Welcome to the 17th Quarterly Safety and Health newsletter. I wish to thank the contributors of this newsletter for making it informative and interesting to read. The Chennai Metro Rail Project is actively committed to leading the development and attainment of world class safety standards. The overall performance in relation to target achievement and incident occurrences shows a step change toward this goal however, we recognize that the need for further improvement is necessary with emphasis on planned, risk managed operations without reliance on luck.

Ron Mickell - Project Director

CONGRATULATIONS – ATA-01-L&T-ALSTOM

Congratulations ATA-01-L&T-ALSTOM and UAA-04-L&T-SUCG JV are the contractors to achieve the High level CMRL performance target. This is an exemplary performance and one that should motivate and be emulated by all other Contractors on the project. The CMRL audit criteria has been both criticized and recognized as a tough target to meet however, the attainment by these ATA-01-L&T-ALSTOM and UAA-04-L&T-SUCG JV contractors shows that with good planning, coordination and competence and with plenty of project management determination this can be achieved.
<table>
<thead>
<tr>
<th>L&amp;T Safety month celebrations 2015.</th>
<th>Third party Height Work training and emergency rescue demonstration conducted at Guindy.</th>
<th>Road Traffic week awareness along with pamphlets' was distributed to road users.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly Meeting conducted by Mr. Gurusamy (Project Manager) with all the front line staff &amp; supervisors.</td>
<td>Fire training given by site supervisor to all other workmen.</td>
<td>Dr. Rama Kumar giving awareness about Dengue fever to workmen.</td>
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<tr>
<td>Housekeeping programme conducted and price distribution given to workmen.</td>
<td>Monthly meeting conducted to all front line supervisors.</td>
<td>First Aid &amp; CPR training given toll Workmen.</td>
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</table>
At ACD-01 CMRL Depot Project, during this quarter various promotional activities like safety month celebration 2015 for make safety a thing to remember from January to December, Eye check-up camp, blood donation camp, AIDS awareness program, Gas cutting safety training etc., were organised & conducted to create proactive EHS awareness and visibly demonstrate our commitment towards EHS among the workforce, staff and client.

“LIVE INJURY FREE EACH DAY”

Safety Month Celebration Inaugural Function - January 2015.
Mass Eye checkup camp organized for drivers, operators by M/s Sankara Netralaya Eye Hospital.
Online ATL (Any Time Learning) Safety course completion certificate & prize distribution to Site Engineer.

Safety Flag Hoisting by RE, ER.
Blood donation camp organized in association with Dr.MGR Medical University.
Safety Conscious Person Award - prize & certificate distribution by Chief Engineer (S&H) deputy, ER.

Safety Month Celebration Valedictory function 2015.
AIDS Awareness program conducted for workmen by M/s FPA India.
Flash back Arrestor safety demonstration Training for gas cutters by M/s Messer cutting.
We are proud to express our honour to achieve 28 million safe man hours upto this quarter.

- Blood donation camp conducted in Sri Ramalu park.
- Bone Densitometry Test conducted in TTA – UAA-01.
- Distribution of Helmets on eve of Road safety week.
- Malarial & Dengue medical camp conducted in labour camp and distributed anti malarial tablets to all workers.
- Arrangement of Drinking water facility in the sites.
- For clear visibility of Equipments in night times reflective tape was stucked.
- Nose mask with cartridge using for painting and spraying of paint for vehicles.
- Sprinkling of water in and outside the site premises to control dust.
- Moving wheels got attached for easy movement of hoarding boards.

“SAFETY ISN’T JUST A SLOGAN, IT’S A WAY OF LIFE”
OUR FEEL ABOUT SAFETY, OCCUPATIONAL HEALTH AND ENVIRONMENT.

1. Safety Motivation Program is conducted in the sites on monthly basis to boost up the morals of the working crafts. Rewards and certificates are apparently given to those complying Safety Plan & CEMP that including Sub-Contractors. And also on every Saturday Snacks/Fruits are distributed to crafts after finishing TBT.

