Rescue operations - Rescue from cranes

Parts of crane

- Chassis
- Tower (steel construction - latticework)
- Arm with pulleys
- Ladder
- Lift
- Driver's cabin

Anchor points

- Driver's cabin
- Crane arm
- Ladder

Hazards during intervention

- Fall from height
- Electricity
- Unstable construction
- Casualty behaviour (serious injury, mental disease …)
- Fall of equipment
- Environment (wind, rain, freeze)

Safety instructions

- Switch-off the power (electricity)
- Secure crane against moving
- Define and mark (by stripes) place of accident
- Forbid people to entry to the place of accident (especially under the crane arm)
- Turn crane arm by wind direction

Pre-incident planning

- Location of all cranes (include new cranes)
- Types of cranes
- Contact person (technician for each crane)
- Possibilities for different tactical variants
- Training and exercises in real conditions

Personnel

- rescue group (leader, 2 climbers) with special equipment
- support team to secure place of incident and help rescue group

Equipment

- Dynamic ropes, static ropes
- Descending devices
- Harnesses, rescue triangles or rescue strips
- Helmets, knifes
- Slings, carabiners, carabiner HMS, Figure 8

Tactical variantions

1. Rescue from crane by turntable ladders or platforms

Depends on

- Casualty location (height)
- Abilities of turntable ladders or platforms
- Environment conditions

Advantages

- It’s not necessary to use special rescue team
- Speed of rescue operation
- Elimination of a human fault during rescue operations

Procedure

- Arrival to the place of incident and stabilisation of ladder/platform
- Ascending to casualty place
- Transfer of casualty to basket or ladder, securing of casualty (treatment of the worst injuries …)
- Descending to the ground (first aid …)

Pictures

2. Rescue from crane by helicopters

Depends on

- Weather conditions and time (impossible after sunset …)
- Position and height of buildings close to crane
- Mental mood of casualty („I don't want to be rescued!!!")

Advantages

- It's not necessary to ascend and build anchor points
- Very fast rescue method
- It's possible to move casualty directly from scene to hospital

Procedure

- Arrival of helicopter
- Descending to casualty
- Securing of rescuer to crane (choosing of anchor points), departure of helicopter
- Securing of casualty (first aid)
- Position of casualty to rescue triangle or stretcher
- Arrival of helicopter, rescuer attach casualty and himself to rope
- Departure of helicopter

3. Rescue from crane by special rescue group

Depends on

- Training of special rescue team
- Technical equipment (rope length)
- Crane condition (stability, corrosion …)
- Position of casualty
- Weather condition
- Crane environment (technologies, buildings …)

Advantages

- Less of restriction than previous techniques
- More independent of weather and environment conditions

Types of procedures

a) Rescue from driver's cabin (mostly it is rescue of driver after crane contact with electricity cable or after drivers´ collapse)
b) Rescue from crane arm (mostly it is rescue of civilians as result of theirs abnormal behaviour - mental disease, drunken people …)

A. Rescue from driver's cabin

Procedure

- Ascending to the place of casualty (ladder on crane or latticework with self securing)
- Securing of casualty (first aid) in cabin
- Position of casualty in rescue triangle or stretcher
- Building of anchor system on crane construction (more than two independent points for all descending equipment)
- Lowering of casualty or passive descending of rescuer with casualty in use descending device. It is also possible to make cable way from place of casualty to the ground

Pictures

B. Rescue from crane arm

Procedure

- Ascending to the place of casualty (ladder on crane and latticework with self securing)
- Securing of casualty (first aid) in arm
- Position of casualty in rescue triangle or stretcher
- Building of anchor system on crane construction (more than two independent points for all descending equipment)
- Lowering of casualty or passive descending of rescuer with casualty in use of descending device. It is also possible to make cable way from place of casualty to the ground

Pictures