



Mr. GunaShekharan
Steel Fixer
GEC NO. 271488

Certificate & Cash Award of AED 250



Mr. Kannan .K
Mason
GEC NO. 271487

Certificate & Cash Award of AED 250



Mr. Balram Yadav
Rigger
GEC NO. 272738

Certificate & Cash Award of AED 250

SAFE DRIVER OF THE MONTH: APRIL 2016

Project 7071: Construction of Flowlines & Wellhead Installation of Typical Works in ADCO's Field (Package "A" - SE Abu Dhabi (ASAB, Sahil, Shah, Qusahwira & Mender Fields)



Mr. Rasool Nawas
Heavy Duty Driver
GEC NO. 275066

Certificate & Cash Award of AED 250



Mr. Guruswamy Keshwan
Heavy Duty Driver
GEC NO. 271853

Certificate & Cash Award of AED 250



Mr. Muralidharan Pillai
LD Driver
GEC NO. 273103

Certificate & Cash Award of AED 250



Mr. Ashref Kallingal
LD Driver
GEC NO. 272128

Certificate & Cash Award of AED 250

SAFE MAN OF THE MONTH: APRIL 2016

Project 7070: EPC for Thamama Zone B Development Enhancement Project - Phase-1 (Project No. P12436)



Mr. Tarkeshwa Ram
Electrician
GEC NO. 275905
Certificate &
Cash Award of AED 500



Mr. Jitendranath Behera
Civil Helper
GEC NO. 275672
Certificate &
Cash Award of AED 500



Mr. Niranjan Singh
Mechanical Helper
GEC NO. 273393
Certificate & Cash Award of AED 500

SAFE DRIVER OF THE MONTH: APRIL 2016

Project 7070: EPC for Thamama Zone B Development Enhancement Project - Phase-1 (Project No. P12436)



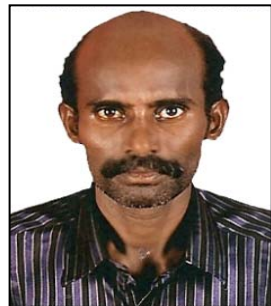
Mr. Riyas . K.V.
LD Driver
GEC NO. 276030
Certificate & Cash Award of AED 500

SAFE MAN OF THE MONTH: APRIL 2016

Project 7072: EPC for Buhasa Shuaiba South Artificial (Gas)Lift
Project Phase-1 (Project No: P12435)



Mr. Devendranath Yadav
Mechanical Helper
GEC NO. 274795
Certificate & Cash Award of AED 500



Mr. Murugesan
Mason
GEC NO. 273236
Certificate & Cash Award of AED 500

SAFE DRIVER OF THE MONTH: APRIL 2016

Project 7072: EPC for Buhasa Shuaiba South Artificial (Gas)Lift
Project Phase-1 (Project No: P12435)



Mr. Gopinath Pushkaran
HD Driver
GEC NO. 273020
Certificate & Cash Award of AED 500



Mr. Praveen SP
LD Driver
GEC NO. 275830
Certificate & Cash Award of AED 500

SAFE MAN OF THE MONTH: APRIL 2016

Project 7074: EPC for Bab Produced Water Re Injection Project)



Mr. Surendran
Scaffolder
GEC NO. 271997
Certificate & Cash Award of AED 500



Mr. Ravi Naik
Civil Helper
GEC NO. 276232
Certificate & Cash Award of AED 500

SAFE DRIVER OF THE MONTH: APRIL 2016

Project 7074: EPC for Bab Produced Water Re Injection Project)



Mr. Niyas
LD Driver
GEC NO. 276062
Certificate & Cash Award of AED 500



Mr. Surendran Singh
Operator
GEC NO. 270869
Certificate & Cash Award of AED 500

ROAD SAFETY CAMPAIGN AT GALFAR HABSHAN CAMP (PROJECT 7067/7070/7072/7074)



Road Safety Awareness Campaign for all Galfar drivers and operators has been conducted on 27.04.2016 at Galfar Habshana Camp.

Sr.Plant Manager: Mr. A. Sangamithiran, HR & Admin Manager: Ms. Ayisha Z. Hussain and CHSE: Mr. Ratheesh welcomed to all attendees and congratulated all drivers for their outstanding performances as well as given a strict instruction on compliance of ADCO and Galfar Road Safety Rule and Regulations.



The campaign covered events such as Road Safety Statistics and message by Road Safety Coordinator Mr. Sajan Thomas, Mr. Sunil Narayan and Mr. Abdilahi Mohamed Mire, Speech by Senior HSE Engineers Mr. Rajeev Vasudevan, Mr. Kailas Fulpagare, Mr. Sudheer Kumar Reddy.

Project Managers/ Construction Managers distributed Safe Driver of the Month Award to Drivers and operators.

Active participation from Drivers was observed. Drivers expressed their knowledge on Road safety issues and also provided suggestions.



A training session presented by Road Safety Coordinator on Do and Don'ts for Drivers and Operators.

Sr. Management Team and Project Team thanked everybody who attended the meeting.

Number of Attendees: 128 Nos. (109 Drivers and Operators)

NEW VEHICLES/ EQUIPMENTS IN GALFAR ABUDHABI



- | | |
|----------------------|-----------|
| 1. Steer Skid Loader | : 04 Nos. |
| 2. Back Hoe Loader | : 02 Nos. |
| 3. CAT Tool Carrier | : 01 No. |
| 4. Dozer komatsu | : 01 Nos. |



Hydro-Jetting Incident



What Happened

- ✓ An incident occurred at 02:30 hours on plant 15 when contractor employee was Hydro-jetting using a flexi-lance without the use of a "Safety Stinger".
- ✓ The employee was having difficulty getting the jet past a 45 degree bend in the pipework approximately 1.5 to 2 meters from the pipe entrance.
- ✓ The employee pulled the lance and the jet exited the pipework causing a jet strike injury to inner thigh before he could operate the safety foot valve.



Why it Happened

- ✓ A safety stinger was not being used due to the 45 degree bends in the pipework.
- ✓ The flexi-jetting without a "stinger" was not appropriate and should never have been authorised.
- ✓ The safety foot valve was operated by another contractor.
- ✓ It has been reported that the injured contractor had been having difficulty for some time and the crew were under client pressure to get the cleaning operation moving.
- ✓ An inadequate risk assessment.

Incident Area Photos



Lesson Learnt

- ✓ The safety foot valve should be operated by the same employee working on jetting operation.
- ✓ These operations without the use of a stinger are high risk and are undertaken on a last resort basis only.
- ✓ If someone asks for flexi-jet without "Stinger", the request should be referred to management. This kind of incident could of resulted in a very serious injury and even death.
- ✓ The job has been re-assessed by the RISAL jetting department and pipework of this type will now be cut prior to jetting to allow the use of safety "stinger devices".