2. ITC LTD Paper Board division had given an appreciation certificate for “Wealth Out Of Waste” a National recycling initiative @ 119 Kgs of used papers was given for recycling and apparently 3 Trees got saved.

3. Water sprinkling is done twice at all of Site areas, Batching Plant and Labor living areas to suppress the dust, loose cement, which may suffocate Working Crafts, Stake Holders, Poor Visibility & Occupational Problems.

4. Food Waste is collected in Bins at a designated place and the Food Waste is disposed from our Sites, Batching Plant & Labor Camps on daily basis to eliminate Stinking and Vermin etc.

5. Environmental Statistic flex maintained at our Sites & Batching Plant. Required details are manually maintained updated by our Environmental Department.

6. IGBC Green MRTS Work Shop was organized at our Thousand Lights Office. And the company is going ahead for IGBC Green MRTS certification. Attendees were from Gammon and officials from GC & CMRL.
We, Gammon-Mosmetrostroy JV, UAA-03 always endeavor to achieve higher standard through continuous innovations, initiatives apart from the routine requirements.

<table>
<thead>
<tr>
<th>National Safety Day celebrations at Nandanam Station. Our GM projects raised the safety flag.</th>
<th>Good housekeeping and emergency lighting ensured in tunnels.</th>
<th>Tree saplings were given to AGDMS office by Gammon India Limited.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swine flu awareness and precautions was communicated to all workers by Dr. Manivannan.</td>
<td>Oral cancer program, organized by CMRL was done at our Nanthanpakkam Labour camp.</td>
<td>A view of good housekeeping in MMS Tunnel section.</td>
</tr>
<tr>
<td>Green nets were provided to prevent dust pollution in batching plant.</td>
<td>Regular cleaning of sign boards are carried out by Gammon-MMS JV.</td>
<td>A view of good housekeeping in Saidapet Station concourse slab.</td>
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<tr>
<td>Waste segregation at Station area.</td>
<td>Waste disposal training to workers.</td>
<td>Provision of cage for waste bins.</td>
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We at L&T SUCG JV are happy and proud to inform that we have bagged two safety awards back to back one is from NATIONAL SAFETY COUNCIL OF INDIA, MUMBAI and one more from CII (Confederation of Indian Industry – Southern Region) for EHS EXCELLENCE AWARD for adopting bench marking safety practices in Construction Industry. This was made possible only with the support, assistance and guidance of ER / CMRL team members. Our JV partner SUCG has almost completed the tunnelling work successfully and we are working on final tunnel break through at Nehru Park from KMC. Now our entire focus is on E&M, Architectural works and construction of Cross Passages and erection of OTE Ducts at all stations. More impetus is being paid on outbreak of Epidemic issues like SWINE FLU, MALARIA and DENGUE Fever etc., by conducting more health camps and awareness program “CHALLENGE MYTHS, CHANGE BEHAVIOURS AND MONITOR CONTINUOUSLY”.

Safety Month - (January 2015) Celebrated at L&T SUCG JV UAA-04 Package with the presence of CMRL and ER Representattives. Road safety awareness week observed at all station sites with the help of traffic police.

Behaviour Based Safety Training for Managers and Engineers

Safety In Oxy-Fuel Operation By Messer (On Site Practical Demo)

Permit To Work Training For All Engineers and Supervisors

SOP (Standard Operating Procedure) display for current activity at site entrance.


Appreciation Certificate Recived from KMC hospital for our CSR Activities & Initiatives

Blood Donation Camp Conducted with the help of KMC Blood Bank (116 Units Collected) Mock Drill Conducted On Road Accident at Pachaiyappas College Station
At CMRL-UAA 05 Project, during this quarter various promotional activities were conducted to create awareness among the workers and staff. Also with constant effort through Team work, we have achieved 65% in GC MARS AUDIT for the past 3 quarters. Safety, Health and Environmental aspects are implemented as per CMRL/GC requirements and various internal and external trainings were given to workers and staff from approved agencies.

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
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<tbody>
<tr>
<td>Road Safety Week celebrated by TTA-JV in coordination with CTP.</td>
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<tr>
<td>Safety Flag hoisted by Mr. Udaya Kumar (RE – GC) on National Safety Day</td>
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<td>Speech by Mr. H Jayaram (PM – UAA 05) on National Safety Day</td>
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<tr>
<td>Oral Cancer Awareness Camp conducted in Labour Colony for all workers to bring awareness about oral hygiene.</td>
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<tr>
<td>Permit to Work System Training to all management staff by EHS Solutions</td>
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<tr>
<td>LOTO training to workers by EHS Solutions</td>
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<tr>
<td>Medical Emergencies and Response training by Dr. Thorat [Corporate Physician]</td>
<td></td>
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<tr>
<td>Mock Drill conducted at Labour Colony</td>
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<td>Defensive driving training conducted by IRT to all operators</td>
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<tr>
<td>Hand Tool Power Tool – Hazards and Control training to workers by Safety Catch</td>
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<tr>
<td>Behaviour Based Safety Management training conducted by Safety Catch</td>
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<tr>
<td>MS/RA briefing to staff/workers before commencement of work.</td>
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At ATA-01 CMRL Track Work Project, during this quarter various promotional activities were conducted to create EHS awareness among the workforce and staff at site. We strive to achieve excellence in OHSE through continual improvement, by Innovation, Motivation & Team work. With constant Technical support from ER / CMRL, we will try to set Benchmark Standards in Safety. As part of L&T’s Safety Month Celebrations 2015, various special activities like Medical camp with Audiometry examination, AIDS Awareness camp, Training to school children & Teachers are carried out. To motivate all workmen, Engineers / Supervisors, various Safety competitions were held & around 125 prizes were distributed. An Innovative Safety Skit (Drama) by School children was conducted, which was well received by all workmen.
To achieve a Culture of “Zero Harm” Siemens BU Head & corporate EHS Personnel conducted EHS Audit in our project.

Road safety week celebrated at our site office and project site locations.

Monthly EHS meeting are conducted and EHS issues are discussed & closed out for safe working environment.

Fire Extinguisher operation Training are conducted on monthly basis to handle fire emergency situation.

Ladder Safety trainings are conducted to workers on regular basis.

COSHH/MSDS briefings are conducted to all workers and staff.

Height work video trainings are conducted to workers and staff to educate the hazards and control measures for safe working.

Manuel Handling Trainings are conducted to workers on regular basis to mitigate the back injuries.

Weekly Health Briefing being conducted to workers about the hazards associated with their nature of work to minimize health risks.

Job specific (Stud welding) Trainings are conducted to all workers and Technicians on regular basis.

Portable power tools safety trainings are conducted to operators/ workers on regular intervals.

To motivate Workers “safe man of month” award system were implemented at our project.
SHE Committee meeting

Tool box talk – OHE cantilever erection

National Safety Day Celebration at Site

Noise Monitoring at Koyambedu Depot

Anti-bird nest erection

Two track cantilever erection using Unimog and trolley

Medical camp at Koyambedu Site

Safety Training to OHE Team – Job/Task Safety Analysis by CSM
<table>
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<tr>
<th>Event Description</th>
<th>Images</th>
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<tr>
<td>External Management Training &quot;Communication &amp; Customer Relationship skill&quot;</td>
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<tr>
<td>conducted on 23rd Jan for JLPL Project Team.</td>
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<tr>
<td>External Management Training &quot;Human values&quot;, conducted on 21st Feb for JLPL</td>
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<tr>
<td>Project Team.</td>
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<td>To meet real Emergency situations, Mock Drill exercises have been conducted on</td>
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<tr>
<td>Scenario namely &quot;FIRE FIGHTING&quot; in Ekkatuthangal Station on 13.01.2015.</td>
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<tr>
<td>Prior to start of daily work, Safety Pledge is being read out at all sites to</td>
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<td>inculcate sense of duty.</td>
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<tr>
<td>Fire Mock Drill</td>
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<td>DRILL &amp; PLEDGE</td>
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<tr>
<td>Good Safety Practice – Reading of Safety Pledge daily</td>
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<tr>
<td>Project Head presided over the Safety Committee Meeting on Jan 29th and CSM</td>
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<tr>
<td>delivered Monthly Safety Performance.</td>
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<td>Project Head presented the Best Safety performer award to Lift &amp; Escalator Team</td>
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<tr>
<td>members.</td>
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<tr>
<td>Monthly Safety Performance Presentation - SHE Committee Meeting</td>
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<tr>
<td>SHE COMMITTEE MEETING</td>
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<tr>
<td>Best Safety Performance Award</td>
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<tr>
<td>As a Health Promotional measure General Health Check – up, Dental Check – up</td>
<td></td>
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<tr>
<td>and Eye test conducted for JLPL – CMRL Project Staff on 21.01.2015.</td>
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<tr>
<td>General Health &amp; Dental Check up</td>
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<tr>
<td>HEALTH PROMOTIONAL ACTIVITIES</td>
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<tr>
<td>Vision Check - up</td>
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ITD CEMENTATION INDIA LTD
ECV-07(CCT) PROJECT

ITD Cementation India Limited (ITD Cem) has contributed significantly in the growth of Infrastructure in the country over the last eight decades. The management of the company is dedicated to maintain the international standards of Health Safety and Environment in the industry. To maintain the best safety practices in ECV-07(CCT), CMRL Project, company is organizing lot of Training and promotional activities.

- National Safety Day-2015 Celebration
- OHS&E Quiz Competition
- Fire Training To Workmen
- Work at Height Training
- Fire Training to Staff Members
- Manual Material Handling Training
- Work Place Hazards Briefing by Management Staff
- Motivational Gift to Workmen
Voltas - VAC, UAA 07 achieved 66.1% score in MARS in second audit. While acknowledging the challenges related to SHE management in dealing with unskilled work force which is transient in nature and underground stations in various locations, Voltas believes that with focused efforts and support from the leadership team this can definitely be achieved. As SHE Promotional activity a health awareness program on “Swine Flu” is conducted for our staff by Dr. D Suresh Kumar, MD, Specialist in Infectious diseases, Apollo Hospital.
NCC Limited celebrated 44th National Safety Week 2015

<table>
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<tr>
<th>Image 1</th>
<th>Image 2</th>
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<tbody>
<tr>
<td>Mr. Ramesh Dy.G.M (Tech) NCCL hoisted National Safety Council Flag</td>
<td>Mr. Kuldeep Mishra P.M (ER) is delivering his speech to Workers and Staffs on the eve of Celebration</td>
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<tr>
<th>Image 3</th>
<th>Image 4</th>
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<tbody>
<tr>
<td>Mr. C Kannan C.S.E (ER) is delivering his speech to Workers and Staffs on the eve of Celebration</td>
<td>The Winners are awarded Safety Prizes and Certificate by Mr. C Kannan C.S.E (ER)</td>
</tr>
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<tr>
<th>Image 5</th>
<th>Image 6</th>
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</thead>
<tbody>
<tr>
<td>Internal Training on Work at Height given to Workers</td>
<td>Fire Mock Drill and Fire Fighting Training Given to Workers</td>
</tr>
</tbody>
</table>
We at URC CONSTRUCTION (P) LTD., in an effort to take our Safety to next level. The Management of the Company is dedicated to maintain the International Standard of Health, Safety & Environment in the industry to maintain the best Safety Practices in EAS–06. We are proud to express our Honour to achieve 8,10,000 safe man hours upto this quarter. During this quarter various training were conducted to create awareness among the workers and staff.

HIV Awareness, Eye and Blood test Medical Camp on 6th Jan 15.

Fire fighting training for Staff and Workers was conducted on 15th Jan 15.

Free Medical facility provided to all Employees on bimonthly basis.

Safety Day celebrated and Safety flag hoisted by ER Safety Engineer Mr. Karimullah.

Safety Pledge by Safety Head Mr. Riyaz Khan, all Staff Members and Workers on 4th Mar 15.

Audit team Mr.Riyaz Khan, Mr.Shankar & Mr. Karimullah during Site Audit in St. Thomas Mount.

V.P. Brigadier Mushtaq briefing the importance of Health, Safety, Security and Environment.

Documents verification by Mr.Shankar during Mars Audit.

Mock Drill conducted by Safety Department in St. Thomas Mount Station
44th National Safety day Flag Hoisting by V.P. Mr. Kasi Arumugam (CMRL Projects) on 4th March 2015.

Safety Pledge by Sr.HSC Manager. S.Govindharaj, all Staffs and Labours on National Safety Day.

Dental Camp conducted for all staffs and labours on January 2015.

SHE Committee Meeting by V.P. Brigadier Mushtaq.

Medical Checkup for all staffs and Labours.

Safety Briefing given for Staffs and Labours.

Fire Extinguisher operation training program conducted for Staffs and Labours on Jan 2015.

Monthly checkup conducted by First Aider to Labours

THE BEST SAFETY DEVICE IS A SAFE WORKER

REMEMBER SAFETY IS GAINFUL, ACCIDENT IS PAINFUL.

SHE for MYSELF MY FAMILY MY COMPANY
Lift Plan Guidance

When attempting any lift, regardless of how small or seemingly insignificant, there is some basic information that must be known and confirmed before you begin. These major lifts are executed with precision and are successful if the plan is carefully followed. Sufficient planning and supervision are necessary in preventing crane accidents. If something goes wrong, the result is likely to be disastrous – severe damage to property with risk of injury or loss of life is a real possibility. Good planning protects cranes and the people working around them. Cranes are one of the most versatile pieces of equipment working on many heavy and highway construction sites. When used correctly with a trained and competent crew, cranes are one of the safest pieces of equipment.

What is a Lift Plan?

Having identified a requirement for a lifting operation involving the use of a crane it should be established if the particular operation has been carried out before on that site, as a Risk Assessment and Lift Plan may already exist.

If a particular Risk Assessment and Lift Plan do exist then they should be assessed to confirm that they are still applicable; changes to personnel, site layout or work environment could all result in the need for a reassessment of hazards. Assuming that significant changes have not taken place, lifting operations may proceed under the requirements of the Lift Plan, subject to the normal approvals.

If the lifting operations have not been carried out before then a risk assessment should be carried out and a lift plan prepared.

Know your limitations

Once you’ve decided on the need for a crane, you must decide whether to use company-owned equipment or rent a crane. Competent person should be assigned to take full control and total responsibility for the planned lift. A — competent personal is a person with sufficient training, technical knowledge and experience to develop a safe plan of work for lifting operations, in order to satisfy the needs of the contractor

Site visit

In my opinion, there is enough time not given to the site visit. In many instances, assumptions are made in the estimating process about site conditions. The person assigned to create the lifting plan should make arrangements to visit the site to gain all the information needed to ensure the lift can be made from a specific location and that ground conditions are suitable for supporting the weight of a crane and the materials to be lifted. The competent person should also plan for the best possible access and egress for the assembly and disassembly of the crane and the materials to be lifted. Existing proximity to hazards and any on-going construction work which may develop during the planning phase should be of particular interest when developing the lift plan. Once a rough sketch of the area has been made and some detailed notes taken, the competent person can start considering the other aspects of the lifting process. Detailed written information regarding the load or loads must be obtained. This information should include such items as:

Description

What type of load will you be lifting – forms, I Girder, LG boxes, Rebar Cage Panel, Plunge Column, TBM Parts, rail, fabricated bridge, precast deck panels, or bridge deck girders?

Weight

Are the net and gross load weights known? Did you remember to factor in the weight of a crane load block; jib; rigging; hook, ball, and swivel; all cable below boom point; and other accessories?
Contents

Are there any hidden contents that could affect load weight and stability, or that could be hazardous if spilled? Is the center of gravity marked on the load?

Nearby collision hazards

Is the crane site suitable? Is the crane next to a haul road? Can the crane’s superstructure rotate 360° without coming into contact with any object creating a trapping point between the counterweight and the fixed object? Can the crane be assembled and disassembled with outriggers or crawlers fully extended in accordance with manufacturer’s specifications.

Ground conditions

Is the ground on which the crane is to sit firm and level? Is it capable of withstanding the ground-bearing pressure of an outrigger jack or a crawler crane track with the load suspended over the corner of the track or outrigger? Are there any hollow structures under the crane pad? Are crane mats needed to stabilize any soft ground conditions? Information on ground-bearing pressures can be obtained from the crane supplier and manufacturer.

The crane

After considering the loads and the location of the crane, the competent person should choose a crane. For example, if the crane is needed for an extended period and the ground conditions are too soft for a mobile truck crane, the competent person may opt for a crawler crane. The competent person needs to know cranes well. In particular:

- The capacity and limitations of each crane type
- The methods of work the crane can perform
- The crane’s safe working loads from the load chart
- The dimensions and weight of the crane, both in transit and after being fully set up
- If necessary, the outrigger or crawler crane track ground-bearing pressures (available from the supplier or manufacturer).
- The competent person should also check with local agencies for any restrictions or limitations on crane operations in the area.
- If renting a crane for the lift, request crane annual inspection certificate and maintenance records.

Accessories

Choosing the right accessory is just as important as the site visit, load calculations and crane choice. Commonly-used accessories include wire rope slings, round endless slings, eyebolts and multiple leg slings, just to name a few. Accessories must be in good order and free of common, easily-identifiable faults and defects.

The competent person is responsible for the choice of lifting accessories most suitable for the lifting operation. This decision may depend on including and consulting with others and relying on the manufacturer’s instructions and guidance. When choosing lifting accessories, the competent person must pay particular attention to:

- The safe working loads or working load limits of the accessories
- The number and type needed
- The number of legs required
- The suitability to and compatibility of accessories with each other and lifting points
- Most importantly, the calculation of angles between slings and accessory legs

Lifting accessory manufacturers provide the user with a large amount of technical information on their
proper use. Much of this is designed with the user in mind and is simplified to ensure that the user has a full understanding of their safe and efficient use.

The competent person also needs to visually inspect all accessories prior to use. This inspection will identify the most common faults that may occur during use. These include:

- Cuts and tears
- Deformity
- Discoloration
- Stretching, distortion and elongation of links and components
- Rust and corrosion
- Missing items such as safety catches and pins
- Missing markings such as identity numbers and working load limit markings

**Personnel**

The Competent Person (CP) is someone who has the required level of competence, through practical skills and theoretical knowledge, to plan and supervise lifting operations. The CP must be able to:

- Carry out Risk Assessments;
- Prepare and assess Lift Plans;
- Conduct Toolbox Talks.

The CP is the focal point for technical aspects of the lifting operation, although they may not be directly involved in supervision of the operation.

The Certified lifting supervisor, certified signal person and the operator’s most important role is to stop the lift if:

- He does not understand what is required
- Unplanned changes to the lifting operation have occurred
- There are doubts about the continued safety of the lift or crew involved

The competent person will direct the lift with the assistance of the crane operator, certified signal person, or qualified rigger, and the operator, signal person, or rigger shall be responsible for the attachment and removal of lifting accessories. The basic criteria to remember is that all people involved must be competent. All personnel involved with the lifting operation must be able to work together as a team. Each is equally responsible for the safety and well-being of the others.

The key to this team involvement is that the competent person must bring together information and people from several areas to ensure that the lift is planned properly, supervised appropriately, and carried out safely.

This information is only a guideline to a successful lift. All lifts are different and require attention to detail by all contractors involved in the art of cranes and lifting.

C.Kannan
“Chief (Safety & Health) Engineer Deputy”
General Consultant